Reliability Report - 54LS04

Low power Schottky Logic - Hex Inverter Gates

MIL-PRF-38534 CLASS K QUALIFICATION DATAPACK

Performed by Tandex Test Labs

TANDEX

15849 Business Center Drive, Irwindale, CA 91706, U.S.A.
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www.tandexlabs.com

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- Scanning Electron Microscopy (SEM) analysis.

Certificate of Conformance

TANDEX TEST LABS, INC.

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e-mail: via web site

Certificate of Conformance

CUSTOMER:	**SILICON SUPPLIES LIMITED** **47 WHERRY ROAD** **NORWICH, NR1, 1WS** **UNITED KINGDOM VAT** **GB#114 3513 56**	*DATE: November 2, 2018*	
TEST REPORT:	***DDS-101-14-A***	*QUANTITY RECEIVED:*	***30+25 DIE***
P.O. NUMBER:	***SS139***	*QUANTITY REQUIRED:*	*10/5/8*
DESCRIPTION:	***SCHOTTKY LOGIC MICROCIRCUIT***	*QUANTITY PROCESSED:*	*17*
PART NUMBER(S):	***54LS04***	*QUANTITY PASSED:*	*17*
P/N: AS RECEIVED / MFG. PART NUMBER:	***54LS04***	*QUANTITY FAILED:*	*0*
LOT / DATE CODE:	***1810 LOT# 700654 WF 11***		
MANUFACTURE: CAGE CODE:	***SILICON SUPPLIES***	***QUANTITY SHIPPING:***	***17****
		INCLUDES: 10 PROCESS ACCEPT 5 BOND PULL DEVICES 2 SPARE	
TANDEX CAGE CODE:	***1FE65***	**8 DIE TRANSFERRED TO DDS-101-14-W FOR SEM.*	

METHOD OF TESTING: MIL-PRF-38534 CL. K, MIL-STD-883

I hereby certify that the subject components have been processed and inspected in accordance with instructions with specifications referenced in your purchase order. Physical records and/or data pertinent to applicable military, proprietary, and/or commercial specifications are on file and available upon request for inspection at this facility.

Linda S. Sepulveda
QUALITY ASSURANCE

QMF 30

Process Flow Chart + Mechanical Test Results

TANDEX TEST LABS INC.

QMF22B

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PROCESS FLOW CHART

FLOW NUMBER: DDS-101-14-A REV. 0

CUSTOMER: DIE DEVICES
P.O. NUMBER: SS139
PART NUMBER: 54LS04
P/N AS RECEIVED: 54LS04
PART TYPE: SCHOTTKY LOGIC MICROCIRCUIT
DRAWING: MIL-PRF-38534 CL K, MIL-STD-883
DUE DATE: 7/12/18
JOB NUMBER: DDS-101-14-A
LDC AS RECEIVED: 1810 LOT# 700654 WF11
QUANTITY RECEIVED : 30 (DIE)
QUOTE NUMBER: DDS14267-1 MFG: SILICON SUPPLIES
QUANTITY REQUIRED : 10/5/8 + 25 NEW DIE

CAUTION: ESD REFER TO TTL DRAWING #P1025

SEQ	PROC	REF #	DESCRIPTION	QTY	REJ	ACCEPT	DATE	INSP.
01	FLO	P-1015 P-1223	FLOW PREPARED BY: LSS . ON: 3/29/18 . CONTRACTUAL AGREEMENT REVIEW Y / N / NOT SPECIFIED ☐ / ☐ / ☑ Q-CLAUSES ☐ / ☑ / ☐ DPAS ☐ / ☑ / ☐ DFAR ☐ / ☑ / ☐ ITAR ☐ / ☐ OTHER _____ SPECIFIED					QA TANDEX 5
02	QCI		TANDEX QUALITY CONTROL INSPECTION. FLOW APPROVED BY: JMI . ON: 3/29/18 .					
03	RCV	P-1070	VERIFY PART NUMBER. ENTER INTO INCOMING LOG. X CUSTOMER COUNT 6/18/18 QA TANDEX 5	30 +25			3/29/18	QA TANDEX 5
04	VIS	P-1041	PERFORM 100% DIE VISUAL PER MIL-STD-883 METHOD 2010 AND MIL-PRF-38534 PARA C.3.3.2. EQUIPMENT USED: Olympus . ASSET #: 20041 . ESD MAT DUE DATE: 6/27/18.	25 30	0	25 30	6/18/18	TTL 4
05	ASSY	P-1029	PACKAGE SUFFICIENT DEVICES FOR CLASS K ELEMENT EVALUATION / ELECTRICAL AND BOND PULL PER MIL-PRF-38534 REFERENCE DIE GEOMETRY FOR ORIENTATION AND PIN – OUTS. DIE ATTACH: SCREENING EUTETIC Lot#: 149555 Exp. Date: NA BOND PULL SEM * **Package Type: 14 PIN DIP** TRANSFER TO DDS-101-14-W MIL-STD-883 METHOD 2018 ESD MAT DUE DATE: 6/27/18.	10+2 5 8	0 0 0	10+2 5 8	6/18/18 6/18/18 6/18/18	TTL 27 TTL 27 TTL 4
		P-4010	WIRE BOND: Utilize 1 Mil Au Wire (.001) 1 Mil Au bonder Mech-el Asset #: 20060 Gold Wire: 900301960 Lot#: _____ Exp. Date: 3/16/20	17	0	17	6/19/18	TTL 27

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PROCESS FLOW CHART

FLOW NUMBER: DDS-101-14-A REV. 0

CUSTOMER: DIE DEVICES
P.O. NUMBER: SS139
PART NUMBER: 54LS04
P/N AS RECEIVED: 54LS04
PART TYPE: SCHOTTKY LOGIC MICROCIRCUIT
DRAWING: MIL-PRF-38534 CL K, MIL-STD-883
DUE DATE: 7/12/18
JOB NUMBER: DDS-101-14-A
LDC AS RECEIVED: 1810 LOT# 700654 WF11
QUANTITY RECEIVED : 30 (DIE)
QUOTE NUMBER: DDS14267-1 MFG: SILICON SUPPLIES
QUANTITY REQUIRED : 10/5/8

CAUTION: ESD REFER TO TTL DRAWING #P1025

SEQ	PROC	REF #	DESCRIPTION	QTY	REJ	ACCEPT	DATE	INSP.
06	VIS		PERFORM 100% INTERNAL VISUAL PER MIL-STD-883 METHOD 2010 & MIL-PRF-38534 C.3.3.3, C.3.3.4.2. ESD MAT DUE DATE: 6/27/18. EQUIPMENT USED: Bausch Lomb. ASSET #: 30172.	17	0	17	6/19/18	TTL 27
07	SEAL		SEAL DEVICES VACUUM BAKE: ESD MAT DUE DATE: 6/27/18. Pre Seal Bake Time: Temp: 125°C Time: 24hrs Actual time in: 12:00 PM 6/19/18 Actual time out: 12:10pm 6/20/18 FURNACE LDC 1824 STAMP TTL 30 Actual temp: 125°C	10+2	0	10+2	6/20/18	TTL 30
08	ELEC		PERFORM 100% ELECTRICAL VERIFICATION TEST PER MFG DATA SHEET AND MIL-PRF-38534 @ AMBIENT OPERATING TEMPERATURE GO / NO GO ESD MAT DUE DATE: 7/27/18 EQUIPMENT USED: SONIAX ASSET#: 1093 +25°C TEST FIXTURE: 1377/1207 SOFTWARE ID: 54LS04 REV N/A	10+2	0	10+2	7/16/18	
09	TEMP		PERFORM TEMPERATURE CYCLING PER MIL-STD-883 METHOD 1010 CONDITION C & MIL-PRF-38534 C.3.3.3. TEN (10) CYCLES TA = -65°C +0/-10 to +150°C +15/-0 10 MINUTES AT EXTREMES DATE IN TIME IN DATE OUT TIME OUT EQUIPMENT USED: DELTA DESIGN. ASSET #: 30626. EQUIPMENT USED: OMEGA HH309A. ASSET #: 31567.	10+2 10+2	0 0	10+2 10+2	7/25/18 5:16 A.M 7/25/18 9:55 A.M	TTL 48 TTL 48
10	ACCE		PERFORM CONSTANT ACCELERATION PER MIL-PRF-38534 MIL-STD-883 METHOD 2001. ESD MAT DUE DATE: 7/27/18 Y1 DIRECTION ONLY @ 3000 G's (min) EQUIPMENT USED: TRIOTech. ASSET #: 30260	10+2	0	10+2	7/26/18	TTL 52
11	SER		SERIALIZE ESD MAT DUE DATE: 8/27/18 S/N: ~~01-10~~ 01-12 QM STAMP	10+2	0	10+2	7/31/18	TTL 40

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PROCESS FLOW CHART

FLOW NUMBER: DDS-101-14-A REV. 0

CUSTOMER: DIE DEVICES
P.O. NUMBER: SS139
PART NUMBER: 54LS04
P/N AS RECEIVED: 54LS04
PART TYPE: SCHOTTKY LOGIC MICROCIRCUIT
DRAWING: MIL-PRF-38534 CL K, MIL-STD-883
DUE DATE: 7/12/18
JOB NUMBER: DDS-101-14-A
LDC AS RECEIVED: 1810 LOT# 700654 WF11
QUANTITY RECEIVED : 30 (DIE)
QUOTE NUMBER: DDS14267-1 MFG: SILICON SUPPLIES
QUANTITY REQUIRED : 10/5/8

CAUTION: ESD REFER TO TTL DRAWING #P1025

SEQ	PROC	REF #	DESCRIPTION	QTY	REJ	ACCEP	DATE	INSP.
12	ELEC		PERFORM 100% ELECTRICAL VERIFICATION PER MFG DATA SHEET3 AND MIL-PRF-38534 C.3.3.4.3 @ AMBIENT , HIGH AND LOW OPERATING TEMPERATURES. READ AND RECORD. ESD MAT DUE DATE: 8/27/18. STATIC AND FUNCTIONAL TESTS +25°C - 55°C +125°C EQUIPMENT USED: Sentry ASSET#: 1093 TEST FIXTURE: 1377/1201 SOFTWARE ID: 54LS04 REV N/A TEMPERATURE SOAK 10 SEC.	12 12 12	Ø Ø Ø	12 12 12	8/1/18 8/1/18 8/1/18	CM CM CM
13	BI		PERFORM BURN IN PER BURN IN CIRCUIT PER FIGURE 1 OF DWG# 1026-16668, AND MIL-STD 883 METHOD 1015. ESD MAT DUE DATE: 8/27/18. TA = 125°C (min) T = 240 HRS (min) DATE IN: TIME IN: BURN-IN BOARD # / DESC: 31270 BURN-IN OVEN #: 21 DATE OUT: TIME OUT:	12 12	Ø Ø	12 12	8/9/18 6:30AM 8/20/18 5:45AM	TTL 13 TTL 13
14	ELEC		PERFORM POST BURN IN ELECTRICAL VERIFICATION PER MFG DATA SHEET AND MIL-PRF-38534 C.3.3.4.3 @ AMBIENT, HIGH AND LOW OPERATING TEMPERATURES. READ AND RECORD. ESD MAT DUE DATE: 8/27/18. STATIC AND FUNCTIONAL TESTS +25°C - 55°C +125°C TEST +25°C WITHIN 96 HOURS EQUIPMENT USED: Sentry ASSET#: 1093 TEST FIXTURE: 1377/1201 SOFTWARE ID: 54LS04 REV N/A TEMPERATURE SOAK 10 SEC.	12 12 12	Ø Ø Ø	12 12 12	8/29/18 8/29/18 8/20/18	TTL 10 TTL 10 TTL 10
15	ER		PER PO REQUIREMENTS: REVIEW AT POST 240 HR. BURN-IN EMAIL: ben.white@diedevices.com POST 240 HR BURN-IN ELECTRICAL TEST DATA. HOLD FOR APPROVAL TO PROCEED DATE SENT: 8/29/18				8/30/18	QA TANDEX 5

TANDEX TEST LABS

BURN - IN MONITOR SHEET

JOB NUMBER DDS-101-14-A

PART NUMBER 54LS04

DATE CODE 1810 LOT # 700654 WF11

BURN-IN TIME 240 hrs Min

θJC= N/A

TEMPERATURE TA=+125°C Min

TEMP. METER # 31368

VOLTAGE VCC=+5 Vdc

VOLT METER# 31223

POWER SUPPLY# 30721

BOARD# 31270

OVEN# 21

DATE	TIME	VOLTAGE	CURRENT	TEMP.	INITIAL	COMMENTS
8/9/18	6:30AM	VCC=+5Vdc	ICC=.05A	126.0°C	CM	
8/10/18	6:45AM	VCC=+5Vdc	ICC=.05A	125.7°C	CM	
8/13/18	5:40AM	VCC=+5Vdc	ICC=.05A	125.6°C	CM	
8/14/18	NO	DATA	TAKEN			
8/15/18	NO	DATA	TAKEN			
8/16/18	6:05AM	VCC=+5Vdc	ICC=.05A	126.1°C	CM	
8/17/18	9:35AM	VCC=+5Vdc	ICC=.05A	126.1°C	CM	
8/20/18	5:45AM	VCC=+5Vdc	ICC=.05A	126.1°C	CM	

TANDEX TEST LABS INC.

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PROCESS FLOW CHART

FLOW NUMBER: DDS-101-14-A REV. 0

CUSTOMER: DIE DEVICES
P.O. NUMBER: SS139
PART NUMBER: 54LS04
P/N AS RECEIVED: 54LS04
PART TYPE: SCHOTTKY LOGIC MICROCIRCUIT
DRAWING: MIL-PRF-38534 CL K, MIL-STD-883
DUE DATE: 7/12/18
JOB NUMBER: DDS-101-14-A
LDC AS RECEIVED: 1810 LOT# 700654 WF11
QUANTITY RECEIVED : 30 (DIE)
QUOTE NUMBER: DDS14267-1 MFG: SILICON SUPPLIES
QUANTITY REQUIRED : 10/5/8

CAUTION: ESD REFER TO TTL DRAWING #P1025

SEQ	PROC	REF #	DESCRIPTION	QTY	REJ	ACCEPT	DATE	INSP.
16	SSL		PERFORM STEADY STATE LIFE TEST PER MIL-PRF-38534 AND MIL-STD 883 METHOD 1005. TA = 125°C (min) T = 1000 HRS (min) DATE IN: / TIME IN: DATE OUT: / TIME OUT: BURN-IN BOARD # / DESC: 31270 BURN-IN OVEN #: 21 **ESD MAT DUE DATE:** 10/27/18	12 12	0 0	12 12	9/4/18 8:00AM 10/16/18 5:30PM	TTL 13 TTL 13
17	ELEC		PERFORM POST STEADY STATE LIFE ELECTRICAL VERIFICATION PER MFG DATA SHEET AND MIL-PRF-38534 C.3.3.4.3. @ AMBIENT, HIGH AND LOW OPERATING TEMPERATURE. READ AND RECORD. STATIC AND FUNCTIONAL TESTS TEST +25°C WITHIN 96 HOURS +25°C - 55°C +125°C EQUIPMENT USED: Sentry 1 , ASSET#: 1093 TEST FIXTURE: 1377/1201 SOFTWARE ID: REV **ESD MAT DUE DATE:** 10/27/18	12 12 12	0 0 0	12 12 12	10/16/18 10/16/18 10/16/18	TTL 27 TTL 27 TTL 27
18	DBP		PERFORM WIRE BOND PULL PER MIL-STD-883 METHOD 2011, & MIL-PRF-38534 C.3.3.3, C3.3.5. TEN (10) WIRES, ***DO NOT USE ELECTRICAL TEST SAMPLES*** EQUIPMENT USED: DAGE , ASSET #: 30785	5	0	5	9/11/18	#4 QA TANDEX 5
19	SEM		PULLED 8 DEVICES AT SEQ. 05 AND TRANSFERRED TO: DDS-101-14-W	8	0	8	11/1/18	QA TANDEX 5

TANDEX TEST LABS

BURN - IN MONITOR SHEET

JOB NUMBER DDS-101-14-A

PART NUMBER 54LS04

DATE CODE 1810 LOT# 700654 WF11

BURN-IN TIME 1000hrs Min

θJC= N/A

TEMPERATURE TA=+125°C Min

TEMP. METER # 31368

VOLTAGE VCC=+5VDC

VOLT METER# 31223

POWER SUPPLY# 30721

BOARD# 31270

OVEN# 21

DATE	TIME	VOLTAGE	CURRENT	TEMP.	INITIAL	COMMENTS
9/4/18	8:00AM	VCC=+5VDC	ICC=.05A	126.5°C	CM	
9/5/18	7:30AM	VCC=+5VDC	ICC=.05A	125.5°C	CM	
9/6/18	10:00AM	VCC=+5VDC	ICC=.05A	126.0°C	CM	
9/7/18	5:50AM	VCC=+5VDC	ICC=.05A	126.6°C	CM	
9/10/18	7:00AM	VCC=+5VDC	ICC=.05A	126.2°C	CM	
9/11/18	6:00AM	VCC=+5VDC	ICC=.05A	126.0°C	CM	
9/12/18	NO	DATA	TAKEN			
9/13/18	9:05AM	VCC=+5VDC	ICC=.05A	125.8°C	CM	
9/14/18	8:55AM	VCC=+5VDC	ICC=.05A	126.5°C	CM	

TANDEX TEST LABS

BURN - IN MONITOR SHEET

JOB NUMBER DDS-101-14-A

PART NUMBER 54LS04

DATE CODE 1810 LOT# 700654 WF11

BURN-IN TIME 1000hrs Min

θJC= N/A

TEMPERATURE TA=+125°C Min

TEMP. METER # 31368

VOLTAGE VCC=+5VDC

VOLT METER# 31223

POWER SUPPLY# 30721

BOARD# 31270

OVEN# 21

DATE	TIME	VOLTAGE	CURRENT	TEMP.	INITIAL	COMMENTS
9/17/18	8:00AM	VCC=+5mA	ICC=.05A	126.4°C	CM	
9/18/18	5:50AM	VCC=+5VDC	ICC=.05A	126.6°C	CM	
9/19/18	5:30AM	VCC=+5mA	ICC=.05A	126.2°C	CM	
9/20/18	7:30AM	VCC=+5mA	ICC=.05A	126.3°C	CM	
9/21/18	NO	DATA	TAKEN			
9/24/18	NO	DATA	TAKEN			
9/25/18	5:30AM	VCC=+5mA	ICC=.05A	126.2°C	CM	
9/26/18	6:00AM	VCC=+5VDC	ICC=.05A	126.3°C	CM	
9/27/18	6:30AM	VCC=+5mA	ICC=.05A	126.7°C	CM	
9/28/18	6:56AM	VCC=+5mA	ICC=.05A	127.2°C	CM	

TANDEX TEST LABS

BURN - IN MONITOR SHEET

JOB NUMBER DDS-101-14-A

PART NUMBER 54LS04

DATE CODE 1810 LOT# 700654 WF11

BURN-IN TIME 1000hrs Min

θJC= N/A

TEMPERATURE TA=+125°C Min

TEMP. METER # 31368

VOLTAGE VCC=+5VDC

VOLT METER# 31223

POWER SUPPLY# 30721

BOARD# 31270

OVEN# 21

DATE	TIME	VOLTAGE	CURRENT	TEMP.	INITIAL	COMMENTS
10/1/18	6:00AM	VCC=+5VDC	ICC=.05A	127.7°C	CM	
10/2/18	8:40AM	VCC=+5VDC	ICC=.05A	126.6°C	CM	
10/3/18	7:30AM	VCC=+5VDC	ICC=.05A	127.4°C	CM	
10/4/18	7:00AM	VCC=+5VDC	ICC=.05A	125.5°C	CM	
10/5/18	6:00AM	VCC=+5VDC	ICC=.05A	127.6°C	CM	
10/8/18	5:30AM	VCC=+5VDC	ICC=.05A	127.1°C	CM	
10/9/18	NO	DATA	TAKEN			
10/10/18	6:00AM	VCC=+5VDC	ICC=.05A	126.8°C	CM	
10/11/18	5:30AM	VCC=+5VDC	ICC=.05A	127.4°C	CM	
10/12/18	5:10AM	VCC=+5VDC	ICC=.05A	126.4°C	CM	

TANDEX TEST LABS

BURN - IN MONITOR SHEET

JOB NUMBER DDS-101-14-A

PART NUMBER 54LS04

DATE CODE 1810 LOT# 700654 WF11

BURN-IN TIME 1000hrs Min

θJC= N/A

TEMPERATURE TA=+125°C Min

TEMP. METER # 31368

VOLTAGE VCC=+5VDC

VOLT METER# 31223

POWER SUPPLY# 30721

BOARD# 31270

OVEN# 21

DATE	TIME	VOLTAGE	CURRENT	TEMP.	INITIAL	COMMENTS
10/15/18	6:10AM	VCC=+5VDC	ICC=.05A	127.0°C	CM	
10/16/18	5:30AM	VCC=+5VDC	ICC=.05A	127.4°C	CM	

TANDEX TEST LABS TTL# DDS-101-14-A
BOND PULL
BOND STRENGTH TESTING

TTL Job No.	Part Number	Part Type	Date
DDS-101-14-A	54LS04	SCHOTTKY LOGIC MI-CROCIRCUIT	September 11, 2018
Lot Date Code	**Sample Qty.**	**Serial Numbers**	**Test Specifications**
LOT# 700654 W# 11 1810	5	11-15	Mil-Std-883 Method 2011
Misc.	**Qty Accept**	**Qty Reject**	**Suspect**
	5	0	0

WIRE TYPE	PACKAGE/POST	BOND TYPE
Au	Au	BALL BOND
DIE METALIZATION	**WIRE SIZE**	**MINIMUM PULL STRENGTH**
Al	0.001	2.5gm

S/N 11			S/N 12			S/N 13			S/N 14			S/N 15			S/N		
WIRE NO	FORCE	CODE	WIRE NO	FORCE	CODE	WIRE NO	FORCE	CODE	WIRE NO	FORCE	CODE	WIRE NO	FORCE	CODE	WIRE NO	FORCE	CODE
1	4.0	G	1	4.0	G	1	5.0	G	1	4.5	G	1	4.5	G	1		
2	4.5	G	2	4.5	G	2	4.0	E	2	5.0	G	2	3.0	G	2		
3			3			3			3			3			3		
4			4			4			4			4			4		
5			5			5			5			5			5		

CODE INDEX

A. NO BREAKS UP TO _____gms.

B. BOND LIFTS FROM DIE.

C. BOND LIFTS FROM POST.

D. WIRE BREAKS AT SUBSTRATE/HEAL.

E. BOND REMOVES UNDERLYING METALLIZATION.

F. NO CONNECTION.

G. WIRE BREAKS AT DIE/HEAL.

H. WIRE BREAKS AT POST/HEAL.

J. WIRE BREAKS AT SPAN.

X. BOND DAMAGE PRIOR TO TESTING.

TTL 4

TECHNICIAN STAMP:

TANDEX TEST LABS INC.

