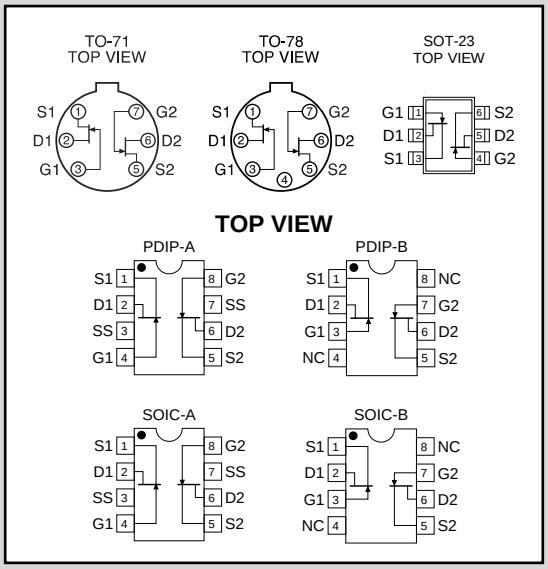
LINEAR SYSTEMS

Twenty-Five Years Of Quality Through Innovation

LS5911 LS5912 LS5912C

IMPROVED LOW NOISE WIDEBAND MONOLITHIC DUAL N-CHANNEL JFET AMPLIFIER

FEATURES	
Improved Replacement for SILICONIX, FAIRCHILD, & NATIONAL: 2N5911 & 2N5912	
LOW NOISE (10kHz)	e_n ~ 4nV/√Hz
HIGH TRANSCONDUCTANCE (100MHz)	g_{fs} ≥ 4000µS
ABSOLUTE MAXIMUM RATINGS[1] @ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-55 to +150 °C
Operating Junction Temperature	-55 to +150 °C
Maximum Power Dissipation	
Continuous Power Dissipation (Total)[4]	500mW
Maximum Currents	
Gate Current	50mA
Maximum Voltages	
Gate to Drain	-25V
Gate to Source	-25V



MATCHING ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	TYP	LS5911		LS5912		LS5912C		UNIT	CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
$\lvert V_{GS1} - V_{GS2} \rvert$	Differential Gate to Source Cutoff Voltage			10		15		40	mV	V_{DG} = 10V, I_D = 5mA
$\frac{\Delta \lvert V_{GS1} - V_{GS2} \rvert}{\Delta T}$	Differential Gate to Source Cutoff Voltage Change with Temperature			20		40		40	µV/°C	V_{DG} = 10V, I_D = 5mA T_A = -55 to +125°C
$\frac{I_{DSS1}}{I_{DSS2}}$	Gate to Source Saturation Current Ratio		0.95	1	0.95	1	0.95	1		V_{DS} = 10V, V_{GS} = 0V Notes 2, 3
$\lvert I_{G1} - I_{G2} \rvert$	Differential Gate Current			20		20		20	nA	V_{DG} = 10V, I_D = 5mA T_A = +125°C
$\frac{g_{fs1}}{g_{fs2}}$	Forward Transconductance Ratio		0.95	1	0.95	1	0.95	1		V_{DS} = 10V, I_D = 5mA *f* = 1kHz[3]
CMRR	Common Mode Rejection Ratio	85							dB	V_{DG} = 5V to 10V I_D = 5mA

STATIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

SYM.	CHARACTERISTIC	TYP	LS5911		LS5912		LS5912C		UNIT	CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
BV_{GSS}	Gate to Source Breakdown		-25		-25		-25		V	I_G = -1µA, V_{DS} = 0V
$V_{GS(off)}$	Gate to Source Cutoff Voltage		-1	-5	-1	-5	-1	-5		V_{DS} = 10V, I_D = 1nA
$V_{GS(F)}$	Gate to Source Forward Voltage	0.7								I_G = 1mA, V_{DS} = 0V
V_{GS}	Gate to Source Voltage		-0.3	-4	-0.3	-4	-0.3	-4		V_{DG} = 10V, I_G = 5mA
I_{DSS}	Drain to Source Saturation		7	40	7	40	7	40	mA	V_{DS} = 10V, V_{GS} = 0V
I_{GSS}	Gate Leakage Current	-1		-50		-50		-50	pA	V_{GS} = -15V, V_{DS} = 0V
I_G	Gate Operating Current	-1		-50		-50		-50		V_{DG