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PROCESS FLOW CHART

FLOW NUMBER: DDS-101-14-A REV. 0

CUSTOMER: DIE DEVICES
P.O. NUMBER: SS139
PART NUMBER: 54LS04
P/N AS RECEIVED: 54LS04
PART TYPE: SCHOTTKY LOGIC MICROCIRCUIT
DRAWING: MIL-PRF-38534 CL K, MIL-STD-883
DUE DATE: 7/12/18
JOB NUMBER: DDS-101-14-A
LDC AS RECEIVED: 1810 LOT# 700654 WF11
QUANTITY RECEIVED : 30 (DIE)
QUOTE NUMBER: DDS14267-1 MFG: SILICON SUPPLIES
QUANTITY REQUIRED : 10/5/8

CAUTION: ESD REFER TO TTL DRAWING #P1025

SEQ	PROC	REF #	DESCRIPTION	QTY	REJ	ACCEPT	DATE	INSP.
20	QCI	P-1073	TANDEX QUALITY CONTROL INSPECTION. QCI TO VERIFY CAR IN SEQ. 01 IS COMPLIANT	17	Ø	17	11/2/18	QA TANDEX 5
21	PKG		USE ORIGINAL OR TANDEX PACKAGING.	17	Ø	17	11/2/18	QA TANDEX 5
22	QAR	P-1213	TANDEX QUALITY ASSURANCE REVIEW. SHIP VIA: SHIP / BILL TO: DIE DEVICES 47 WHERRY ROAD NORWICH, NR1, 1WS UNITED KINGDOM VAT GB#114 3513 56 * INCLUDES 10 ACCEPT 5 BOND PULL 2 SPARES ** 8 TRANSFERRED TO DDS-101-14-W FOR SEM	* 17			11/2/18	QA TANDEX 5

Pre Burn-In Test Results at -55°C

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       1

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -540.0MV     -1.500 V      -100.0MV
    58    3  -540.0MV     -1.500 V      -100.0MV
    58    5  -540.0MV     -1.500 V      -100.0MV
    58    9  -540.0MV     -1.500 V      -100.0MV
    58   11  -540.0MV     -1.500 V      -100.0MV
    58   13  -1.020 V     -1.500 V      -100.0MV
    58   14  -630.0MV     -1.500 V      -100.0MV
    58    2  -690.0MV     -1.500 V      -100.0MV
    58    4  -690.0MV     -1.500 V      -100.0MV
    58    6  -690.0MV     -1.500 V      -100.0MV
    58    8  -690.0MV     -1.500 V      -100.0MV
    58   10  -690.0MV     -1.500 V      -100.0MV
    58   12  -690.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.260 V     -1.500 V
    85    3  -1.060 V     -1.500 V
    91    5  -1.060 V     -1.500 V
    97    9  -960.0MV     -1.500 V
   103   11  -1.010 V     -1.500 V
   109   13  -1.210 V     -1.500 V

 ----------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ----------------------------------------------


 ---------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
---------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.830 V      2.500 V
   200    4   2.840 V      2.500 V
   206    6   2.830 V      2.500 V
   212    8   2.840 V      2.500 V
   218   10   2.830 V      2.500 V
   224   12   2.830 V      2.500 V

 -------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 -------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   348.0MV                    400.0MV
   250    4   286.0MV                    400.0MV
   256    6   292.0MV                    400.0MV
   262    8   298.0MV                    400.0MV
   268   10   304.0MV                    400.0MV
   274   12   310.0MV                    400.0MV

 ----------------------------------------------
```

```
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.10MA     -100.0MA      -20.00MA
   306    4  -48.70MA     -100.0MA      -20.00MA
   312    6  -47.80MA     -100.0MA      -20.00MA
   318    8  -46.30MA     -100.0MA      -20.00MA
   324   10  -45.20MA     -100.0MA      -20.00MA
   330   12  -45.30MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -240.0UA     -400.0UA
   417    3  -240.0UA     -400.0UA
   421    5  -240.0UA     -400.0UA
   425    9  -240.0UA     -400.0UA
   429   11  -240.0UA     -400.0UA
   433   13  -240.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.640MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   5.060MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       2

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -540.0MV     -1.500 V      -100.0MV
    58    3  -540.0MV     -1.500 V      -100.0MV
    58    5  -530.0MV     -1.500 V      -100.0MV
    58    9  -540.0MV     -1.500 V      -100.0MV
    58   11  -540.0MV     -1.500 V      -100.0MV
    58   13  -540.0MV     -1.500 V      -100.0MV
    58   14  -630.0MV     -1.500 V      -100.0MV
    58    2  -690.0MV     -1.500 V      -100.0MV
    58    4  -690.0MV     -1.500 V      -100.0MV
    58    6  -690.0MV     -1.500 V      -100.0MV
    58    8  -690.0MV     -1.500 V      -100.0MV
    58   10  -690.0MV     -1.500 V      -100.0MV
    58   12  -700.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.220 V     -1.500 V
    85    3  -960.0MV     -1.500 V
    91    5  -1.010 V     -1.500 V
    97    9  -940.0MV     -1.500 V
   103   11  -980.0MV     -1.500 V
   109   13  -1.230 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.820 V      2.500 V
   200    4   2.830 V      2.500 V
   206    6   2.820 V      2.500 V
   212    8   2.830 V      2.500 V
   218   10   2.830 V      2.500 V
   224   12   2.820 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   302.0MV                   400.0MV
   250    4   274.0MV                   400.0MV
   256    6   280.0MV                   400.0MV
   262    8   296.0MV                   400.0MV
   268   10   286.0MV                   400.0MV
   274   12   332.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.10MA     -100.0MA      -20.00MA
   306    4  -48.40MA     -100.0MA      -20.00MA
   312    6  -47.30MA     -100.0MA      -20.00MA
   318    8  -45.60MA     -100.0MA      -20.00MA
   324   10  -45.10MA     -100.0MA      -20.00MA
   330   12  -45.40MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9       0 A                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   300.0NA                  100.0UA
   381    3   100.0NA                  100.0UA
   385    5       0 A                  100.0UA
   389    9       0 A                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13       0 A                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -240.0UA     -400.0UA
   417    3  -240.0UA     -400.0UA
   421    5  -230.0UA     -400.0UA
   425    9  -230.0UA     -400.0UA
   429   11  -240.0UA     -400.0UA
   433   13  -240.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.630MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.980MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       3

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -550.0MV     -1.500 V      -100.0MV
    58    3  -550.0MV     -1.500 V      -100.0MV
    58    5  -550.0MV     -1.500 V      -100.0MV
    58    9  -550.0MV     -1.500 V      -100.0MV
    58   11  -550.0MV     -1.500 V      -100.0MV
    58   13  -550.0MV     -1.500 V      -100.0MV
    58   14  -650.0MV     -1.500 V      -100.0MV
    58    2  -700.0MV     -1.500 V      -100.0MV
    58    4  -700.0MV     -1.500 V      -100.0MV
    58    6  -710.0MV     -1.500 V      -100.0MV
    58    8  -710.0MV     -1.500 V      -100.0MV
    58   10  -710.0MV     -1.500 V      -100.0MV
    58   12  -710.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.230 V     -1.500 V
    85    3  -970.0MV     -1.500 V
    91    5  -1.020 V     -1.500 V
    97    9  -940.0MV     -1.500 V
   103   11  -    1 V     -1.500 V
   109   13  -1.020 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.810 V      2.500 V
   200    4   2.810 V      2.500 V
   206    6   2.810 V      2.500 V
   212    8   2.810 V      2.500 V
   218   10   2.810 V      2.500 V
   224   12   2.800 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   304.0MV                   400.0MV
   250    4   272.0MV                   400.0MV
   256    6   278.0MV                   400.0MV
   262    8   284.0MV                   400.0MV
   268   10   284.0MV                   400.0MV
   274   12   332.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.90MA     -100.0MA      -20.00MA
   306    4  -49.30MA     -100.0MA      -20.00MA
   312    6  -48.60MA     -100.0MA      -20.00MA
   318    8  -47.50MA     -100.0MA      -20.00MA
   324   10  -46.60MA     -100.0MA      -20.00MA
   330   12  -46.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   100.0NA                   20.00UA
   350    3       0 A                   20.00UA
   354    5       0 A                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   600.0NA                  100.0UA
   381    3   500.0NA                  100.0UA
   385    5       0 A                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -240.0UA     -400.0UA
   417    3  -250.0UA     -400.0UA
   421    5  -240.0UA     -400.0UA
   425    9  -240.0UA     -400.0UA
   429   11  -240.0UA     -400.0UA
   433   13  -240.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.690MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   5.170MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       4

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -530.0MV     -1.500 V      -100.0MV
    58    3  -530.0MV     -1.500 V      -100.0MV
    58    5  -530.0MV     -1.500 V      -100.0MV
    58    9  -530.0MV     -1.500 V      -100.0MV
    58   11  -530.0MV     -1.500 V      -100.0MV
    58   13  -530.0MV     -1.500 V      -100.0MV
    58   14  -620.0MV     -1.500 V      -100.0MV
    58    2  -680.0MV     -1.500 V      -100.0MV
    58    4  -680.0MV     -1.500 V      -100.0MV
    58    6  -680.0MV     -1.500 V      -100.0MV
    58    8  -680.0MV     -1.500 V      -100.0MV
    58   10  -680.0MV     -1.500 V      -100.0MV
    58   12  -690.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.230 V     -1.500 V
    85    3  -960.0MV     -1.500 V
    91    5  -1.010 V     -1.500 V
    97    9  -930.0MV     -1.500 V
   103   11  -990.0MV     -1.500 V
   109   13  -1.020 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.840 V      2.500 V
   200    4   2.840 V      2.500 V
   206    6   2.840 V      2.500 V
   212    8   2.840 V      2.500 V
   218   10   2.840 V      2.500 V
   224   12   2.840 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   300.0MV                   400.0MV
   250    4   268.0MV                   400.0MV
   256    6   272.0MV                   400.0MV
   262    8   276.0MV                   400.0MV
   268   10   280.0MV                   400.0MV
   274   12   308.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.60MA     -100.0MA      -20.00MA
   306    4  -49.00MA     -100.0MA      -20.00MA
   312    6  -48.20MA     -100.0MA      -20.00MA
   318    8  -47.30MA     -100.0MA      -20.00MA
   324   10  -46.20MA     -100.0MA      -20.00MA
   330   12  -45.60MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   1.200UA                   20.00UA
   350    3       0 A                   20.00UA
   354    5       0 A                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   3.200UA                  100.0UA
   381    3   4.900UA                  100.0UA
   385    5   400.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -240.0UA     -400.0UA
   417    3  -240.0UA     -400.0UA
   421    5  -240.0UA     -400.0UA
   425    9  -240.0UA     -400.0UA
   429   11  -240.0UA     -400.0UA
   433   13  -240.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.670MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   5.110MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       5

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -520.0MV     -1.500 V      -100.0MV
    58    3  -530.0MV     -1.500 V      -100.0MV
    58    5  -530.0MV     -1.500 V      -100.0MV
    58    9  -530.0MV     -1.500 V      -100.0MV
    58   11  -530.0MV     -1.500 V      -100.0MV
    58   13  -530.0MV     -1.500 V      -100.0MV
    58   14  -610.0MV     -1.500 V      -100.0MV
    58    2  -680.0MV     -1.500 V      -100.0MV
    58    4  -680.0MV     -1.500 V      -100.0MV
    58    6  -680.0MV     -1.500 V      -100.0MV
    58    8  -680.0MV     -1.500 V      -100.0MV
    58   10  -680.0MV     -1.500 V      -100.0MV
    58   12  -680.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.300 V     -1.500 V
    85    3  -960.0MV     -1.500 V
    91    5  -1.020 V     -1.500 V
    97    9  -930.0MV     -1.500 V
   103   11  -    1 V     -1.500 V
   109   13  -1.030 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.850 V      2.500 V
   200    4   2.850 V      2.500 V
   206    6   2.850 V      2.500 V
   212    8   2.850 V      2.500 V
   218   10   2.850 V      2.500 V
   224   12   2.840 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   302.0MV                   400.0MV
   250    4   270.0MV                   400.0MV
   256    6   274.0MV                   400.0MV
   262    8   280.0MV                   400.0MV
   268   10   286.0MV                   400.0MV
   274   12   332.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.30MA     -100.0MA      -20.00MA
   306    4  -48.70MA     -100.0MA      -20.00MA
   312    6  -47.90MA     -100.0MA      -20.00MA
   318    8  -47.00MA     -100.0MA      -20.00MA
   324   10  -45.80MA     -100.0MA      -20.00MA
   330   12  -45.20MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   1.100UA                   20.00UA
   350    3   6.100UA                   20.00UA
   354    5       0 A                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   3.200UA                  100.0UA
   381    3   22.90UA                  100.0UA
   385    5   300.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -240.0UA     -400.0UA
   417    3  -240.0UA     -400.0UA
   421    5  -240.0UA     -400.0UA
   425    9  -240.0UA     -400.0UA
   429   11  -240.0UA     -400.0UA
   433   13  -240.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.660MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   5.060MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       6

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -530.0MV     -1.500 V      -100.0MV
    58    3  -530.0MV     -1.500 V      -100.0MV
    58    5  -530.0MV     -1.500 V      -100.0MV
    58    9  -530.0MV     -1.500 V      -100.0MV
    58   11  -530.0MV     -1.500 V      -100.0MV
    58   13  -530.0MV     -1.500 V      -100.0MV
    58   14  -610.0MV     -1.500 V      -100.0MV
    58    2  -680.0MV     -1.500 V      -100.0MV
    58    4  -680.0MV     -1.500 V      -100.0MV
    58    6  -680.0MV     -1.500 V      -100.0MV
    58    8  -680.0MV     -1.500 V      -100.0MV
    58   10  -680.0MV     -1.500 V      -100.0MV
    58   12  -680.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.220 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -1.010 V     -1.500 V
    97    9  -930.0MV     -1.500 V
   103   11  -990.0MV     -1.500 V
   109   13  -1.040 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.850 V      2.500 V
   200    4   2.850 V      2.500 V
   206    6   2.850 V      2.500 V
   212    8   2.850 V      2.500 V
   218   10   2.850 V      2.500 V
   224   12   2.850 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   300.0MV                   400.0MV
   250    4   268.0MV                   400.0MV
   256    6   272.0MV                   400.0MV
   262    8   284.0MV                   400.0MV
   268   10   282.0MV                   400.0MV
   274   12   290.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.10MA     -100.0MA      -20.00MA
   306    4  -48.50MA     -100.0MA      -20.00MA
   312    6  -47.80MA     -100.0MA      -20.00MA
   318    8  -46.00MA     -100.0MA      -20.00MA
   324   10  -45.60MA     -100.0MA      -20.00MA
   330   12  -44.20MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   1.100UA                   20.00UA
   350    3   7.600UA                   20.00UA
   354    5   100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   3.000UA                  100.0UA
   381    3   27.20UA                  100.0UA
   385    5   1.900UA                  100.0UA
   389    9       0 A                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -230.0UA     -400.0UA
   417    3  -240.0UA     -400.0UA
   421    5  -230.0UA     -400.0UA
   425    9  -230.0UA     -400.0UA
   429   11  -230.0UA     -400.0UA
   433   13  -230.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.630MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.950MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       7

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -520.0MV     -1.500 V      -100.0MV
    58    3  -520.0MV     -1.500 V      -100.0MV
    58    5  -520.0MV     -1.500 V      -100.0MV
    58    9  -520.0MV     -1.500 V      -100.0MV
    58   11  -530.0MV     -1.500 V      -100.0MV
    58   13  -530.0MV     -1.500 V      -100.0MV
    58   14  -610.0MV     -1.500 V      -100.0MV
    58    2  -670.0MV     -1.500 V      -100.0MV
    58    4  -670.0MV     -1.500 V      -100.0MV
    58    6  -670.0MV     -1.500 V      -100.0MV
    58    8  -680.0MV     -1.500 V      -100.0MV
    58   10  -680.0MV     -1.500 V      -100.0MV
    58   12  -680.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.210 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -1.010 V     -1.500 V
    97    9  -930.0MV     -1.500 V
   103   11  -990.0MV     -1.500 V
   109   13  -1.200 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.850 V      2.500 V
   200    4   2.850 V      2.500 V
   206    6   2.850 V      2.500 V
   212    8   2.850 V      2.500 V
   218   10   2.850 V      2.500 V
   224   12   2.840 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   296.0MV                   400.0MV
   250    4   266.0MV                   400.0MV
   256    6   268.0MV                   400.0MV
   262    8   284.0MV                   400.0MV
   268   10   280.0MV                   400.0MV
   274   12   292.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.50MA     -100.0MA      -20.00MA
   306    4  -48.70MA     -100.0MA      -20.00MA
   312    6  -48.00MA     -100.0MA      -20.00MA
   318    8  -46.20MA     -100.0MA      -20.00MA
   324   10  -45.70MA     -100.0MA      -20.00MA
   330   12  -45.30MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   1.000UA                   20.00UA
   350    3   7.700UA                   20.00UA
   354    5       0 A                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11       0 A                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   2.900UA                  100.0UA
   381    3   25.60UA                  100.0UA
   385    5   2.700UA                  100.0UA
   389    9       0 A                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13       0 A                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -240.0UA     -400.0UA
   417    3  -240.0UA     -400.0UA
   421    5  -230.0UA     -400.0UA
   425    9  -230.0UA     -400.0UA
   429   11  -240.0UA     -400.0UA
   433   13  -240.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.650MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   5.020MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       8

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -520.0MV     -1.500 V      -100.0MV
    58    3  -530.0MV     -1.500 V      -100.0MV
    58    5  -530.0MV     -1.500 V      -100.0MV
    58    9  -530.0MV     -1.500 V      -100.0MV
    58   11  -530.0MV     -1.500 V      -100.0MV
    58   13  -530.0MV     -1.500 V      -100.0MV
    58   14  -610.0MV     -1.500 V      -100.0MV
    58    2  -680.0MV     -1.500 V      -100.0MV
    58    4  -680.0MV     -1.500 V      -100.0MV
    58    6  -680.0MV     -1.500 V      -100.0MV
    58    8  -680.0MV     -1.500 V      -100.0MV
    58   10  -680.0MV     -1.500 V      -100.0MV
    58   12  -680.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.220 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -1.010 V     -1.500 V
    97    9  -930.0MV     -1.500 V
   103   11  -980.0MV     -1.500 V
   109   13  -1.080 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.850 V      2.500 V
   200    4   2.850 V      2.500 V
   206    6   2.850 V      2.500 V
   212    8   2.850 V      2.500 V
   218   10   2.850 V      2.500 V
   224   12   2.850 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   296.0MV                   400.0MV
   250    4   266.0MV                   400.0MV
   256    6   270.0MV                   400.0MV
   262    8   280.0MV                   400.0MV
   268   10   282.0MV                   400.0MV
   274   12   286.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.20MA     -100.0MA      -20.00MA
   306    4  -48.40MA     -100.0MA      -20.00MA
   312    6  -47.70MA     -100.0MA      -20.00MA
   318    8  -46.50MA     -100.0MA      -20.00MA
   324   10  -45.10MA     -100.0MA      -20.00MA
   330   12  -45.20MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   1.000UA                   20.00UA
   350    3   8.700UA                   20.00UA
   354    5   200.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   3.000UA                  100.0UA
   381    3   29.50UA                  100.0UA
   385    5   1.700UA                  100.0UA
   389    9       0 A                  100.0UA
   393   11       0 A                  100.0UA
   397   13   300.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -230.0UA     -400.0UA
   417    3  -240.0UA     -400.0UA
   421    5  -230.0UA     -400.0UA
   425    9  -230.0UA     -400.0UA
   429   11  -230.0UA     -400.0UA
   433   13  -230.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.630MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.940MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       9

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -520.0MV     -1.500 V      -100.0MV
    58    3  -530.0MV     -1.500 V      -100.0MV
    58    5  -530.0MV     -1.500 V      -100.0MV
    58    9  -530.0MV     -1.500 V      -100.0MV
    58   11  -520.0MV     -1.500 V      -100.0MV
    58   13  -530.0MV     -1.500 V      -100.0MV
    58   14  -610.0MV     -1.500 V      -100.0MV
    58    2  -680.0MV     -1.500 V      -100.0MV
    58    4  -680.0MV     -1.500 V      -100.0MV
    58    6  -680.0MV     -1.500 V      -100.0MV
    58    8  -680.0MV     -1.500 V      -100.0MV
    58   10  -680.0MV     -1.500 V      -100.0MV
    58   12  -680.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.210 V     -1.500 V
    85    3  -960.0MV     -1.500 V
    91    5  -1.020 V     -1.500 V
    97    9  -930.0MV     -1.500 V
   103   11  -990.0MV     -1.500 V
   109   13  -1.090 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.850 V      2.500 V
   200    4   2.850 V      2.500 V
   206    6   2.850 V      2.500 V
   212    8   2.850 V      2.500 V
   218   10   2.840 V      2.500 V
   224   12   2.840 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   298.0MV                   400.0MV
   250    4   268.0MV                   400.0MV
   256    6   270.0MV                   400.0MV
   262    8   278.0MV                   400.0MV
   268   10   284.0MV                   400.0MV
   274   12   288.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.30MA     -100.0MA      -20.00MA
   306    4  -48.40MA     -100.0MA      -20.00MA
   312    6  -47.70MA     -100.0MA      -20.00MA
   318    8  -47.00MA     -100.0MA      -20.00MA
   324   10  -45.10MA     -100.0MA      -20.00MA
   330   12  -45.40MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   500.0NA                   20.00UA
   350    3   2.000UA                   20.00UA
   354    5   300.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13   100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   1.500UA                  100.0UA
   381    3   7.600UA                  100.0UA
   385    5   1.500UA                  100.0UA
   389    9   100.0NA                  100.0UA
   393   11       0 A                  100.0UA
   397   13   3.700UA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -230.0UA     -400.0UA
   417    3  -240.0UA     -400.0UA
   421    5  -230.0UA     -400.0UA
   425    9  -230.0UA     -400.0UA
   429   11  -230.0UA     -400.0UA
   433   13  -240.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.620MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.970MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N      10

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -530.0MV     -1.500 V      -100.0MV
    58    3  -530.0MV     -1.500 V      -100.0MV
    58    5  -530.0MV     -1.500 V      -100.0MV
    58    9  -530.0MV     -1.500 V      -100.0MV
    58   11  -530.0MV     -1.500 V      -100.0MV
    58   13  -530.0MV     -1.500 V      -100.0MV
    58   14  -620.0MV     -1.500 V      -100.0MV
    58    2  -680.0MV     -1.500 V      -100.0MV
    58    4  -680.0MV     -1.500 V      -100.0MV
    58    6  -680.0MV     -1.500 V      -100.0MV
    58    8  -690.0MV     -1.500 V      -100.0MV
    58   10  -680.0MV     -1.500 V      -100.0MV
    58   12  -680.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.230 V     -1.500 V
    85    3  -970.0MV     -1.500 V
    91    5  -1.030 V     -1.500 V
    97    9  -940.0MV     -1.500 V
   103   11  -    1 V     -1.500 V
   109   13  -1.100 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.840 V      2.500 V
   200    4   2.840 V      2.500 V
   206    6   2.840 V      2.500 V
   212    8   2.840 V      2.500 V
   218   10   2.840 V      2.500 V
   224   12   2.840 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   300.0MV                   400.0MV
   250    4   272.0MV                   400.0MV
   256    6   276.0MV                   400.0MV
   262    8   280.0MV                   400.0MV
   268   10   290.0MV                   400.0MV
   274   12   292.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.60MA     -100.0MA      -20.00MA
   306    4  -48.40MA     -100.0MA      -20.00MA
   312    6  -48.00MA     -100.0MA      -20.00MA
   318    8  -47.30MA     -100.0MA      -20.00MA
   324   10  -45.20MA     -100.0MA      -20.00MA
   330   12  -45.60MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   700.0NA                   20.00UA
   350    3   500.0NA                   20.00UA
   354    5   700.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13   300.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   3.000UA                  100.0UA
   381    3   2.300UA                  100.0UA
   385    5   2.500UA                  100.0UA
   389    9   100.0NA                  100.0UA
   393   11   100.0NA                  100.0UA
   397   13   3.000UA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -240.0UA     -400.0UA
   417    3  -240.0UA     -400.0UA
   421    5  -240.0UA     -400.0UA
   425    9  -240.0UA     -400.0UA
   429   11  -240.0UA     -400.0UA
   433   13  -240.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.650MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   5.050MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N      11

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -530.0MV     -1.500 V      -100.0MV
    58    3  -530.0MV     -1.500 V      -100.0MV
    58    5  -530.0MV     -1.500 V      -100.0MV
    58    9  -530.0MV     -1.500 V      -100.0MV
    58   11  -530.0MV     -1.500 V      -100.0MV
    58   13  -530.0MV     -1.500 V      -100.0MV
    58   14  -610.0MV     -1.500 V      -100.0MV
    58    2  -680.0MV     -1.500 V      -100.0MV
    58    4  -680.0MV     -1.500 V      -100.0MV
    58    6  -680.0MV     -1.500 V      -100.0MV
    58    8  -680.0MV     -1.500 V      -100.0MV
    58   10  -680.0MV     -1.500 V      -100.0MV
    58   12  -680.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.220 V     -1.500 V
    85    3  -960.0MV     -1.500 V
    91    5  -1.020 V     -1.500 V
    97    9  -930.0MV     -1.500 V
   103   11  -980.0MV     -1.500 V
   109   13  -1.100 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.840 V      2.500 V
   200    4   2.840 V      2.500 V
   206    6   2.840 V      2.500 V
   212    8   2.840 V      2.500 V
   218   10   2.840 V      2.500 V
   224   12   2.840 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   296.0MV                   400.0MV
   250    4   268.0MV                   400.0MV
   256    6   270.0MV                   400.0MV
   262    8   306.0MV                   400.0MV
   268   10   280.0MV                   400.0MV
   274   12   290.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.50MA     -100.0MA      -20.00MA
   306    4  -49.00MA     -100.0MA      -20.00MA
   312    6  -48.20MA     -100.0MA      -20.00MA
   318    8  -46.00MA     -100.0MA      -20.00MA
   324   10  -45.90MA     -100.0MA      -20.00MA
   330   12  -45.30MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   200.0NA                   20.00UA
   350    3   100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13   400.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   1.200UA                  100.0UA
   381    3   1.400UA                  100.0UA
   385    5       0 A                  100.0UA
   389    9   200.0NA                  100.0UA
   393   11       0 A                  100.0UA
   397   13   2.800UA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -240.0UA     -400.0UA
   417    3  -240.0UA     -400.0UA
   421    5  -240.0UA     -400.0UA
   425    9  -240.0UA     -400.0UA
   429   11  -240.0UA     -400.0UA
   433   13  -240.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.670MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   5.130MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N      12

DDS-101-14-A PN 54LS04 TEST SEQ12 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -520.0MV     -1.500 V      -100.0MV
    58    3  -520.0MV     -1.500 V      -100.0MV
    58    5  -520.0MV     -1.500 V      -100.0MV
    58    9  -520.0MV     -1.500 V      -100.0MV
    58   11  -520.0MV     -1.500 V      -100.0MV
    58   13  -520.0MV     -1.500 V      -100.0MV
    58   14  -600.0MV     -1.500 V      -100.0MV
    58    2  -670.0MV     -1.500 V      -100.0MV
    58    4  -670.0MV     -1.500 V      -100.0MV
    58    6  -670.0MV     -1.500 V      -100.0MV
    58    8  -670.0MV     -1.500 V      -100.0MV
    58   10  -670.0MV     -1.500 V      -100.0MV
    58   12  -670.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.220 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -1.020 V     -1.500 V
    97    9  -920.0MV     -1.500 V
   103   11  -980.0MV     -1.500 V
   109   13  -1.110 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.860 V      2.500 V
   200    4   2.860 V      2.500 V
   206    6   2.860 V      2.500 V
   212    8   2.860 V      2.500 V
   218   10   2.860 V      2.500 V
   224   12   2.860 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   294.0MV                   400.0MV
   250    4   266.0MV                   400.0MV
   256    6   270.0MV                   400.0MV
   262    8   274.0MV                   400.0MV
   268   10   280.0MV                   400.0MV
   274   12   288.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.10MA     -100.0MA      -20.00MA
   306    4  -48.10MA     -100.0MA      -20.00MA
   312    6  -47.50MA     -100.0MA      -20.00MA
   318    8  -46.70MA     -100.0MA      -20.00MA
   324   10  -44.80MA     -100.0MA      -20.00MA
   330   12  -45.00MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1   100.0NA                   20.00UA
   350    3       0 A                   20.00UA
   354    5       0 A                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13   500.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1   800.0NA                  100.0UA
   381    3   800.0NA                  100.0UA
   385    5   100.0NA                  100.0UA
   389    9   200.0NA                  100.0UA
   393   11   100.0NA                  100.0UA
   397   13   2.700UA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -230.0UA     -400.0UA
   417    3  -230.0UA     -400.0UA
   421    5  -230.0UA     -400.0UA
   425    9  -230.0UA     -400.0UA
   429   11  -230.0UA     -400.0UA
   433   13  -230.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.600MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.920MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

Pre Burn-In Test Results at 25°C

STAT1 08/01/11 08:19
TEST PROGRAM 4LS04 S/N 1

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C

CONTINUITY TEST

INST #	PIN	MEASURED	LT	GT
58	1	-480.0MV	-1.500 V	-100.0MV
58	3	-480.0MV	-1.500 V	-100.0MV
58	5	-480.0MV	-1.500 V	-100.0MV
58	9	-470.0MV	-1.500 V	-100.0MV
58	11	-480.0MV	-1.500 V	-100.0MV
58	13	-480.0MV	-1.500 V	-100.0MV
58	14	-530.0MV	-1.500 V	-100.0MV
58	2	-600.0MV	-1.500 V	-100.0MV
58	4	-600.0MV	-1.500 V	-100.0MV
58	6	-600.0MV	-1.500 V	-100.0MV
58	8	-600.0MV	-1.500 V	-100.0MV
58	10	-600.0MV	-1.500 V	-100.0MV
58	12	-600.0MV	-1.500 V	-100.0MV

VIK TEST -1.5V MINIIN=-18MAVCC=4.5V

INST #	PIN	MEASURED	LT	GT
79	1	-1.210 V	-1.500 V	
85	3	-940.0MV	-1.500 V	
91	5	-950.0MV	-1.500 V	
97	9	-890.0MV	-1.500 V	
103	11	-960.0MV	-1.500 V	
109	13	-930.0MV	-1.500 V	

FUNCTIONAL TEST
VCC= 4.500
VIH= 2 VIL= 700.0E-03

VOH TEST
VCC= 4.500
VOH LIMIT 2.500

INST #	PIN	MEASURED	LT	GT
194	2	3 V	2.500 V	
200	4	3 V	2.500 V	
206	6	3 V	2.500 V	
212	8	3 V	2.500 V	
218	10	3 V	2.500 V	
224	12	3 V	2.500 V	

VOL TEST
VCC= 4.500
VOL LIMIT 400.0E-03

INST #	PIN	MEASURED	LT	GT
244	2	288.0MV		400.0MV
250	4	254.0MV		400.0MV
256	6	256.0MV		400.0MV
262	8	276.0MV		400.0MV
268	10	268.0MV		400.0MV
274	12	286.0MV		400.0MV

```
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -41.80MA     -100.0MA      -20.00MA
   306    4  -45.70MA     -100.0MA      -20.00MA
   312    6  -45.30MA     -100.0MA      -20.00MA
   318    8  -42.20MA     -100.0MA      -20.00MA
   324   10  -43.10MA     -100.0MA      -20.00MA
   330   12  -43.20MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.420MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.490MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       2

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.120 V     -1.500 V
    85    3  -940.0MV     -1.500 V
    91    5  -950.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -970.0MV     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   286.0MV                   400.0MV
   250    4   256.0MV                   400.0MV
   256    6   256.0MV                   400.0MV
   262    8   316.0MV                   400.0MV
   268   10   272.0MV                   400.0MV
   274   12   282.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.00MA     -100.0MA      -20.00MA
   306    4  -45.70MA     -100.0MA      -20.00MA
   312    6  -45.40MA     -100.0MA      -20.00MA
   318    8  -41.20MA     -100.0MA      -20.00MA
   324   10  -43.40MA     -100.0MA      -20.00MA
   330   12  -43.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3       0 A                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.430MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.470MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       3

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.120 V     -1.500 V
    85    3  -940.0MV     -1.500 V
    91    5  -950.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -970.0MV     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ---------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ---------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   284.0MV                   400.0MV
   250    4   252.0MV                   400.0MV
   256    6   254.0MV                   400.0MV
   262    8   320.0MV                   400.0MV
   268   10   270.0MV                   400.0MV
   274   12   276.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.30MA     -100.0MA      -20.00MA
   306    4  -46.10MA     -100.0MA      -20.00MA
   312    6  -45.80MA     -100.0MA      -20.00MA
   318    8  -42.50MA     -100.0MA      -20.00MA
   324   10  -43.60MA     -100.0MA      -20.00MA
   330   12  -43.60MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.450MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.540MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       4

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.130 V     -1.500 V
    85    3  -940.0MV     -1.500 V
    91    5  -950.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -970.0MV     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   284.0MV                   400.0MV
   250    4   254.0MV                   400.0MV
   256    6   252.0MV                   400.0MV
   262    8   294.0MV                   400.0MV
   268   10   270.0MV                   400.0MV
   274   12   274.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.60MA     -100.0MA      -20.00MA
   306    4  -46.30MA     -100.0MA      -20.00MA
   312    6  -45.80MA     -100.0MA      -20.00MA
   318    8  -42.30MA     -100.0MA      -20.00MA
   324   10  -43.70MA     -100.0MA      -20.00MA
   330   12  -43.90MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.460MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.570MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       5

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.130 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -950.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -970.0MV     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   284.0MV                   400.0MV
   250    4   256.0MV                   400.0MV
   256    6   254.0MV                   400.0MV
   262    8   268.0MV                   400.0MV
   268   10   270.0MV                   400.0MV
   274   12   276.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.50MA     -100.0MA      -20.00MA
   306    4  -46.00MA     -100.0MA      -20.00MA
   312    6  -45.60MA     -100.0MA      -20.00MA
   318    8  -44.10MA     -100.0MA      -20.00MA
   324   10  -43.30MA     -100.0MA      -20.00MA
   330   12  -43.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5       0 A                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.440MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.520MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       6

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -490.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -490.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -490.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.140 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -950.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -970.0MV     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.980 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   282.0MV                   400.0MV
   250    4   256.0MV                   400.0MV
   256    6   254.0MV                   400.0MV
   262    8   266.0MV                   400.0MV
   268   10   272.0MV                   400.0MV
   274   12   276.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.50MA     -100.0MA      -20.00MA
   306    4  -45.80MA     -100.0MA      -20.00MA
   312    6  -45.50MA     -100.0MA      -20.00MA
   318    8  -44.10MA     -100.0MA      -20.00MA
   324   10  -43.00MA     -100.0MA      -20.00MA
   330   12  -43.40MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9       0 A                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.410MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.440MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       7

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.160 V     -1.500 V
    85    3  -940.0MV     -1.500 V
    91    5  -950.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -970.0MV     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4       3 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   278.0MV                   400.0MV
   250    4   252.0MV                   400.0MV
   256    6   254.0MV                   400.0MV
   262    8   272.0MV                   400.0MV
   268   10   270.0MV                   400.0MV
   274   12   274.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -43.00MA     -100.0MA      -20.00MA
   306    4  -46.00MA     -100.0MA      -20.00MA
   312    6  -45.60MA     -100.0MA      -20.00MA
   318    8  -43.50MA     -100.0MA      -20.00MA
   324   10  -43.40MA     -100.0MA      -20.00MA
   330   12  -43.60MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5       0 A                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.420MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.470MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       8

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -490.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.160 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -950.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -980.0MV     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   280.0MV                   400.0MV
   250    4   256.0MV                   400.0MV
   256    6   254.0MV                   400.0MV
   262    8   272.0MV                   400.0MV
   268   10   272.0MV                   400.0MV
   274   12   290.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.90MA     -100.0MA      -20.00MA
   306    4  -45.80MA     -100.0MA      -20.00MA
   312    6  -45.50MA     -100.0MA      -20.00MA
   318    8  -43.60MA     -100.0MA      -20.00MA
   324   10  -43.10MA     -100.0MA      -20.00MA
   330   12  -43.40MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.410MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.440MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       9

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -600.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -660.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.180 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -940.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -980.0MV     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4       3 V      2.500 V
   206    6       3 V      2.500 V
   212    8       3 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   278.0MV                   400.0MV
   250    4   254.0MV                   400.0MV
   256    6   256.0MV                   400.0MV
   262    8   280.0MV                   400.0MV
   268   10   272.0MV                   400.0MV
   274   12   296.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.60MA     -100.0MA      -20.00MA
   306    4  -45.50MA     -100.0MA      -20.00MA
   312    6  -45.20MA     -100.0MA      -20.00MA
   318    8  -43.10MA     -100.0MA      -20.00MA
   324   10  -43.10MA     -100.0MA      -20.00MA
   330   12  -43.20MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1       0 A                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.410MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.420MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N      10

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -600.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -600.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.190 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -950.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -990.0MV     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4       3 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   278.0MV                   400.0MV
   250    4   252.0MV                   400.0MV
   256    6   256.0MV                   400.0MV
   262    8   348.0MV                   400.0MV
   268   10   270.0MV                   400.0MV
   274   12   294.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -43.00MA     -100.0MA      -20.00MA
   306    4  -45.60MA     -100.0MA      -20.00MA
   312    6  -45.60MA     -100.0MA      -20.00MA
   318    8  -40.20MA     -100.0MA      -20.00MA
   324   10  -42.80MA     -100.0MA      -20.00MA
   330   12  -43.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.430MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.500MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N      11

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -600.0MV     -1.500 V      -100.0MV
    58    4  -600.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -720.0MV     -1.500 V      -100.0MV
    58   10  -600.0MV     -1.500 V      -100.0MV
    58   12  -600.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.200 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -940.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -990.0MV     -1.500 V
   109   13  -920.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2       3 V      2.500 V
   200    4       3 V      2.500 V
   206    6       3 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12       3 V      2.500 V

 ---------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ---------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   280.0MV                   400.0MV
   250    4   254.0MV                   400.0MV
   256    6   252.0MV                   400.0MV
   262    8   356.0MV                   400.0MV
   268   10   268.0MV                   400.0MV
   274   12   296.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.70MA     -100.0MA      -20.00MA
   306    4  -46.10MA     -100.0MA      -20.00MA
   312    6  -45.60MA     -100.0MA      -20.00MA
   318    8  -41.60MA     -100.0MA      -20.00MA
   324   10  -43.40MA     -100.0MA      -20.00MA
   330   12  -43.40MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.440MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.540MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N      12

DDS-101-14-A PN 54LS04 TEST SEQ12 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -600.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -600.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.240 V     -1.500 V
    85    3  -950.0MV     -1.500 V
    91    5  -940.0MV     -1.500 V
    97    9  -890.0MV     -1.500 V
   103   11  -1.010 V     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4       3 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8       3 V      2.500 V
   218   10       3 V      2.500 V
   224   12       3 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   282.0MV                   400.0MV
   250    4   256.0MV                   400.0MV
   256    6   254.0MV                   400.0MV
   262    8   278.0MV                   400.0MV
   268   10   270.0MV                   400.0MV
   274   12   300.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.60MA     -100.0MA      -20.00MA
   306    4  -45.40MA     -100.0MA      -20.00MA
   312    6  -45.10MA     -100.0MA      -20.00MA
   318    8  -42.80MA     -100.0MA      -20.00MA
   324   10  -42.90MA     -100.0MA      -20.00MA
   330   12  -43.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.400MA                   2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.390MA                   6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

MIL-PRF-38534 CLASS K DATAPACK

Pre Burn-In Test Results at +125°C

STAT1 08/01/11 08:19
TEST PROGRAM 4LS04 S/N 1

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C

CONTINUITY TEST

INST #	PIN	MEASURED	LT	GT
58	1	-430.0MV	-1.500 V	-100.0MV
58	3	-430.0MV	-1.500 V	-100.0MV
58	5	-430.0MV	-1.500 V	-100.0MV
58	9	-420.0MV	-1.500 V	-100.0MV
58	11	-430.0MV	-1.500 V	-100.0MV
58	13	-420.0MV	-1.500 V	-100.0MV
58	14	-450.0MV	-1.500 V	-100.0MV
58	2	-520.0MV	-1.500 V	-100.0MV
58	4	-520.0MV	-1.500 V	-100.0MV
58	6	-520.0MV	-1.500 V	-100.0MV
58	8	-520.0MV	-1.500 V	-100.0MV
58	10	-520.0MV	-1.500 V	-100.0MV
58	12	-520.0MV	-1.500 V	-100.0MV

VIK TEST -1.5V MINIIN=-18MAVCC=4.5V

INST #	PIN	MEASURED	LT	GT
79	1	-1.320 V	-1.500 V	
85	3	-870.0MV	-1.500 V	
91	5	-930.0MV	-1.500 V	
97	9	-840.0MV	-1.500 V	
103	11	-900.0MV	-1.500 V	
109	13	-1.030 V	-1.500 V	

FUNCTIONAL TEST
VCC= 4.500
VIH= 2 VIL= 700.0E-03

VOH TEST
VCC= 4.500
VOH LIMIT 2.500

INST #	PIN	MEASURED	LT	GT
194	2	3.120 V	2.500 V	
200	4	3.130 V	2.500 V	
206	6	3.130 V	2.500 V	
212	8	3.120 V	2.500 V	
218	10	3.100 V	2.500 V	
224	12	3.130 V	2.500 V	

VOL TEST
VCC= 4.500
VOL LIMIT 400.0E-03

INST #	PIN	MEASURED	LT	GT
244	2	276.0MV		400.0MV
250	4	242.0MV		400.0MV
256	6	244.0MV		400.0MV
262	8	256.0MV		400.0MV
268	10	256.0MV		400.0MV
274	12	266.0MV		400.0MV

```
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ----------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -39.40MA     -100.0MA      -20.00MA
   306    4  -42.50MA     -100.0MA      -20.00MA
   312    6  -41.80MA     -100.0MA      -20.00MA
   318    8  -40.40MA     -100.0MA      -20.00MA
   324   10  -39.50MA     -100.0MA      -20.00MA
   330   12  -39.80MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3       0 A                  100.0UA
   385    5       0 A                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -180.0UA     -400.0UA
   417    3  -170.0UA     -400.0UA
   421    5  -170.0UA     -400.0UA
   425    9  -170.0UA     -400.0UA
   429   11  -180.0UA     -400.0UA
   433   13  -180.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.220MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   3.910MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       2

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -420.0MV     -1.500 V      -100.0MV
    58    3  -420.0MV     -1.500 V      -100.0MV
    58    5  -420.0MV     -1.500 V      -100.0MV
    58    9  -420.0MV     -1.500 V      -100.0MV
    58   11  -420.0MV     -1.500 V      -100.0MV
    58   13  -420.0MV     -1.500 V      -100.0MV
    58   14  -440.0MV     -1.500 V      -100.0MV
    58    2  -520.0MV     -1.500 V      -100.0MV
    58    4  -510.0MV     -1.500 V      -100.0MV
    58    6  -510.0MV     -1.500 V      -100.0MV
    58    8  -520.0MV     -1.500 V      -100.0MV
    58   10  -510.0MV     -1.500 V      -100.0MV
    58   12  -510.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.300 V     -1.500 V
    85    3  -1.010 V     -1.500 V
    91    5  -1.090 V     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -1.020 V     -1.500 V
   109   13  -1.280 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.120 V      2.500 V
   200    4   3.130 V      2.500 V
   206    6   3.130 V      2.500 V
   212    8   3.130 V      2.500 V
   218   10   3.100 V      2.500 V
   224   12   3.130 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   310.0MV                   400.0MV
   250    4   268.0MV                   400.0MV
   256    6   268.0MV                   400.0MV
   262    8   282.0MV                   400.0MV
   268   10   284.0MV                   400.0MV
   274   12   288.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -39.10MA     -100.0MA      -20.00MA
   306    4  -42.20MA     -100.0MA      -20.00MA
   312    6  -41.60MA     -100.0MA      -20.00MA
   318    8  -40.70MA     -100.0MA      -20.00MA
   324   10  -39.20MA     -100.0MA      -20.00MA
   330   12  -39.80MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9       0 A                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13       0 A                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -180.0UA     -400.0UA
   417    3  -180.0UA     -400.0UA
   421    5  -170.0UA     -400.0UA
   425    9  -170.0UA     -400.0UA
   429   11  -180.0UA     -400.0UA
   433   13  -180.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.210MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   3.860MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       3

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -440.0MV     -1.500 V      -100.0MV
    58    3  -440.0MV     -1.500 V      -100.0MV
    58    5  -440.0MV     -1.500 V      -100.0MV
    58    9  -440.0MV     -1.500 V      -100.0MV
    58   11  -440.0MV     -1.500 V      -100.0MV
    58   13  -440.0MV     -1.500 V      -100.0MV
    58   14  -470.0MV     -1.500 V      -100.0MV
    58    2  -540.0MV     -1.500 V      -100.0MV
    58    4  -540.0MV     -1.500 V      -100.0MV
    58    6  -540.0MV     -1.500 V      -100.0MV
    58    8  -540.0MV     -1.500 V      -100.0MV
    58   10  -540.0MV     -1.500 V      -100.0MV
    58   12  -540.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.200 V     -1.500 V
    85    3  -940.0MV     -1.500 V
    91    5  -1.010 V     -1.500 V
    97    9  -900.0MV     -1.500 V
   103   11  -950.0MV     -1.500 V
   109   13  -960.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.110 V      2.500 V
   200    4   3.110 V      2.500 V
   206    6   3.110 V      2.500 V
   212    8   3.110 V      2.500 V
   218   10   3.100 V      2.500 V
   224   12   3.120 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   296.0MV                   400.0MV
   250    4   258.0MV                   400.0MV
   256    6   258.0MV                   400.0MV
   262    8   266.0MV                   400.0MV
   268   10   270.0MV                   400.0MV
   274   12   280.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -39.60MA     -100.0MA      -20.00MA
   306    4  -43.40MA     -100.0MA      -20.00MA
   312    6  -42.70MA     -100.0MA      -20.00MA
   318    8  -42.10MA     -100.0MA      -20.00MA
   324   10  -39.90MA     -100.0MA      -20.00MA
   330   12  -40.40MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13       0 A                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1       0 A                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5       0 A                  100.0UA
   389    9       0 A                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -180.0UA     -400.0UA
   417    3  -180.0UA     -400.0UA
   421    5  -180.0UA     -400.0UA
   425    9  -180.0UA     -400.0UA
   429   11  -180.0UA     -400.0UA
   433   13  -180.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.260MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.030MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       4

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -410.0MV     -1.500 V      -100.0MV
    58    3  -410.0MV     -1.500 V      -100.0MV
    58    5  -410.0MV     -1.500 V      -100.0MV
    58    9  -410.0MV     -1.500 V      -100.0MV
    58   11  -410.0MV     -1.500 V      -100.0MV
    58   13  -410.0MV     -1.500 V      -100.0MV
    58   14  -430.0MV     -1.500 V      -100.0MV
    58    2  -510.0MV     -1.500 V      -100.0MV
    58    4  -510.0MV     -1.500 V      -100.0MV
    58    6  -510.0MV     -1.500 V      -100.0MV
    58    8  -510.0MV     -1.500 V      -100.0MV
    58   10  -510.0MV     -1.500 V      -100.0MV
    58   12  -510.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.200 V     -1.500 V
    85    3  -930.0MV     -1.500 V
    91    5  -    1 V     -1.500 V
    97    9  -900.0MV     -1.500 V
   103   11  -950.0MV     -1.500 V
   109   13  -960.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.130 V      2.500 V
   200    4   3.120 V      2.500 V
   206    6   3.130 V      2.500 V
   212    8   3.130 V      2.500 V
   218   10   3.100 V      2.500 V
   224   12   3.130 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   298.0MV                   400.0MV
   250    4   272.0MV                   400.0MV
   256    6   272.0MV                   400.0MV
   262    8   276.0MV                   400.0MV
   268   10   322.0MV                   400.0MV
   274   12   294.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -39.90MA     -100.0MA      -20.00MA
   306    4  -42.70MA     -100.0MA      -20.00MA
   312    6  -42.00MA     -100.0MA      -20.00MA
   318    8  -41.50MA     -100.0MA      -20.00MA
   324   10  -40.50MA     -100.0MA      -20.00MA
   330   12  -40.00MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1       0 A                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11       0 A                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -180.0UA     -400.0UA
   417    3  -180.0UA     -400.0UA
   421    5  -180.0UA     -400.0UA
   425    9  -180.0UA     -400.0UA
   429   11  -180.0UA     -400.0UA
   433   13  -180.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.240MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   3.960MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       5

DDS-101-14-A PN 54LS04 TEST SEQ2 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -390.0MV     -1.500 V      -100.0MV
    58    3  -390.0MV     -1.500 V      -100.0MV
    58    5  -390.0MV     -1.500 V      -100.0MV
    58    9  -390.0MV     -1.500 V      -100.0MV
    58   11  -390.0MV     -1.500 V      -100.0MV
    58   13  -390.0MV     -1.500 V      -100.0MV
    58   14  -400.0MV     -1.500 V      -100.0MV
    58    2  -480.0MV     -1.500 V      -100.0MV
    58    4  -480.0MV     -1.500 V      -100.0MV
    58    6  -480.0MV     -1.500 V      -100.0MV
    58    8  -480.0MV     -1.500 V      -100.0MV
    58   10  -480.0MV     -1.500 V      -100.0MV
    58   12  -480.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.180 V     -1.500 V
    85    3  -890.0MV     -1.500 V
    91    5  -960.0MV     -1.500 V
    97    9  -860.0MV     -1.500 V
   103   11  -920.0MV     -1.500 V
   109   13  -930.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.100 V      2.500 V
   200    4   3.090 V      2.500 V
   206    6   3.110 V      2.500 V
   212    8   3.100 V      2.500 V
   218   10   3.050 V      2.500 V
   224   12   3.110 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   326.0MV                   400.0MV
   250    4   260.0MV                   400.0MV
   256    6   262.0MV                   400.0MV
   262    8   264.0MV                   400.0MV
   268   10   290.0MV                   400.0MV
   274   12   280.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -39.00MA     -100.0MA      -20.00MA
   306    4  -41.90MA     -100.0MA      -20.00MA
   312    6  -41.30MA     -100.0MA      -20.00MA
   318    8  -40.80MA     -100.0MA      -20.00MA
   324   10  -38.60MA     -100.0MA      -20.00MA
   330   12  -39.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1       0 A                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1       0 A                  100.0UA
   381    3       0 A                  100.0UA
   385    5       0 A                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -170.0UA     -400.0UA
   417    3  -170.0UA     -400.0UA
   421    5  -170.0UA     -400.0UA
   425    9  -170.0UA     -400.0UA
   429   11  -170.0UA     -400.0UA
   433   13  -170.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.200MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   3.830MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       6

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -450.0MV     -1.500 V      -100.0MV
    58    3  -450.0MV     -1.500 V      -100.0MV
    58    5  -450.0MV     -1.500 V      -100.0MV
    58    9  -450.0MV     -1.500 V      -100.0MV
    58   11  -450.0MV     -1.500 V      -100.0MV
    58   13  -460.0MV     -1.500 V      -100.0MV
    58   14  -490.0MV     -1.500 V      -100.0MV
    58    2  -570.0MV     -1.500 V      -100.0MV
    58    4  -570.0MV     -1.500 V      -100.0MV
    58    6  -570.0MV     -1.500 V      -100.0MV
    58    8  -580.0MV     -1.500 V      -100.0MV
    58   10  -560.0MV     -1.500 V      -100.0MV
    58   12  -570.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.420 V     -1.500 V
    85    3  -1.120 V     -1.500 V
    91    5  -1.290 V     -1.500 V
    97    9  -1.040 V     -1.500 V
   103   11  -1.120 V     -1.500 V
   109   13  -1.110 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.090 V      2.500 V
   200    4   3.090 V      2.500 V
   206    6   3.090 V      2.500 V
   212    8   3.080 V      2.500 V
   218   10   3.090 V      2.500 V
   224   12   3.090 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   286.0MV                   400.0MV
   250    4   258.0MV                   400.0MV
   256    6   260.0MV                   400.0MV
   262    8   346.0MV                   400.0MV
   268   10   282.0MV                   400.0MV
   274   12   276.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -41.00MA     -100.0MA      -20.00MA
   306    4  -44.00MA     -100.0MA      -20.00MA
   312    6  -43.50MA     -100.0MA      -20.00MA
   318    8  -40.40MA     -100.0MA      -20.00MA
   324   10  -40.20MA     -100.0MA      -20.00MA
   330   12  -41.40MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -190.0UA     -400.0UA
   417    3  -190.0UA     -400.0UA
   421    5  -190.0UA     -400.0UA
   425    9  -190.0UA     -400.0UA
   429   11  -190.0UA     -400.0UA
   433   13  -190.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.290MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.090MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       7

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -440.0MV     -1.500 V      -100.0MV
    58    3  -430.0MV     -1.500 V      -100.0MV
    58    5  -430.0MV     -1.500 V      -100.0MV
    58    9  -430.0MV     -1.500 V      -100.0MV
    58   11  -430.0MV     -1.500 V      -100.0MV
    58   13  -430.0MV     -1.500 V      -100.0MV
    58   14  -460.0MV     -1.500 V      -100.0MV
    58    2  -530.0MV     -1.500 V      -100.0MV
    58    4  -530.0MV     -1.500 V      -100.0MV
    58    6  -530.0MV     -1.500 V      -100.0MV
    58    8  -540.0MV     -1.500 V      -100.0MV
    58   10  -530.0MV     -1.500 V      -100.0MV
    58   12  -530.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.400 V     -1.500 V
    85    3  -1.090 V     -1.500 V
    91    5  -1.150 V     -1.500 V
    97    9  -1.060 V     -1.500 V
   103   11  -1.130 V     -1.500 V
   109   13  -1.130 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.120 V      2.500 V
   200    4   3.130 V      2.500 V
   206    6   3.130 V      2.500 V
   212    8   3.130 V      2.500 V
   218   10   3.110 V      2.500 V
   224   12   3.130 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   346.0MV                   400.0MV
   250    4   320.0MV                   400.0MV
   256    6   320.0MV                   400.0MV
   262    8   346.0MV                   400.0MV
   268   10   354.0MV                   400.0MV
   274   12   338.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -40.20MA     -100.0MA      -20.00MA
   306    4  -42.90MA     -100.0MA      -20.00MA
   312    6  -42.40MA     -100.0MA      -20.00MA
   318    8  -40.30MA     -100.0MA      -20.00MA
   324   10  -41.60MA     -100.0MA      -20.00MA
   330   12  -40.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -180.0UA     -400.0UA
   417    3  -180.0UA     -400.0UA
   421    5  -180.0UA     -400.0UA
   425    9  -180.0UA     -400.0UA
   429   11  -180.0UA     -400.0UA
   433   13  -180.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.220MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   3.900MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       8

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -450.0MV     -1.500 V      -100.0MV
    58    3  -450.0MV     -1.500 V      -100.0MV
    58    5  -450.0MV     -1.500 V      -100.0MV
    58    9  -450.0MV     -1.500 V      -100.0MV
    58   11  -450.0MV     -1.500 V      -100.0MV
    58   13  -450.0MV     -1.500 V      -100.0MV
    58   14  -480.0MV     -1.500 V      -100.0MV
    58    2  -550.0MV     -1.500 V      -100.0MV
    58    4  -550.0MV     -1.500 V      -100.0MV
    58    6  -550.0MV     -1.500 V      -100.0MV
    58    8  -550.0MV     -1.500 V      -100.0MV
    58   10  -550.0MV     -1.500 V      -100.0MV
    58   12  -550.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.370 V     -1.500 V
    85    3  -990.0MV     -1.500 V
    91    5  -1.050 V     -1.500 V
    97    9  -960.0MV     -1.500 V
   103   11  -1.030 V     -1.500 V
   109   13  -1.090 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.100 V      2.500 V
   200    4   3.110 V      2.500 V
   206    6   3.110 V      2.500 V
   212    8   3.110 V      2.500 V
   218   10   3.100 V      2.500 V
   224   12   3.110 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   320.0MV                   400.0MV
   250    4   292.0MV                   400.0MV
   256    6   294.0MV                   400.0MV
   262    8   300.0MV                   400.0MV
   268   10   306.0MV                   400.0MV
   274   12   312.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -40.50MA     -100.0MA      -20.00MA
   306    4  -43.30MA     -100.0MA      -20.00MA
   312    6  -42.80MA     -100.0MA      -20.00MA
   318    8  -42.00MA     -100.0MA      -20.00MA
   324   10  -41.90MA     -100.0MA      -20.00MA
   330   12  -40.80MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -180.0UA     -400.0UA
   417    3  -180.0UA     -400.0UA
   421    5  -180.0UA     -400.0UA
   425    9  -180.0UA     -400.0UA
   429   11  -180.0UA     -400.0UA
   433   13  -180.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.240MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   3.930MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N       9

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -430.0MV     -1.500 V      -100.0MV
    58    3  -430.0MV     -1.500 V      -100.0MV
    58    5  -430.0MV     -1.500 V      -100.0MV
    58    9  -430.0MV     -1.500 V      -100.0MV
    58   11  -430.0MV     -1.500 V      -100.0MV
    58   13  -430.0MV     -1.500 V      -100.0MV
    58   14  -450.0MV     -1.500 V      -100.0MV
    58    2  -530.0MV     -1.500 V      -100.0MV
    58    4  -520.0MV     -1.500 V      -100.0MV
    58    6  -530.0MV     -1.500 V      -100.0MV
    58    8  -530.0MV     -1.500 V      -100.0MV
    58   10  -520.0MV     -1.500 V      -100.0MV
    58   12  -520.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.250 V     -1.500 V
    85    3  -970.0MV     -1.500 V
    91    5  -1.040 V     -1.500 V
    97    9  -950.0MV     -1.500 V
   103   11  -1.010 V     -1.500 V
   109   13  -1.090 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.130 V      2.500 V
   200    4   3.130 V      2.500 V
   206    6   3.130 V      2.500 V
   212    8   3.120 V      2.500 V
   218   10   3.110 V      2.500 V
   224   12   3.130 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   320.0MV                   400.0MV
   250    4   290.0MV                   400.0MV
   256    6   292.0MV                   400.0MV
   262    8   332.0MV                   400.0MV
   268   10   302.0MV                   400.0MV
   274   12   310.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -39.80MA     -100.0MA      -20.00MA
   306    4  -42.40MA     -100.0MA      -20.00MA
   312    6  -41.90MA     -100.0MA      -20.00MA
   318    8  -39.00MA     -100.0MA      -20.00MA
   324   10  -41.20MA     -100.0MA      -20.00MA
   330   12  -40.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9       0 A                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -170.0UA     -400.0UA
   417    3  -180.0UA     -400.0UA
   421    5  -170.0UA     -400.0UA
   425    9  -170.0UA     -400.0UA
   429   11  -170.0UA     -400.0UA
   433   13  -170.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.200MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   3.830MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N      10

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -430.0MV     -1.500 V      -100.0MV
    58    3  -430.0MV     -1.500 V      -100.0MV
    58    5  -430.0MV     -1.500 V      -100.0MV
    58    9  -430.0MV     -1.500 V      -100.0MV
    58   11  -430.0MV     -1.500 V      -100.0MV
    58   13  -430.0MV     -1.500 V      -100.0MV
    58   14  -450.0MV     -1.500 V      -100.0MV
    58    2  -530.0MV     -1.500 V      -100.0MV
    58    4  -530.0MV     -1.500 V      -100.0MV
    58    6  -530.0MV     -1.500 V      -100.0MV
    58    8  -530.0MV     -1.500 V      -100.0MV
    58   10  -530.0MV     -1.500 V      -100.0MV
    58   12  -520.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.250 V     -1.500 V
    85    3  -980.0MV     -1.500 V
    91    5  -1.030 V     -1.500 V
    97    9  -950.0MV     -1.500 V
   103   11  -1.010 V     -1.500 V
   109   13  -1.100 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.120 V      2.500 V
   200    4   3.130 V      2.500 V
   206    6   3.130 V      2.500 V
   212    8   3.130 V      2.500 V
   218   10   3.110 V      2.500 V
   224   12   3.130 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   318.0MV                   400.0MV
   250    4   290.0MV                   400.0MV
   256    6   292.0MV                   400.0MV
   262    8   298.0MV                   400.0MV
   268   10   300.0MV                   400.0MV
   274   12   310.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -40.10MA     -100.0MA      -20.00MA
   306    4  -42.60MA     -100.0MA      -20.00MA
   312    6  -42.40MA     -100.0MA      -20.00MA
   318    8  -41.80MA     -100.0MA      -20.00MA
   324   10  -41.30MA     -100.0MA      -20.00MA
   330   12  -40.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11       0 A                  100.0UA
   397   13       0 A                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -180.0UA     -400.0UA
   417    3  -180.0UA     -400.0UA
   421    5  -180.0UA     -400.0UA
   425    9  -180.0UA     -400.0UA
   429   11  -180.0UA     -400.0UA
   433   13  -180.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.240MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   3.930MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N      11

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -390.0MV     -1.500 V      -100.0MV
    58    3  -390.0MV     -1.500 V      -100.0MV
    58    5  -390.0MV     -1.500 V      -100.0MV
    58    9  -390.0MV     -1.500 V      -100.0MV
    58   11  -390.0MV     -1.500 V      -100.0MV
    58   13  -390.0MV     -1.500 V      -100.0MV
    58   14  -400.0MV     -1.500 V      -100.0MV
    58    2  -480.0MV     -1.500 V      -100.0MV
    58    4  -480.0MV     -1.500 V      -100.0MV
    58    6  -480.0MV     -1.500 V      -100.0MV
    58    8  -480.0MV     -1.500 V      -100.0MV
    58   10  -480.0MV     -1.500 V      -100.0MV
    58   12  -480.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.330 V     -1.500 V
    85    3  -960.0MV     -1.500 V
    91    5  -1.030 V     -1.500 V
    97    9  -930.0MV     -1.500 V
   103   11  -990.0MV     -1.500 V
   109   13  -1.040 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.110 V      2.500 V
   200    4   3.110 V      2.500 V
   206    6   3.120 V      2.500 V
   212    8   3.110 V      2.500 V
   218   10   3.070 V      2.500 V
   224   12   3.110 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   318.0MV                   400.0MV
   250    4   290.0MV                   400.0MV
   256    6   292.0MV                   400.0MV
   262    8   296.0MV                   400.0MV
   268   10   300.0MV                   400.0MV
   274   12   312.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -39.10MA     -100.0MA      -20.00MA
   306    4  -42.00MA     -100.0MA      -20.00MA
   312    6  -41.40MA     -100.0MA      -20.00MA
   318    8  -40.80MA     -100.0MA      -20.00MA
   324   10  -40.70MA     -100.0MA      -20.00MA
   330   12  -39.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11       0 A                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -170.0UA     -400.0UA
   417    3  -170.0UA     -400.0UA
   421    5  -170.0UA     -400.0UA
   425    9  -170.0UA     -400.0UA
   429   11  -170.0UA     -400.0UA
   433   13  -170.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.200MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   3.840MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/01/11  08:19
TEST PROGRAM   4LS04         S/N      12

DDS-101-14-A PN 54LS04 TEST SEQ12 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -440.0MV     -1.500 V      -100.0MV
    58    3  -440.0MV     -1.500 V      -100.0MV
    58    5  -440.0MV     -1.500 V      -100.0MV
    58    9  -440.0MV     -1.500 V      -100.0MV
    58   11  -440.0MV     -1.500 V      -100.0MV
    58   13  -440.0MV     -1.500 V      -100.0MV
    58   14  -470.0MV     -1.500 V      -100.0MV
    58    2  -540.0MV     -1.500 V      -100.0MV
    58    4  -540.0MV     -1.500 V      -100.0MV
    58    6  -540.0MV     -1.500 V      -100.0MV
    58    8  -540.0MV     -1.500 V      -100.0MV
    58   10  -540.0MV     -1.500 V      -100.0MV
    58   12  -540.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.290 V     -1.500 V
    85    3  -990.0MV     -1.500 V
    91    5  -1.050 V     -1.500 V
    97    9  -960.0MV     -1.500 V
   103   11  -1.020 V     -1.500 V
   109   13  -1.070 V     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.110 V      2.500 V
   200    4   3.110 V      2.500 V
   206    6   3.110 V      2.500 V
   212    8   3.110 V      2.500 V
   218   10   3.100 V      2.500 V
   224   12   3.110 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   322.0MV                   400.0MV
   250    4   294.0MV                   400.0MV
   256    6   296.0MV                   400.0MV
   262    8   338.0MV                   400.0MV
   268   10   306.0MV                   400.0MV
   274   12   314.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -40.70MA     -100.0MA      -20.00MA
   306    4  -43.20MA     -100.0MA      -20.00MA
   312    6  -42.70MA     -100.0MA      -20.00MA
   318    8  -40.30MA     -100.0MA      -20.00MA
   324   10  -42.00MA     -100.0MA      -20.00MA
   330   12  -41.00MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5       0 A                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9       0 A                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -180.0UA     -400.0UA
   417    3  -180.0UA     -400.0UA
   421    5  -180.0UA     -400.0UA
   425    9  -180.0UA     -400.0UA
   429   11  -180.0UA     -400.0UA
   433   13  -180.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.260MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   3.990MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

Post Burn-In Test Results at -55°C

STAT1 08/20/11 04:50
TEST PROGRAM 4LS04 S/N 1

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C

CONTINUITY TEST

INST #	PIN	MEASURED	LT	GT
58	1	-500.0MV	-1.500 V	-100.0MV
58	3	-500.0MV	-1.500 V	-100.0MV
58	5	-700.0MV	-1.500 V	-100.0MV
58	9	-500.0MV	-1.500 V	-100.0MV
58	11	-500.0MV	-1.500 V	-100.0MV
58	13	-500.0MV	-1.500 V	-100.0MV
58	14	-570.0MV	-1.500 V	-100.0MV
58	2	-640.0MV	-1.500 V	-100.0MV
58	4	-630.0MV	-1.500 V	-100.0MV
58	6	-640.0MV	-1.500 V	-100.0MV
58	8	-640.0MV	-1.500 V	-100.0MV
58	10	-630.0MV	-1.500 V	-100.0MV
58	12	-640.0MV	-1.500 V	-100.0MV

VIK TEST -1.5V MINIIN=-18MAVCC=4.5V

INST #	PIN	MEASURED	LT	GT
79	1	-950.0MV	-1.500 V	
85	3	-890.0MV	-1.500 V	
91	5	- 1 V	-1.500 V	
97	9	-980.0MV	-1.500 V	
103	11	-910.0MV	-1.500 V	
109	13	-890.0MV	-1.500 V	

FUNCTIONAL TEST
VCC= 4.500
VIH= 2 VIL= 700.0E-03

VOH TEST
VCC= 4.500
VOH LIMIT 2.500

INST #	PIN	MEASURED	LT	GT
194	2	2.940 V	2.500 V	
200	4	2.940 V	2.500 V	
206	6	2.940 V	2.500 V	
212	8	2.940 V	2.500 V	
218	10	2.940 V	2.500 V	
224	12	2.930 V	2.500 V	

VOL TEST
VCC= 4.500
VOL LIMIT 400.0E-03

INST #	PIN	MEASURED	LT	GT
244	2	272.0MV		400.0MV
250	4	250.0MV		400.0MV
256	6	266.0MV		400.0MV
262	8	262.0MV		400.0MV
268	10	276.0MV		400.0MV
274	12	256.0MV		400.0MV

```
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -45.30MA     -100.0MA      -20.00MA
   306    4  -47.90MA     -100.0MA      -20.00MA
   312    6  -45.80MA     -100.0MA      -20.00MA
   318    8  -45.60MA     -100.0MA      -20.00MA
   324   10  -44.40MA     -100.0MA      -20.00MA
   330   12  -47.20MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -220.0UA     -400.0UA
   417    3  -220.0UA     -400.0UA
   421    5  -220.0UA     -400.0UA
   425    9  -220.0UA     -400.0UA
   429   11  -220.0UA     -400.0UA
   433   13  -220.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.520MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.760MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       2

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -490.0MV     -1.500 V      -100.0MV
    58    3  -490.0MV     -1.500 V      -100.0MV
    58    5  -490.0MV     -1.500 V      -100.0MV
    58    9  -490.0MV     -1.500 V      -100.0MV
    58   11  -490.0MV     -1.500 V      -100.0MV
    58   13  -490.0MV     -1.500 V      -100.0MV
    58   14  -560.0MV     -1.500 V      -100.0MV
    58    2  -630.0MV     -1.500 V      -100.0MV
    58    4  -630.0MV     -1.500 V      -100.0MV
    58    6  -630.0MV     -1.500 V      -100.0MV
    58    8  -630.0MV     -1.500 V      -100.0MV
    58   10  -630.0MV     -1.500 V      -100.0MV
    58   12  -630.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -940.0MV     -1.500 V
    85    3  -890.0MV     -1.500 V
    91    5  -1.060 V     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -900.0MV     -1.500 V
   109   13  -890.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.930 V      2.500 V
   200    4   2.930 V      2.500 V
   206    6   2.930 V      2.500 V
   212    8   2.930 V      2.500 V
   218   10   2.930 V      2.500 V
   224   12   2.930 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   274.0MV                   400.0MV
   250    4   250.0MV                   400.0MV
   256    6   262.0MV                   400.0MV
   262    8   264.0MV                   400.0MV
   268   10   278.0MV                   400.0MV
   274   12   258.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -45.20MA     -100.0MA      -20.00MA
   306    4  -47.90MA     -100.0MA      -20.00MA
   312    6  -46.10MA     -100.0MA      -20.00MA
   318    8  -46.20MA     -100.0MA      -20.00MA
   324   10  -44.60MA     -100.0MA      -20.00MA
   330   12  -47.60MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -220.0UA     -400.0UA
   417    3  -220.0UA     -400.0UA
   421    5  -220.0UA     -400.0UA
   425    9  -220.0UA     -400.0UA
   429   11  -220.0UA     -400.0UA
   433   13  -220.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.540MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.780MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       3

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -490.0MV     -1.500 V      -100.0MV
    58    3  -490.0MV     -1.500 V      -100.0MV
    58    5  -490.0MV     -1.500 V      -100.0MV
    58    9  -490.0MV     -1.500 V      -100.0MV
    58   11  -490.0MV     -1.500 V      -100.0MV
    58   13  -490.0MV     -1.500 V      -100.0MV
    58   14  -550.0MV     -1.500 V      -100.0MV
    58    2  -620.0MV     -1.500 V      -100.0MV
    58    4  -620.0MV     -1.500 V      -100.0MV
    58    6  -620.0MV     -1.500 V      -100.0MV
    58    8  -630.0MV     -1.500 V      -100.0MV
    58   10  -620.0MV     -1.500 V      -100.0MV
    58   12  -620.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -940.0MV     -1.500 V
    85    3  -910.0MV     -1.500 V
    91    5  -950.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -900.0MV     -1.500 V
   109   13  -890.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.950 V      2.500 V
   200    4   2.960 V      2.500 V
   206    6   2.950 V      2.500 V
   212    8   2.950 V      2.500 V
   218   10   2.950 V      2.500 V
   224   12   2.950 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   272.0MV                   400.0MV
   250    4   246.0MV                   400.0MV
   256    6   256.0MV                   400.0MV
   262    8   258.0MV                   400.0MV
   268   10   272.0MV                   400.0MV
   274   12   256.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -45.00MA     -100.0MA      -20.00MA
   306    4  -48.10MA     -100.0MA      -20.00MA
   312    6  -46.30MA     -100.0MA      -20.00MA
   318    8  -46.30MA     -100.0MA      -20.00MA
   324   10  -44.50MA     -100.0MA      -20.00MA
   330   12  -47.30MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -220.0UA     -400.0UA
   417    3  -220.0UA     -400.0UA
   421    5  -220.0UA     -400.0UA
   425    9  -220.0UA     -400.0UA
   429   11  -220.0UA     -400.0UA
   433   13  -220.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.530MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.780MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       4

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -490.0MV     -1.500 V      -100.0MV
    58    3  -490.0MV     -1.500 V      -100.0MV
    58    5  -490.0MV     -1.500 V      -100.0MV
    58    9  -490.0MV     -1.500 V      -100.0MV
    58   11  -490.0MV     -1.500 V      -100.0MV
    58   13  -490.0MV     -1.500 V      -100.0MV
    58   14  -550.0MV     -1.500 V      -100.0MV
    58    2  -620.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -620.0MV     -1.500 V      -100.0MV
    58    8  -620.0MV     -1.500 V      -100.0MV
    58   10  -620.0MV     -1.500 V      -100.0MV
    58   12  -620.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -940.0MV     -1.500 V
    85    3  -890.0MV     -1.500 V
    91    5  -950.0MV     -1.500 V
    97    9  -990.0MV     -1.500 V
   103   11  -900.0MV     -1.500 V
   109   13  -890.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.960 V      2.500 V
   200    4   2.960 V      2.500 V
   206    6   2.960 V      2.500 V
   212    8   2.950 V      2.500 V
   218   10   2.950 V      2.500 V
   224   12   2.950 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   276.0MV                   400.0MV
   250    4   248.0MV                   400.0MV
   256    6   258.0MV                   400.0MV
   262    8   276.0MV                   400.0MV
   268   10   274.0MV                   400.0MV
   274   12   256.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -45.10MA     -100.0MA      -20.00MA
   306    4  -48.00MA     -100.0MA      -20.00MA
   312    6  -46.20MA     -100.0MA      -20.00MA
   318    8  -44.90MA     -100.0MA      -20.00MA
   324   10  -44.60MA     -100.0MA      -20.00MA
   330   12  -47.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -220.0UA     -400.0UA
   417    3  -220.0UA     -400.0UA
   421    5  -220.0UA     -400.0UA
   425    9  -220.0UA     -400.0UA
   429   11  -220.0UA     -400.0UA
   433   13  -220.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.540MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.790MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       5

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -500.0MV     -1.500 V      -100.0MV
    58    3  -500.0MV     -1.500 V      -100.0MV
    58    5  -500.0MV     -1.500 V      -100.0MV
    58    9  -500.0MV     -1.500 V      -100.0MV
    58   11  -500.0MV     -1.500 V      -100.0MV
    58   13  -500.0MV     -1.500 V      -100.0MV
    58   14  -570.0MV     -1.500 V      -100.0MV
    58    2  -630.0MV     -1.500 V      -100.0MV
    58    4  -630.0MV     -1.500 V      -100.0MV
    58    6  -630.0MV     -1.500 V      -100.0MV
    58    8  -640.0MV     -1.500 V      -100.0MV
    58   10  -630.0MV     -1.500 V      -100.0MV
    58   12  -630.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -950.0MV     -1.500 V
    85    3  -890.0MV     -1.500 V
    91    5  -920.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -910.0MV     -1.500 V
   109   13  -890.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.940 V      2.500 V
   200    4   2.940 V      2.500 V
   206    6   2.940 V      2.500 V
   212    8   2.930 V      2.500 V
   218   10   2.930 V      2.500 V
   224   12   2.940 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   274.0MV                   400.0MV
   250    4   248.0MV                   400.0MV
   256    6   258.0MV                   400.0MV
   262    8   260.0MV                   400.0MV
   268   10   272.0MV                   400.0MV
   274   12   258.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -45.00MA     -100.0MA      -20.00MA
   306    4  -48.10MA     -100.0MA      -20.00MA
   312    6  -46.20MA     -100.0MA      -20.00MA
   318    8  -46.30MA     -100.0MA      -20.00MA
   324   10  -44.40MA     -100.0MA      -20.00MA
   330   12  -47.40MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -220.0UA     -400.0UA
   417    3  -220.0UA     -400.0UA
   421    5  -220.0UA     -400.0UA
   425    9  -220.0UA     -400.0UA
   429   11  -220.0UA     -400.0UA
   433   13  -220.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.540MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.790MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       6

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -490.0MV     -1.500 V      -100.0MV
    58    9  -490.0MV     -1.500 V      -100.0MV
    58   11  -490.0MV     -1.500 V      -100.0MV
    58   13  -490.0MV     -1.500 V      -100.0MV
    58   14  -550.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -620.0MV     -1.500 V      -100.0MV
    58    8  -620.0MV     -1.500 V      -100.0MV
    58   10  -620.0MV     -1.500 V      -100.0MV
    58   12  -620.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -940.0MV     -1.500 V
    85    3  -880.0MV     -1.500 V
    91    5  -1.230 V     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -900.0MV     -1.500 V
   109   13  -880.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.970 V      2.500 V
   200    4   2.970 V      2.500 V
   206    6   2.960 V      2.500 V
   212    8   2.970 V      2.500 V
   218   10   2.970 V      2.500 V
   224   12   2.970 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   274.0MV                   400.0MV
   250    4   246.0MV                   400.0MV
   256    6   258.0MV                   400.0MV
   262    8   256.0MV                   400.0MV
   268   10   272.0MV                   400.0MV
   274   12   256.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.50MA     -100.0MA      -20.00MA
   306    4  -47.30MA     -100.0MA      -20.00MA
   312    6  -45.40MA     -100.0MA      -20.00MA
   318    8  -45.80MA     -100.0MA      -20.00MA
   324   10  -43.90MA     -100.0MA      -20.00MA
   330   12  -46.80MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.480MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.630MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       7

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -500.0MV     -1.500 V      -100.0MV
    58    3  -500.0MV     -1.500 V      -100.0MV
    58    5  -500.0MV     -1.500 V      -100.0MV
    58    9  -500.0MV     -1.500 V      -100.0MV
    58   11  -500.0MV     -1.500 V      -100.0MV
    58   13  -500.0MV     -1.500 V      -100.0MV
    58   14  -570.0MV     -1.500 V      -100.0MV
    58    2  -630.0MV     -1.500 V      -100.0MV
    58    4  -630.0MV     -1.500 V      -100.0MV
    58    6  -640.0MV     -1.500 V      -100.0MV
    58    8  -640.0MV     -1.500 V      -100.0MV
    58   10  -640.0MV     -1.500 V      -100.0MV
    58   12  -640.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -950.0MV     -1.500 V
    85    3  -930.0MV     -1.500 V
    91    5  -1.190 V     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -900.0MV     -1.500 V
   109   13  -890.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.940 V      2.500 V
   200    4   2.940 V      2.500 V
   206    6   2.940 V      2.500 V
   212    8   2.930 V      2.500 V
   218   10   2.940 V      2.500 V
   224   12   2.940 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   276.0MV                   400.0MV
   250    4   248.0MV                   400.0MV
   256    6   258.0MV                   400.0MV
   262    8   312.0MV                   400.0MV
   268   10   274.0MV                   400.0MV
   274   12   256.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.40MA     -100.0MA      -20.00MA
   306    4  -47.80MA     -100.0MA      -20.00MA
   312    6  -46.00MA     -100.0MA      -20.00MA
   318    8  -43.30MA     -100.0MA      -20.00MA
   324   10  -44.30MA     -100.0MA      -20.00MA
   330   12  -47.30MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -220.0UA     -400.0UA
   417    3  -220.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -220.0UA     -400.0UA
   433   13  -220.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.490MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.650MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       8

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -500.0MV     -1.500 V      -100.0MV
    58    3  -500.0MV     -1.500 V      -100.0MV
    58    5  -490.0MV     -1.500 V      -100.0MV
    58    9  -500.0MV     -1.500 V      -100.0MV
    58   11  -500.0MV     -1.500 V      -100.0MV
    58   13  -500.0MV     -1.500 V      -100.0MV
    58   14  -570.0MV     -1.500 V      -100.0MV
    58    2  -630.0MV     -1.500 V      -100.0MV
    58    4  -630.0MV     -1.500 V      -100.0MV
    58    6  -630.0MV     -1.500 V      -100.0MV
    58    8  -640.0MV     -1.500 V      -100.0MV
    58   10  -630.0MV     -1.500 V      -100.0MV
    58   12  -630.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -960.0MV     -1.500 V
    85    3  -900.0MV     -1.500 V
    91    5  -930.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -900.0MV     -1.500 V
   109   13  -890.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.940 V      2.500 V
   200    4   2.940 V      2.500 V
   206    6   2.930 V      2.500 V
   212    8   2.930 V      2.500 V
   218   10   2.930 V      2.500 V
   224   12   2.940 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   276.0MV                   400.0MV
   250    4   250.0MV                   400.0MV
   256    6   260.0MV                   400.0MV
   262    8   358.0MV                   400.0MV
   268   10   274.0MV                   400.0MV
   274   12   258.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.20MA     -100.0MA      -20.00MA
   306    4  -47.90MA     -100.0MA      -20.00MA
   312    6  -46.10MA     -100.0MA      -20.00MA
   318    8  -43.60MA     -100.0MA      -20.00MA
   324   10  -44.30MA     -100.0MA      -20.00MA
   330   12  -47.40MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -220.0UA     -400.0UA
   417    3  -220.0UA     -400.0UA
   421    5  -220.0UA     -400.0UA
   425    9  -220.0UA     -400.0UA
   429   11  -220.0UA     -400.0UA
   433   13  -220.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.510MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.710MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       9

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -490.0MV     -1.500 V      -100.0MV
    58    3  -490.0MV     -1.500 V      -100.0MV
    58    5  -490.0MV     -1.500 V      -100.0MV
    58    9  -490.0MV     -1.500 V      -100.0MV
    58   11  -500.0MV     -1.500 V      -100.0MV
    58   13  -490.0MV     -1.500 V      -100.0MV
    58   14  -560.0MV     -1.500 V      -100.0MV
    58    2  -630.0MV     -1.500 V      -100.0MV
    58    4  -630.0MV     -1.500 V      -100.0MV
    58    6  -630.0MV     -1.500 V      -100.0MV
    58    8  -630.0MV     -1.500 V      -100.0MV
    58   10  -630.0MV     -1.500 V      -100.0MV
    58   12  -630.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -950.0MV     -1.500 V
    85    3  -910.0MV     -1.500 V
    91    5  -1.120 V     -1.500 V
    97    9  -990.0MV     -1.500 V
   103   11  -890.0MV     -1.500 V
   109   13  -890.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.950 V      2.500 V
   200    4   2.950 V      2.500 V
   206    6   2.950 V      2.500 V
   212    8   2.950 V      2.500 V
   218   10   2.950 V      2.500 V
   224   12   2.950 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   276.0MV                   400.0MV
   250    4   248.0MV                   400.0MV
   256    6   258.0MV                   400.0MV
   262    8   318.0MV                   400.0MV
   268   10   274.0MV                   400.0MV
   274   12   256.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.00MA     -100.0MA      -20.00MA
   306    4  -47.20MA     -100.0MA      -20.00MA
   312    6  -45.50MA     -100.0MA      -20.00MA
   318    8  -43.20MA     -100.0MA      -20.00MA
   324   10  -43.90MA     -100.0MA      -20.00MA
   330   12  -46.70MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.460MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.570MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N      10

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -500.0MV     -1.500 V      -100.0MV
    58    3  -490.0MV     -1.500 V      -100.0MV
    58    5  -500.0MV     -1.500 V      -100.0MV
    58    9  -500.0MV     -1.500 V      -100.0MV
    58   11  -500.0MV     -1.500 V      -100.0MV
    58   13  -500.0MV     -1.500 V      -100.0MV
    58   14  -570.0MV     -1.500 V      -100.0MV
    58    2  -630.0MV     -1.500 V      -100.0MV
    58    4  -630.0MV     -1.500 V      -100.0MV
    58    6  -630.0MV     -1.500 V      -100.0MV
    58    8  -640.0MV     -1.500 V      -100.0MV
    58   10  -640.0MV     -1.500 V      -100.0MV
    58   12  -640.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -960.0MV     -1.500 V
    85    3  -930.0MV     -1.500 V
    91    5  -960.0MV     -1.500 V
    97    9  -990.0MV     -1.500 V
   103   11  -900.0MV     -1.500 V
   109   13  -890.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.930 V      2.500 V
   200    4   2.930 V      2.500 V
   206    6   2.920 V      2.500 V
   212    8   2.910 V      2.500 V
   218   10   2.920 V      2.500 V
   224   12   2.920 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   276.0MV                   400.0MV
   250    4   250.0MV                   400.0MV
   256    6   260.0MV                   400.0MV
   262    8   358.0MV                   400.0MV
   268   10   274.0MV                   400.0MV
   274   12   256.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.70MA     -100.0MA      -20.00MA
   306    4  -47.90MA     -100.0MA      -20.00MA
   312    6  -46.40MA     -100.0MA      -20.00MA
   318    8  -43.90MA     -100.0MA      -20.00MA
   324   10  -44.40MA     -100.0MA      -20.00MA
   330   12  -47.80MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -220.0UA     -400.0UA
   417    3  -220.0UA     -400.0UA
   421    5  -220.0UA     -400.0UA
   425    9  -220.0UA     -400.0UA
   429   11  -220.0UA     -400.0UA
   433   13  -220.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.550MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.810MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N      11

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -490.0MV     -1.500 V      -100.0MV
    58    3  -490.0MV     -1.500 V      -100.0MV
    58    5  -490.0MV     -1.500 V      -100.0MV
    58    9  -490.0MV     -1.500 V      -100.0MV
    58   11  -490.0MV     -1.500 V      -100.0MV
    58   13  -490.0MV     -1.500 V      -100.0MV
    58   14  -560.0MV     -1.500 V      -100.0MV
    58    2  -620.0MV     -1.500 V      -100.0MV
    58    4  -630.0MV     -1.500 V      -100.0MV
    58    6  -630.0MV     -1.500 V      -100.0MV
    58    8  -1.020 V     -1.500 V      -100.0MV
    58   10  -630.0MV     -1.500 V      -100.0MV
    58   12  -630.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -960.0MV     -1.500 V
    85    3  -920.0MV     -1.500 V
    91    5  -1.040 V     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -900.0MV     -1.500 V
   109   13  -890.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.940 V      2.500 V
   200    4   2.940 V      2.500 V
   206    6   2.940 V      2.500 V
   212    8   2.930 V      2.500 V
   218   10   2.940 V      2.500 V
   224   12   2.940 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   274.0MV                   400.0MV
   250    4   248.0MV                   400.0MV
   256    6   260.0MV                   400.0MV
   262    8   400.0MV                   400.0MV
   268   10   272.0MV                   400.0MV
   274   12   256.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.70MA     -100.0MA      -20.00MA
   306    4  -48.30MA     -100.0MA      -20.00MA
   312    6  -46.30MA     -100.0MA      -20.00MA
   318    8  -43.90MA     -100.0MA      -20.00MA
   324   10  -44.70MA     -100.0MA      -20.00MA
   330   12  -47.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -220.0UA     -400.0UA
   417    3  -220.0UA     -400.0UA
   421    5  -220.0UA     -400.0UA
   425    9  -220.0UA     -400.0UA
   429   11  -220.0UA     -400.0UA
   433   13  -220.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.550MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.840MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N      12

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 -55C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -490.0MV     -1.500 V      -100.0MV
    58    3  -490.0MV     -1.500 V      -100.0MV
    58    5  -490.0MV     -1.500 V      -100.0MV
    58    9  -490.0MV     -1.500 V      -100.0MV
    58   11  -490.0MV     -1.500 V      -100.0MV
    58   13  -490.0MV     -1.500 V      -100.0MV
    58   14  -550.0MV     -1.500 V      -100.0MV
    58    2  -620.0MV     -1.500 V      -100.0MV
    58    4  -620.0MV     -1.500 V      -100.0MV
    58    6  -620.0MV     -1.500 V      -100.0MV
    58    8  -620.0MV     -1.500 V      -100.0MV
    58   10  -620.0MV     -1.500 V      -100.0MV
    58   12  -620.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -960.0MV     -1.500 V
    85    3  -910.0MV     -1.500 V
    91    5  -1.160 V     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -900.0MV     -1.500 V
   109   13  -890.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.950 V      2.500 V
   200    4   2.950 V      2.500 V
   206    6   2.950 V      2.500 V
   212    8   2.940 V      2.500 V
   218   10   2.950 V      2.500 V
   224   12   2.940 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   272.0MV                   400.0MV
   250    4   248.0MV                   400.0MV
   256    6   258.0MV                   400.0MV
   262    8   326.0MV                   400.0MV
   268   10   272.0MV                   400.0MV
   274   12   258.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.20MA     -100.0MA      -20.00MA
   306    4  -47.30MA     -100.0MA      -20.00MA
   312    6  -45.60MA     -100.0MA      -20.00MA
   318    8  -43.40MA     -100.0MA      -20.00MA
   324   10  -43.90MA     -100.0MA      -20.00MA
   330   12  -47.00MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -220.0UA     -400.0UA
   417    3  -220.0UA     -400.0UA
   421    5  -220.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -220.0UA     -400.0UA
   433   13  -220.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.500MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.680MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

Post Burn-In Test Results at 25°C

STAT1 08/20/11 04:50
TEST PROGRAM 4LS04 S/N 1

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C

CONTINUITY TEST

INST #	PIN	MEASURED	LT	GT
58	1	-470.0MV	-1.500 V	-100.0MV
58	3	-470.0MV	-1.500 V	-100.0MV
58	5	-470.0MV	-1.500 V	-100.0MV
58	9	-470.0MV	-1.500 V	-100.0MV
58	11	-470.0MV	-1.500 V	-100.0MV
58	13	-470.0MV	-1.500 V	-100.0MV
58	14	-520.0MV	-1.500 V	-100.0MV
58	2	-600.0MV	-1.500 V	-100.0MV
58	4	-600.0MV	-1.500 V	-100.0MV
58	6	-590.0MV	-1.500 V	-100.0MV
58	8	-600.0MV	-1.500 V	-100.0MV
58	10	-600.0MV	-1.500 V	-100.0MV
58	12	-600.0MV	-1.500 V	-100.0MV

VIK TEST -1.5V MINIIN=-18MAVCC=4.5V

INST #	PIN	MEASURED	LT	GT
79	1	-890.0MV	-1.500 V	
85	3	-860.0MV	-1.500 V	
91	5	-950.0MV	-1.500 V	
97	9	-990.0MV	-1.500 V	
103	11	-870.0MV	-1.500 V	
109	13	-870.0MV	-1.500 V	

FUNCTIONAL TEST
VCC= 4.500
VIH= 2 VIL= 700.0E-03

VOH TEST
VCC= 4.500
VOH LIMIT 2.500

INST #	PIN	MEASURED	LT	GT
194	2	3.010 V	2.500 V	
200	4	3.010 V	2.500 V	
206	6	3.010 V	2.500 V	
212	8	3.010 V	2.500 V	
218	10	3.010 V	2.500 V	
224	12	3.020 V	2.500 V	

VOL TEST
VCC= 4.500
VOL LIMIT 400.0E-03

INST #	PIN	MEASURED	LT	GT
244	2	266.0MV		400.0MV
250	4	242.0MV		400.0MV
256	6	254.0MV		400.0MV
262	8	250.0MV		400.0MV
268	10	260.0MV		400.0MV
274	12	250.0MV		400.0MV

```
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ----------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.10MA     -100.0MA      -20.00MA
   306    4  -46.40MA     -100.0MA      -20.00MA
   312    6  -44.50MA     -100.0MA      -20.00MA
   318    8  -44.40MA     -100.0MA      -20.00MA
   324   10  -43.90MA     -100.0MA      -20.00MA
   330   12  -45.70MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.420MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.480MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

STAT1 08/20/11 04:50
TEST PROGRAM 4LS04 S/N 2

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C

CONTINUITY TEST

INST #	PIN	MEASURED	LT	GT
58	1	-480.0MV	-1.500 V	-100.0MV
58	3	-480.0MV	-1.500 V	-100.0MV
58	5	-480.0MV	-1.500 V	-100.0MV
58	9	-480.0MV	-1.500 V	-100.0MV
58	11	-480.0MV	-1.500 V	-100.0MV
58	13	-480.0MV	-1.500 V	-100.0MV
58	14	-540.0MV	-1.500 V	-100.0MV
58	2	-610.0MV	-1.500 V	-100.0MV
58	4	-610.0MV	-1.500 V	-100.0MV
58	6	-610.0MV	-1.500 V	-100.0MV
58	8	-610.0MV	-1.500 V	-100.0MV
58	10	-610.0MV	-1.500 V	-100.0MV
58	12	-610.0MV	-1.500 V	-100.0MV

VIK TEST -1.5V MINIIN=-18MAVCC=4.5V

INST #	PIN	MEASURED	LT	GT
79	1	-900.0MV	-1.500 V	
85	3	-870.0MV	-1.500 V	
91	5	-960.0MV	-1.500 V	
97	9	-980.0MV	-1.500 V	
103	11	-880.0MV	-1.500 V	
109	13	-880.0MV	-1.500 V	

FUNCTIONAL TEST
VCC= 4.500
VIH= 2 VIL= 700.0E-03

VOH TEST
VCC= 4.500
VOH LIMIT 2.500

INST #	PIN	MEASURED	LT	GT
194	2	2.990 V	2.500 V	
200	4	2.990 V	2.500 V	
206	6	2.990 V	2.500 V	
212	8	2.990 V	2.500 V	
218	10	2.990 V	2.500 V	
224	12	2.990 V	2.500 V	

VOL TEST
VCC= 4.500
VOL LIMIT 400.0E-03

INST #	PIN	MEASURED	LT	GT
244	2	268.0MV		400.0MV
250	4	244.0MV		400.0MV
256	6	258.0MV		400.0MV
262	8	258.0MV		400.0MV
268	10	266.0MV		400.0MV
274	12	250.0MV		400.0MV

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.40MA     -100.0MA      -20.00MA
   306    4  -46.50MA     -100.0MA      -20.00MA
   312    6  -44.70MA     -100.0MA      -20.00MA
   318    8  -44.80MA     -100.0MA      -20.00MA
   324   10  -44.20MA     -100.0MA      -20.00MA
   330   12  -46.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.440MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.490MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       3

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -490.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -620.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -900.0MV     -1.500 V
    85    3  -880.0MV     -1.500 V
    91    5  -960.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -880.0MV     -1.500 V
   109   13  -880.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.980 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   268.0MV                   400.0MV
   250    4   246.0MV                   400.0MV
   256    6   254.0MV                   400.0MV
   262    8   304.0MV                   400.0MV
   268   10   268.0MV                   400.0MV
   274   12   252.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.60MA     -100.0MA      -20.00MA
   306    4  -47.00MA     -100.0MA      -20.00MA
   312    6  -45.00MA     -100.0MA      -20.00MA
   318    8  -42.50MA     -100.0MA      -20.00MA
   324   10  -44.60MA     -100.0MA      -20.00MA
   330   12  -46.30MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.450MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.560MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

STAT1 08/20/11 04:50
TEST PROGRAM 4LS04 S/N 4

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C

CONTINUITY TEST

INST #	PIN	MEASURED	LT	GT
58	1	-480.0MV	-1.500 V	-100.0MV
58	3	-480.0MV	-1.500 V	-100.0MV
58	5	-480.0MV	-1.500 V	-100.0MV
58	9	-480.0MV	-1.500 V	-100.0MV
58	11	-480.0MV	-1.500 V	-100.0MV
58	13	-480.0MV	-1.500 V	-100.0MV
58	14	-540.0MV	-1.500 V	-100.0MV
58	2	-610.0MV	-1.500 V	-100.0MV
58	4	-610.0MV	-1.500 V	-100.0MV
58	6	-610.0MV	-1.500 V	-100.0MV
58	8	-610.0MV	-1.500 V	-100.0MV
58	10	-610.0MV	-1.500 V	-100.0MV
58	12	-610.0MV	-1.500 V	-100.0MV

VIK TEST -1.5V MINIIN=-18MAVCC=4.5V

INST #	PIN	MEASURED	LT	GT
79	1	-900.0MV	-1.500 V	
85	3	-870.0MV	-1.500 V	
91	5	-970.0MV	-1.500 V	
97	9	-970.0MV	-1.500 V	
103	11	-880.0MV	-1.500 V	
109	13	-870.0MV	-1.500 V	

FUNCTIONAL TEST
VCC= 4.500
VIH= 2 VIL= 700.0E-03

VOH TEST
VCC= 4.500
VOH LIMIT 2.500

INST #	PIN	MEASURED	LT	GT
194	2	2.990 V	2.500 V	
200	4	2.990 V	2.500 V	
206	6	2.990 V	2.500 V	
212	8	2.990 V	2.500 V	
218	10	2.990 V	2.500 V	
224	12	2.990 V	2.500 V	

VOL TEST
VCC= 4.500
VOL LIMIT 400.0E-03

INST #	PIN	MEASURED	LT	GT
244	2	268.0MV		400.0MV
250	4	242.0MV		400.0MV
256	6	254.0MV		400.0MV
262	8	258.0MV		400.0MV
268	10	272.0MV		400.0MV
274	12	248.0MV		400.0MV

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.70MA     -100.0MA      -20.00MA
   306    4  -47.10MA     -100.0MA      -20.00MA
   312    6  -45.10MA     -100.0MA      -20.00MA
   318    8  -44.40MA     -100.0MA      -20.00MA
   324   10  -44.20MA     -100.0MA      -20.00MA
   330   12  -46.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.460MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.590MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       5

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -900.0MV     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -970.0MV     -1.500 V
    97    9  -970.0MV     -1.500 V
   103   11  -880.0MV     -1.500 V
   109   13  -880.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   266.0MV                   400.0MV
   250    4   242.0MV                   400.0MV
   256    6   256.0MV                   400.0MV
   262    8   258.0MV                   400.0MV
   268   10   278.0MV                   400.0MV
   274   12   252.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.40MA     -100.0MA      -20.00MA
   306    4  -46.80MA     -100.0MA      -20.00MA
   312    6  -44.80MA     -100.0MA      -20.00MA
   318    8  -44.50MA     -100.0MA      -20.00MA
   324   10  -43.60MA     -100.0MA      -20.00MA
   330   12  -46.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.440MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.540MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       6

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -910.0MV     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -980.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -880.0MV     -1.500 V
   109   13  -880.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8       3 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12       3 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   266.0MV                   400.0MV
   250    4   242.0MV                   400.0MV
   256    6   252.0MV                   400.0MV
   262    8   254.0MV                   400.0MV
   268   10   304.0MV                   400.0MV
   274   12   252.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.30MA     -100.0MA      -20.00MA
   306    4  -46.60MA     -100.0MA      -20.00MA
   312    6  -44.90MA     -100.0MA      -20.00MA
   318    8  -45.10MA     -100.0MA      -20.00MA
   324   10  -43.50MA     -100.0MA      -20.00MA
   330   12  -46.00MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.410MA                   2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.450MA                   6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       7

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -900.0MV     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -960.0MV     -1.500 V
    97    9  -970.0MV     -1.500 V
   103   11  -880.0MV     -1.500 V
   109   13  -880.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12   2.990 V      2.500 V

 ---------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ---------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   264.0MV                   400.0MV
   250    4   240.0MV                   400.0MV
   256    6   252.0MV                   400.0MV
   262    8   262.0MV                   400.0MV
   268   10   280.0MV                   400.0MV
   274   12   250.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.50MA     -100.0MA      -20.00MA
   306    4  -46.80MA     -100.0MA      -20.00MA
   312    6  -45.10MA     -100.0MA      -20.00MA
   318    8  -44.30MA     -100.0MA      -20.00MA
   324   10  -43.70MA     -100.0MA      -20.00MA
   330   12  -46.20MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11       0 A                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.430MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.480MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       8

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -900.0MV     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -970.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -880.0MV     -1.500 V
   109   13  -880.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8       3 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12       3 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   266.0MV                   400.0MV
   250    4   242.0MV                   400.0MV
   256    6   256.0MV                   400.0MV
   262    8   256.0MV                   400.0MV
   268   10   290.0MV                   400.0MV
   274   12   250.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.30MA     -100.0MA      -20.00MA
   306    4  -46.60MA     -100.0MA      -20.00MA
   312    6  -44.90MA     -100.0MA      -20.00MA
   318    8  -44.70MA     -100.0MA      -20.00MA
   324   10  -43.50MA     -100.0MA      -20.00MA
   330   12  -46.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.410MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.450MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       9

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -900.0MV     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -960.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -880.0MV     -1.500 V
   109   13  -880.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4   2.990 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12       3 V      2.500 V

 ---------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ---------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   266.0MV                   400.0MV
   250    4   244.0MV                   400.0MV
   256    6   256.0MV                   400.0MV
   262    8   264.0MV                   400.0MV
   268   10   298.0MV                   400.0MV
   274   12   252.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.30MA     -100.0MA      -20.00MA
   306    4  -46.50MA     -100.0MA      -20.00MA
   312    6  -44.70MA     -100.0MA      -20.00MA
   318    8  -43.80MA     -100.0MA      -20.00MA
   324   10  -43.30MA     -100.0MA      -20.00MA
   330   12  -46.00MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.410MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.440MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N      10

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -530.0MV     -1.500 V      -100.0MV
    58    2  -600.0MV     -1.500 V      -100.0MV
    58    4  -600.0MV     -1.500 V      -100.0MV
    58    6  -600.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -600.0MV     -1.500 V      -100.0MV
    58   12  -600.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -900.0MV     -1.500 V
    85    3  -860.0MV     -1.500 V
    91    5  -960.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -880.0MV     -1.500 V
   109   13  -870.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2       3 V      2.500 V
   200    4       3 V      2.500 V
   206    6       3 V      2.500 V
   212    8       3 V      2.500 V
   218   10       3 V      2.500 V
   224   12       3 V      2.500 V

 ---------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ---------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   264.0MV                   400.0MV
   250    4   242.0MV                   400.0MV
   256    6   252.0MV                   400.0MV
   262    8   262.0MV                   400.0MV
   268   10   306.0MV                   400.0MV
   274   12   250.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.40MA     -100.0MA      -20.00MA
   306    4  -46.30MA     -100.0MA      -20.00MA
   312    6  -44.90MA     -100.0MA      -20.00MA
   318    8  -44.30MA     -100.0MA      -20.00MA
   324   10  -43.00MA     -100.0MA      -20.00MA
   330   12  -46.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.430MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.500MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N      11

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -600.0MV     -1.500 V      -100.0MV
    58    4  -600.0MV     -1.500 V      -100.0MV
    58    6  -600.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -600.0MV     -1.500 V      -100.0MV
    58   12  -600.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -900.0MV     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -970.0MV     -1.500 V
    97    9  -970.0MV     -1.500 V
   103   11  -870.0MV     -1.500 V
   109   13  -870.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2       3 V      2.500 V
   200    4       3 V      2.500 V
   206    6       3 V      2.500 V
   212    8       3 V      2.500 V
   218   10       3 V      2.500 V
   224   12       3 V      2.500 V

 ---------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ---------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   266.0MV                   400.0MV
   250    4   242.0MV                   400.0MV
   256    6   252.0MV                   400.0MV
   262    8   284.0MV                   400.0MV
   268   10   282.0MV                   400.0MV
   274   12   250.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.40MA     -100.0MA      -20.00MA
   306    4  -46.90MA     -100.0MA      -20.00MA
   312    6  -44.90MA     -100.0MA      -20.00MA
   318    8  -43.20MA     -100.0MA      -20.00MA
   324   10  -43.50MA     -100.0MA      -20.00MA
   330   12  -46.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.440MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.550MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N      12

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +25C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -480.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -480.0MV     -1.500 V      -100.0MV
    58   13  -480.0MV     -1.500 V      -100.0MV
    58   14  -540.0MV     -1.500 V      -100.0MV
    58    2  -610.0MV     -1.500 V      -100.0MV
    58    4  -610.0MV     -1.500 V      -100.0MV
    58    6  -610.0MV     -1.500 V      -100.0MV
    58    8  -610.0MV     -1.500 V      -100.0MV
    58   10  -610.0MV     -1.500 V      -100.0MV
    58   12  -610.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -900.0MV     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -970.0MV     -1.500 V
    97    9  -970.0MV     -1.500 V
   103   11  -880.0MV     -1.500 V
   109   13  -870.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   2.990 V      2.500 V
   200    4       3 V      2.500 V
   206    6   2.990 V      2.500 V
   212    8   2.990 V      2.500 V
   218   10   2.990 V      2.500 V
   224   12       3 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   264.0MV                   400.0MV
   250    4   244.0MV                   400.0MV
   256    6   254.0MV                   400.0MV
   262    8   302.0MV                   400.0MV
   268   10   302.0MV                   400.0MV
   274   12   250.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -44.30MA     -100.0MA      -20.00MA
   306    4  -46.30MA     -100.0MA      -20.00MA
   312    6  -44.50MA     -100.0MA      -20.00MA
   318    8  -43.10MA     -100.0MA      -20.00MA
   324   10  -43.10MA     -100.0MA      -20.00MA
   330   12  -46.00MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.410MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.420MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

Post Burn-In Test Results at +125°C

STAT1 08/20/11 04:50
TEST PROGRAM 4LS04 S/N 1

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C

CONTINUITY TEST

INST #	PIN	MEASURED	LT	GT
58	1	-470.0MV	-1.500 V	-100.0MV
58	3	-460.0MV	-1.500 V	-100.0MV
58	5	-460.0MV	-1.500 V	-100.0MV
58	9	-460.0MV	-1.500 V	-100.0MV
58	11	-460.0MV	-1.500 V	-100.0MV
58	13	-460.0MV	-1.500 V	-100.0MV
58	14	-510.0MV	-1.500 V	-100.0MV
58	2	-580.0MV	-1.500 V	-100.0MV
58	4	-570.0MV	-1.500 V	-100.0MV
58	6	-570.0MV	-1.500 V	-100.0MV
58	8	-580.0MV	-1.500 V	-100.0MV
58	10	-570.0MV	-1.500 V	-100.0MV
58	12	-570.0MV	-1.500 V	-100.0MV

VIK TEST -1.5V MINIIN=-18MAVCC=4.5V

INST #	PIN	MEASURED	LT	GT
79	1	-920.0MV	-1.500 V	
85	3	-890.0MV	-1.500 V	
91	5	-1.060 V	-1.500 V	
97	9	-940.0MV	-1.500 V	
103	11	-850.0MV	-1.500 V	
109	13	-850.0MV	-1.500 V	

FUNCTIONAL TEST
VCC= 4.500
VIH= 2 VIL= 700.0E-03

VOH TEST
VCC= 4.500
VOH LIMIT 2.500

INST #	PIN	MEASURED	LT	GT
194	2	3.080 V	2.500 V	
200	4	3.080 V	2.500 V	
206	6	3.080 V	2.500 V	
212	8	3.080 V	2.500 V	
218	10	3.080 V	2.500 V	
224	12	3.090 V	2.500 V	

VOL TEST
VCC= 4.500
VOL LIMIT 400.0E-03

INST #	PIN	MEASURED	LT	GT
244	2	262.0MV		400.0MV
250	4	234.0MV		400.0MV
256	6	246.0MV		400.0MV
262	8	266.0MV		400.0MV
268	10	258.0MV		400.0MV
274	12	244.0MV		400.0MV

```
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -41.90MA     -100.0MA      -20.00MA
   306    4  -44.60MA     -100.0MA      -20.00MA
   312    6  -43.00MA     -100.0MA      -20.00MA
   318    8  -40.20MA     -100.0MA      -20.00MA
   324   10  -41.30MA     -100.0MA      -20.00MA
   330   12  -43.80MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -190.0UA     -400.0UA
   417    3  -190.0UA     -400.0UA
   421    5  -180.0UA     -400.0UA
   425    9  -190.0UA     -400.0UA
   429   11  -190.0UA     -400.0UA
   433   13  -190.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.290MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.120MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       2

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -470.0MV     -1.500 V      -100.0MV
    58    3  -470.0MV     -1.500 V      -100.0MV
    58    5  -470.0MV     -1.500 V      -100.0MV
    58    9  -470.0MV     -1.500 V      -100.0MV
    58   11  -470.0MV     -1.500 V      -100.0MV
    58   13  -470.0MV     -1.500 V      -100.0MV
    58   14  -530.0MV     -1.500 V      -100.0MV
    58    2  -590.0MV     -1.500 V      -100.0MV
    58    4  -590.0MV     -1.500 V      -100.0MV
    58    6  -590.0MV     -1.500 V      -100.0MV
    58    8  -600.0MV     -1.500 V      -100.0MV
    58   10  -590.0MV     -1.500 V      -100.0MV
    58   12  -590.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -930.0MV     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -1.130 V     -1.500 V
    97    9  -970.0MV     -1.500 V
   103   11  -870.0MV     -1.500 V
   109   13  -870.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.020 V      2.500 V
   200    4   3.020 V      2.500 V
   206    6   3.020 V      2.500 V
   212    8   3.020 V      2.500 V
   218   10   3.020 V      2.500 V
   224   12   3.020 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   266.0MV                   400.0MV
   250    4   242.0MV                   400.0MV
   256    6   252.0MV                   400.0MV
   262    8   360.0MV                   400.0MV
   268   10   264.0MV                   400.0MV
   274   12   250.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -43.10MA     -100.0MA      -20.00MA
   306    4  -45.90MA     -100.0MA      -20.00MA
   312    6  -44.20MA     -100.0MA      -20.00MA
   318    8  -42.30MA     -100.0MA      -20.00MA
   324   10  -42.50MA     -100.0MA      -20.00MA
   330   12  -45.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.390MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.360MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       3

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -470.0MV     -1.500 V      -100.0MV
    58    5  -470.0MV     -1.500 V      -100.0MV
    58    9  -470.0MV     -1.500 V      -100.0MV
    58   11  -470.0MV     -1.500 V      -100.0MV
    58   13  -470.0MV     -1.500 V      -100.0MV
    58   14  -530.0MV     -1.500 V      -100.0MV
    58    2  -590.0MV     -1.500 V      -100.0MV
    58    4  -600.0MV     -1.500 V      -100.0MV
    58    6  -600.0MV     -1.500 V      -100.0MV
    58    8  -600.0MV     -1.500 V      -100.0MV
    58   10  -590.0MV     -1.500 V      -100.0MV
    58   12  -590.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -970.0MV     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -910.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -870.0MV     -1.500 V
   109   13  -870.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.020 V      2.500 V
   200    4   3.030 V      2.500 V
   206    6   3.020 V      2.500 V
   212    8   3.030 V      2.500 V
   218   10   3.030 V      2.500 V
   224   12   3.030 V      2.500 V

 ---------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ---------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   266.0MV                   400.0MV
   250    4   240.0MV                   400.0MV
   256    6   254.0MV                   400.0MV
   262    8   252.0MV                   400.0MV
   268   10   262.0MV                   400.0MV
   274   12   248.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -43.10MA     -100.0MA      -20.00MA
   306    4  -46.20MA     -100.0MA      -20.00MA
   312    6  -44.20MA     -100.0MA      -20.00MA
   318    8  -44.00MA     -100.0MA      -20.00MA
   324   10  -42.70MA     -100.0MA      -20.00MA
   330   12  -45.50MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.400MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.410MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       4

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -470.0MV     -1.500 V      -100.0MV
    58    5  -470.0MV     -1.500 V      -100.0MV
    58    9  -480.0MV     -1.500 V      -100.0MV
    58   11  -470.0MV     -1.500 V      -100.0MV
    58   13  -470.0MV     -1.500 V      -100.0MV
    58   14  -530.0MV     -1.500 V      -100.0MV
    58    2  -600.0MV     -1.500 V      -100.0MV
    58    4  -600.0MV     -1.500 V      -100.0MV
    58    6  -600.0MV     -1.500 V      -100.0MV
    58    8  -600.0MV     -1.500 V      -100.0MV
    58   10  -600.0MV     -1.500 V      -100.0MV
    58   12  -600.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.130 V     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -880.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -870.0MV     -1.500 V
   109   13  -870.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.010 V      2.500 V
   200    4   3.010 V      2.500 V
   206    6   3.010 V      2.500 V
   212    8   3.010 V      2.500 V
   218   10   3.010 V      2.500 V
   224   12   3.010 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   266.0MV                   400.0MV
   250    4   240.0MV                   400.0MV
   256    6   264.0MV                   400.0MV
   262    8   256.0MV                   400.0MV
   268   10   264.0MV                   400.0MV
   274   12   248.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -43.50MA     -100.0MA      -20.00MA
   306    4  -46.70MA     -100.0MA      -20.00MA
   312    6  -45.10MA     -100.0MA      -20.00MA
   318    8  -43.70MA     -100.0MA      -20.00MA
   324   10  -43.10MA     -100.0MA      -20.00MA
   330   12  -46.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -210.0UA     -400.0UA
   417    3  -210.0UA     -400.0UA
   421    5  -210.0UA     -400.0UA
   425    9  -210.0UA     -400.0UA
   429   11  -210.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.430MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.490MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       5

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -480.0MV     -1.500 V      -100.0MV
    58    3  -480.0MV     -1.500 V      -100.0MV
    58    5  -470.0MV     -1.500 V      -100.0MV
    58    9  -470.0MV     -1.500 V      -100.0MV
    58   11  -470.0MV     -1.500 V      -100.0MV
    58   13  -470.0MV     -1.500 V      -100.0MV
    58   14  -530.0MV     -1.500 V      -100.0MV
    58    2  -600.0MV     -1.500 V      -100.0MV
    58    4  -600.0MV     -1.500 V      -100.0MV
    58    6  -600.0MV     -1.500 V      -100.0MV
    58    8  -600.0MV     -1.500 V      -100.0MV
    58   10  -600.0MV     -1.500 V      -100.0MV
    58   12  -600.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.140 V     -1.500 V
    85    3  -880.0MV     -1.500 V
    91    5  -980.0MV     -1.500 V
    97    9  -980.0MV     -1.500 V
   103   11  -870.0MV     -1.500 V
   109   13  -880.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.010 V      2.500 V
   200    4   3.020 V      2.500 V
   206    6   3.010 V      2.500 V
   212    8   3.020 V      2.500 V
   218   10   3.010 V      2.500 V
   224   12   3.010 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   270.0MV                   400.0MV
   250    4   246.0MV                   400.0MV
   256    6   256.0MV                   400.0MV
   262    8   252.0MV                   400.0MV
   268   10   268.0MV                   400.0MV
   274   12   250.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -43.40MA     -100.0MA      -20.00MA
   306    4  -46.00MA     -100.0MA      -20.00MA
   312    6  -45.10MA     -100.0MA      -20.00MA
   318    8  -44.70MA     -100.0MA      -20.00MA
   324   10  -43.00MA     -100.0MA      -20.00MA
   330   12  -45.80MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -210.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.420MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.470MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       6

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -470.0MV     -1.500 V      -100.0MV
    58    3  -470.0MV     -1.500 V      -100.0MV
    58    5  -470.0MV     -1.500 V      -100.0MV
    58    9  -470.0MV     -1.500 V      -100.0MV
    58   11  -470.0MV     -1.500 V      -100.0MV
    58   13  -470.0MV     -1.500 V      -100.0MV
    58   14  -520.0MV     -1.500 V      -100.0MV
    58    2  -590.0MV     -1.500 V      -100.0MV
    58    4  -590.0MV     -1.500 V      -100.0MV
    58    6  -590.0MV     -1.500 V      -100.0MV
    58    8  -590.0MV     -1.500 V      -100.0MV
    58   10  -590.0MV     -1.500 V      -100.0MV
    58   12  -590.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.210 V     -1.500 V
    85    3  -920.0MV     -1.500 V
    91    5  -910.0MV     -1.500 V
    97    9  -1.020 V     -1.500 V
   103   11  -910.0MV     -1.500 V
   109   13  -910.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.030 V      2.500 V
   200    4   3.040 V      2.500 V
   206    6   3.040 V      2.500 V
   212    8   3.040 V      2.500 V
   218   10   3.030 V      2.500 V
   224   12   3.040 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   284.0MV                   400.0MV
   250    4   258.0MV                   400.0MV
   256    6   268.0MV                   400.0MV
   262    8   264.0MV                   400.0MV
   268   10   284.0MV                   400.0MV
   274   12   268.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.90MA     -100.0MA      -20.00MA
   306    4  -45.50MA     -100.0MA      -20.00MA
   312    6  -44.00MA     -100.0MA      -20.00MA
   318    8  -44.00MA     -100.0MA      -20.00MA
   324   10  -42.40MA     -100.0MA      -20.00MA
   330   12  -45.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -200.0UA     -400.0UA
   417    3  -200.0UA     -400.0UA
   421    5  -200.0UA     -400.0UA
   425    9  -200.0UA     -400.0UA
   429   11  -200.0UA     -400.0UA
   433   13  -200.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.350MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.270MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       7

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -460.0MV     -1.500 V      -100.0MV
    58    3  -460.0MV     -1.500 V      -100.0MV
    58    5  -460.0MV     -1.500 V      -100.0MV
    58    9  -460.0MV     -1.500 V      -100.0MV
    58   11  -460.0MV     -1.500 V      -100.0MV
    58   13  -460.0MV     -1.500 V      -100.0MV
    58   14  -510.0MV     -1.500 V      -100.0MV
    58    2  -580.0MV     -1.500 V      -100.0MV
    58    4  -580.0MV     -1.500 V      -100.0MV
    58    6  -580.0MV     -1.500 V      -100.0MV
    58    8  -580.0MV     -1.500 V      -100.0MV
    58   10  -570.0MV     -1.500 V      -100.0MV
    58   12  -570.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.140 V     -1.500 V
    85    3  -860.0MV     -1.500 V
    91    5  -910.0MV     -1.500 V
    97    9  -960.0MV     -1.500 V
   103   11  -860.0MV     -1.500 V
   109   13  -860.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.060 V      2.500 V
   200    4   3.060 V      2.500 V
   206    6   3.060 V      2.500 V
   212    8   3.060 V      2.500 V
   218   10   3.060 V      2.500 V
   224   12   3.060 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   262.0MV                   400.0MV
   250    4   238.0MV                   400.0MV
   256    6   248.0MV                   400.0MV
   262    8   248.0MV                   400.0MV
   268   10   264.0MV                   400.0MV
   274   12   244.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -42.10MA     -100.0MA      -20.00MA
   306    4  -44.50MA     -100.0MA      -20.00MA
   312    6  -43.50MA     -100.0MA      -20.00MA
   318    8  -43.20MA     -100.0MA      -20.00MA
   324   10  -41.50MA     -100.0MA      -20.00MA
   330   12  -44.10MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -190.0UA     -400.0UA
   417    3  -190.0UA     -400.0UA
   421    5  -190.0UA     -400.0UA
   425    9  -190.0UA     -400.0UA
   429   11  -190.0UA     -400.0UA
   433   13  -190.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.310MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.160MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       8

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -460.0MV     -1.500 V      -100.0MV
    58    3  -460.0MV     -1.500 V      -100.0MV
    58    5  -460.0MV     -1.500 V      -100.0MV
    58    9  -460.0MV     -1.500 V      -100.0MV
    58   11  -460.0MV     -1.500 V      -100.0MV
    58   13  -460.0MV     -1.500 V      -100.0MV
    58   14  -500.0MV     -1.500 V      -100.0MV
    58    2  -570.0MV     -1.500 V      -100.0MV
    58    4  -570.0MV     -1.500 V      -100.0MV
    58    6  -570.0MV     -1.500 V      -100.0MV
    58    8  -570.0MV     -1.500 V      -100.0MV
    58   10  -570.0MV     -1.500 V      -100.0MV
    58   12  -570.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.220 V     -1.500 V
    85    3  -860.0MV     -1.500 V
    91    5  -930.0MV     -1.500 V
    97    9  -960.0MV     -1.500 V
   103   11  -860.0MV     -1.500 V
   109   13  -860.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.060 V      2.500 V
   200    4   3.060 V      2.500 V
   206    6   3.060 V      2.500 V
   212    8   3.060 V      2.500 V
   218   10   3.060 V      2.500 V
   224   12   3.070 V      2.500 V

 ---------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ---------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   266.0MV                   400.0MV
   250    4   240.0MV                   400.0MV
   256    6   246.0MV                   400.0MV
   262    8   252.0MV                   400.0MV
   268   10   264.0MV                   400.0MV
   274   12   244.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -41.50MA     -100.0MA      -20.00MA
   306    4  -43.80MA     -100.0MA      -20.00MA
   312    6  -42.60MA     -100.0MA      -20.00MA
   318    8  -42.50MA     -100.0MA      -20.00MA
   324   10  -41.00MA     -100.0MA      -20.00MA
   330   12  -43.60MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -190.0UA     -400.0UA
   417    3  -190.0UA     -400.0UA
   421    5  -190.0UA     -400.0UA
   425    9  -190.0UA     -400.0UA
   429   11  -190.0UA     -400.0UA
   433   13  -190.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.320MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.170MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N       9

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -470.0MV     -1.500 V      -100.0MV
    58    3  -470.0MV     -1.500 V      -100.0MV
    58    5  -470.0MV     -1.500 V      -100.0MV
    58    9  -470.0MV     -1.500 V      -100.0MV
    58   11  -470.0MV     -1.500 V      -100.0MV
    58   13  -470.0MV     -1.500 V      -100.0MV
    58   14  -510.0MV     -1.500 V      -100.0MV
    58    2  -580.0MV     -1.500 V      -100.0MV
    58    4  -580.0MV     -1.500 V      -100.0MV
    58    6  -580.0MV     -1.500 V      -100.0MV
    58    8  -580.0MV     -1.500 V      -100.0MV
    58   10  -580.0MV     -1.500 V      -100.0MV
    58   12  -580.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.190 V     -1.500 V
    85    3  -870.0MV     -1.500 V
    91    5  -910.0MV     -1.500 V
    97    9  -960.0MV     -1.500 V
   103   11  -860.0MV     -1.500 V
   109   13  -860.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.050 V      2.500 V
   200    4   3.060 V      2.500 V
   206    6   3.060 V      2.500 V
   212    8   3.060 V      2.500 V
   218   10   3.060 V      2.500 V
   224   12   3.060 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   264.0MV                   400.0MV
   250    4   240.0MV                   400.0MV
   256    6   246.0MV                   400.0MV
   262    8   244.0MV                   400.0MV
   268   10   268.0MV                   400.0MV
   274   12   246.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -40.60MA     -100.0MA      -20.00MA
   306    4  -42.80MA     -100.0MA      -20.00MA
   312    6  -42.10MA     -100.0MA      -20.00MA
   318    8  -41.90MA     -100.0MA      -20.00MA
   324   10  -39.90MA     -100.0MA      -20.00MA
   330   12  -42.60MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -190.0UA     -400.0UA
   417    3  -190.0UA     -400.0UA
   421    5  -190.0UA     -400.0UA
   425    9  -190.0UA     -400.0UA
   429   11  -190.0UA     -400.0UA
   433   13  -190.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.300MA                   2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.110MA                   6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N      10

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -450.0MV     -1.500 V      -100.0MV
    58    3  -450.0MV     -1.500 V      -100.0MV
    58    5  -450.0MV     -1.500 V      -100.0MV
    58    9  -450.0MV     -1.500 V      -100.0MV
    58   11  -440.0MV     -1.500 V      -100.0MV
    58   13  -440.0MV     -1.500 V      -100.0MV
    58   14  -480.0MV     -1.500 V      -100.0MV
    58    2  -550.0MV     -1.500 V      -100.0MV
    58    4  -550.0MV     -1.500 V      -100.0MV
    58    6  -550.0MV     -1.500 V      -100.0MV
    58    8  -550.0MV     -1.500 V      -100.0MV
    58   10  -550.0MV     -1.500 V      -100.0MV
    58   12  -550.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.200 V     -1.500 V
    85    3  -850.0MV     -1.500 V
    91    5  -890.0MV     -1.500 V
    97    9  -940.0MV     -1.500 V
   103   11  -850.0MV     -1.500 V
   109   13  -850.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.100 V      2.500 V
   200    4   3.100 V      2.500 V
   206    6   3.100 V      2.500 V
   212    8   3.100 V      2.500 V
   218   10   3.100 V      2.500 V
   224   12   3.110 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   260.0MV                   400.0MV
   250    4   236.0MV                   400.0MV
   256    6   240.0MV                   400.0MV
   262    8   276.0MV                   400.0MV
   268   10   258.0MV                   400.0MV
   274   12   240.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -40.00MA     -100.0MA      -20.00MA
   306    4  -41.80MA     -100.0MA      -20.00MA
   312    6  -41.20MA     -100.0MA      -20.00MA
   318    8  -38.30MA     -100.0MA      -20.00MA
   324   10  -38.90MA     -100.0MA      -20.00MA
   330   12  -41.60MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -180.0UA     -400.0UA
   417    3  -180.0UA     -400.0UA
   421    5  -180.0UA     -400.0UA
   425    9  -180.0UA     -400.0UA
   429   11  -180.0UA     -400.0UA
   433   13  -180.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.260MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.020MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N      11

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -460.0MV     -1.500 V      -100.0MV
    58    3  -460.0MV     -1.500 V      -100.0MV
    58    5  -450.0MV     -1.500 V      -100.0MV
    58    9  -460.0MV     -1.500 V      -100.0MV
    58   11  -450.0MV     -1.500 V      -100.0MV
    58   13  -450.0MV     -1.500 V      -100.0MV
    58   14  -490.0MV     -1.500 V      -100.0MV
    58    2  -570.0MV     -1.500 V      -100.0MV
    58    4  -560.0MV     -1.500 V      -100.0MV
    58    6  -570.0MV     -1.500 V      -100.0MV
    58    8  -570.0MV     -1.500 V      -100.0MV
    58   10  -560.0MV     -1.500 V      -100.0MV
    58   12  -560.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.220 V     -1.500 V
    85    3  -860.0MV     -1.500 V
    91    5  -940.0MV     -1.500 V
    97    9  -950.0MV     -1.500 V
   103   11  -850.0MV     -1.500 V
   109   13  -850.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.080 V      2.500 V
   200    4   3.080 V      2.500 V
   206    6   3.090 V      2.500 V
   212    8   3.090 V      2.500 V
   218   10   3.080 V      2.500 V
   224   12   3.090 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   262.0MV                   400.0MV
   250    4   238.0MV                   400.0MV
   256    6   244.0MV                   400.0MV
   262    8   254.0MV                   400.0MV
   268   10   256.0MV                   400.0MV
   274   12   242.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -41.30MA     -100.0MA      -20.00MA
   306    4  -43.60MA     -100.0MA      -20.00MA
   312    6  -42.50MA     -100.0MA      -20.00MA
   318    8  -41.80MA     -100.0MA      -20.00MA
   324   10  -40.70MA     -100.0MA      -20.00MA
   330   12  -43.20MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -190.0UA     -400.0UA
   417    3  -190.0UA     -400.0UA
   421    5  -190.0UA     -400.0UA
   425    9  -190.0UA     -400.0UA
   429   11  -190.0UA     -400.0UA
   433   13  -190.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.300MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.140MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

```
STAT1               08/20/11  04:50
TEST PROGRAM   4LS04         S/N      12

DDS-101-14-A PN 54LS04 ELECTRICAL TEST SEQ 14 +125C


 ----------------------------------------
            CONTINUITY TEST
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
    58    1  -470.0MV     -1.500 V      -100.0MV
    58    3  -460.0MV     -1.500 V      -100.0MV
    58    5  -470.0MV     -1.500 V      -100.0MV
    58    9  -460.0MV     -1.500 V      -100.0MV
    58   11  -460.0MV     -1.500 V      -100.0MV
    58   13  -460.0MV     -1.500 V      -100.0MV
    58   14  -510.0MV     -1.500 V      -100.0MV
    58    2  -580.0MV     -1.500 V      -100.0MV
    58    4  -580.0MV     -1.500 V      -100.0MV
    58    6  -580.0MV     -1.500 V      -100.0MV
    58    8  -580.0MV     -1.500 V      -100.0MV
    58   10  -580.0MV     -1.500 V      -100.0MV
    58   12  -580.0MV     -1.500 V      -100.0MV

VIK TEST  -1.5V MINIIN=-18MAVCC=4.5V

INST #  PIN   MEASURED        LT            GT
    79    1  -1.230 V     -1.500 V
    85    3  -860.0MV     -1.500 V
    91    5  -930.0MV     -1.500 V
    97    9  -960.0MV     -1.500 V
   103   11  -860.0MV     -1.500 V
   109   13  -860.0MV     -1.500 V

 ------------------------------------------------
            FUNCTIONAL  TEST
            VCC=    4.500
            VIH=        2      VIL=     700.0E-03
 ------------------------------------------------


 ----------------------------------------
            VOH TEST
            VCC=    4.500
            VOH LIMIT   2.500
----------------------------------------

INST #  PIN   MEASURED        LT            GT
   194    2   3.040 V      2.500 V
   200    4   3.050 V      2.500 V
   206    6   3.050 V      2.500 V
   212    8   3.050 V      2.500 V
   218   10   3.050 V      2.500 V
   224   12   3.050 V      2.500 V

 ----------------------------------------
            VOL TEST
            VCC=    4.500
            VOL LIMIT   400.0E-03
 ----------------------------------------

INST #  PIN   MEASURED        LT            GT
   244    2   264.0MV                   400.0MV
   250    4   242.0MV                   400.0MV
   256    6   248.0MV                   400.0MV
   262    8   254.0MV                   400.0MV
   268   10   262.0MV                   400.0MV
   274   12   246.0MV                   400.0MV
```

```
 ---------------------------------------------
            FUNCTIONAL  TEST
            VCC=    5.500
            VIH=        2      VIL=     700.0E-03
 ---------------------------------------------


IOS TEST   -20MA MIN, -100MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   300    2  -41.90MA     -100.0MA      -20.00MA
   306    4  -44.00MA     -100.0MA      -20.00MA
   312    6  -42.90MA     -100.0MA      -20.00MA
   318    8  -42.70MA     -100.0MA      -20.00MA
   324   10  -41.20MA     -100.0MA      -20.00MA
   330   12  -44.00MA     -100.0MA      -20.00MA

IIH TEST   20UA MAXVIN= 2.7VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   346    1  -100.0NA                   20.00UA
   350    3  -100.0NA                   20.00UA
   354    5  -100.0NA                   20.00UA
   358    9  -100.0NA                   20.00UA
   362   11  -100.0NA                   20.00UA
   366   13  -100.0NA                   20.00UA

II TEST   100UA MAXVIN=7.0VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   377    1  -100.0NA                  100.0UA
   381    3  -100.0NA                  100.0UA
   385    5  -100.0NA                  100.0UA
   389    9  -100.0NA                  100.0UA
   393   11  -100.0NA                  100.0UA
   397   13  -100.0NA                  100.0UA

IIL TEST  -400UA MAXVIN=0.4VVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   413    1  -190.0UA     -400.0UA
   417    3  -190.0UA     -400.0UA
   421    5  -190.0UA     -400.0UA
   425    9  -190.0UA     -400.0UA
   429   11  -190.0UA     -400.0UA
   433   13  -190.0UA     -400.0UA

ICC TEST OUTPUT HIGH   2.4MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   451   14   1.320MA                  2.400MA

ICC TEST OUTPUT LOW   6.6MA MAXVCC=5.5V

INST #  PIN   MEASURED        LT            GT
   462   14   4.180MA                  6.600MA


EIR 1........10    FCT     DCT
    0000000000     PASS    PASS    EOT
```

Scanning Electron Microscopy (SEM) analysis

TANDEX TEST LABS, INC.

15849 Business Ctr. Dr. Irwindale CA. 91706
Phone: (626)-962-7166 Fax: (626)-960-6896

SCANNING ELECTRON MICROSCOPE ANALYSIS

DIE DEVICES
TTL Job # DDS-101-14-W
Date: June 28, 2018
Part Number: 54LS04
Part Type: SCHOTTKY LOGIC MICROCIRCUIT
Lot: Lot# 700654 D/C: 1810 WFR# 11
Quantity: Eight (8)
Purchase Order: SS139

Submitted by: _____
Jason A. Salinas
DPA/MTS

Approved by: Deborah M. Gorham
Deborah M. Gorham
Quality Assurance

TANDEX TEST LABS TTL Job # DDS-101-14-W

Summary

Eight (8) Schottky Logic Microcircuit P/N: 54LS04 were submitted by Die Devices for Scanning Electron Microscopy Analysis. This Analysis was performed in accordance with Mil-Std-883, Method 2018.6 The devices were assigned sample number 1 through 8 by Tandex Test Labs.

1. **Plasma Etching** Carbon Tetraflouride Gas 92% and 8% Oxygen was used to remove the glassivation. This etching is destructive and uneven in the rates of glass removal in various areas of the die.

2. **SEM Inspection** was performed on all eight devices. All eight devices revealed adequate metallization coverage and met the requirements of MIL-STD-883, Method 2018.6. See DPA form on page 3 and figures 1 through 3, for typical photographs.

Conclusion: This lot is acceptable for use.

TANDEX TEST LABS TTL Job # DDS-101-14-W
SEM EXAMINATION

TTL Job No.	Part Number	Part Type	Date
DDS-101-14-W	54LS04	Schottly Logic Microcircuit	June 27, 2018
Lot Date Code: WFR# 11 Lot# 80393 D/C: 1810	Sample Qty. 8	Serial Numbers 1 - 8	Test Specifications Mil-Std-883 Method 2018.6
Misc. ID No.	Qty . Accept 8	Qty. Reject 0	Qty. Suspect 0

Notes:

S/N	Investigation Findings / Comments	A/R/S
1	No Anomalies	A
2	No Anomalies	A
3	No Anomalies	A
4	No Anomalies	A
5	No Anomalies	A
6	No Anomalies	A
7	No Anomalies	A
8	No Anomalies	A

Each sample was inspected for the general metallization condition at a magnification between 1,000 X and 6,000 X over 25% of the total metallization (unless specified differently). Each sample was inspected from four (4) viewing directions at a magnification between 5,000 X and 20,000 X

Inspection required Yes: X No: Devices constructed with expanded Metallization Yes: X No:

Sample Glassivated Yes: X No: Dual Level Metallization Yes: No: X

Glassivation Removed Using: PLASMA ETCHING

Beam accelerating voltage **10kV to 20kV** Viewing angle **45 deg**

Technician Stamp:

TANDEX TEST LABS TTL Job # DDS-101-14-W

Photodocumentation

TANDEX TEST LABS TTL Job # DDS-101-14-W

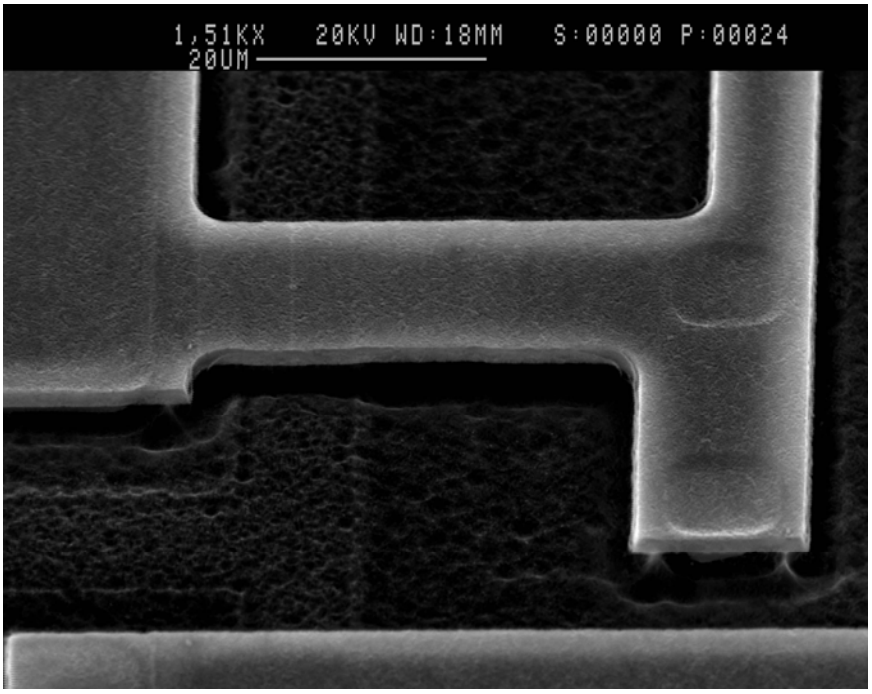

Fig: 1

Mag: 1,510X

S/N: 8

Description: SEM photograph of general metallization.

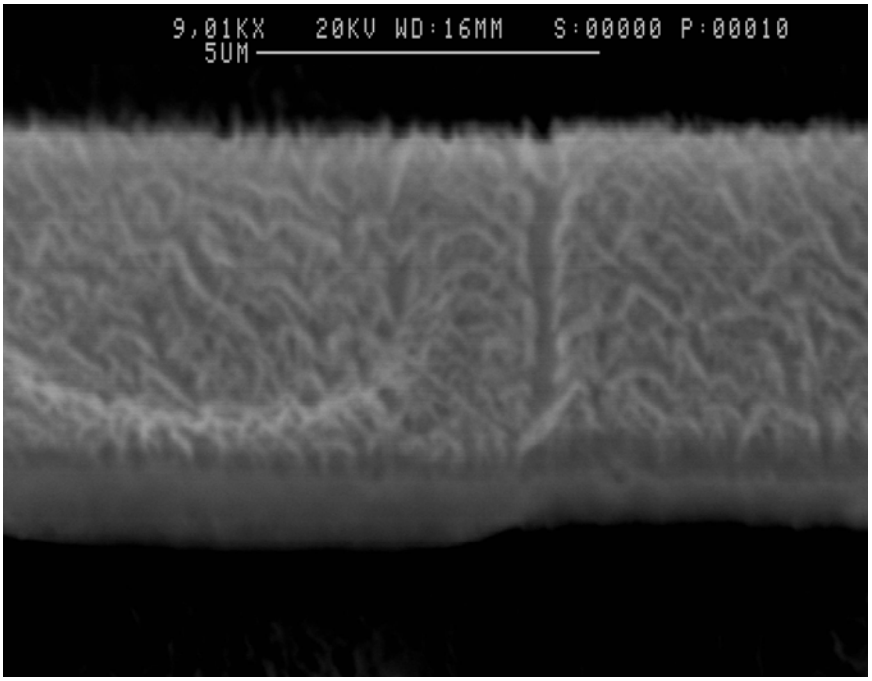

Fig: 2

Mag: 9,010X

S/N: 8

Description: SEM photograph of metallization typical step.

TANDEX TEST LABS TTL Job # DDS-101-14-W

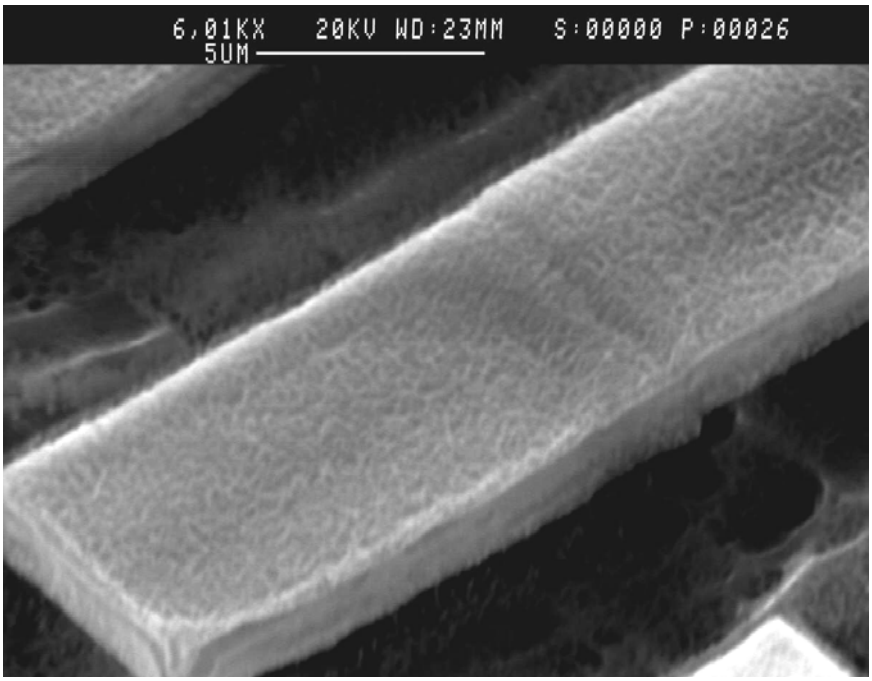

Fig: 3

Mag: 6,010X

S/N: 8

Description: SEM photograph of typical contact window device.

TANDEX TEST LABS, INC.
15849 Business Center. Dr., Irwindale CA. 91706
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http://www.tandexlabs.com
e-mail: via web site

Certificate of Conformance

CUSTOMER:	Silicon Supplies Limited 47 Wherry Road Norwich, NR1, 1WS United Kingdom Vat GB# 114 3513 56	DATE: June 28, 2018	
TEST REPORT:	DDS-101-14-W	QUANTITY REQUIRED:	8
P.O. NUMBER:	SS139	QUANTITY PROCESSED:	8
DESCRIPTION:	SCHOTTKY LOGIC MICROCIRCUIT	QUANTITY PASSED:	8
PART NUMBER(S):	54LS04	QUANTITY FAILED:	0
MFG PART NUMBER	54LS04	QUANTITY SHIPPING:	8
LOT / DATE CODE:	LOT# 700654 WFR# 11 D/C: 1810		
MFG:	SILICON SUPPLIES		

METHOD OF TESTING: MIL-STD-883 METHOD 2018.6

I hereby certify that the subject components have been processed and inspected in accordance with instructions with specifications referenced in your purchase order. Physical records and/or data pertinent to applicable military, proprietary, and/or commercial specifications are on file and available upon request for inspection at this facility.

Deborah M. Gorham QA TANDEX 2

Deborah M. Gorham
QUALITY ASSURANCE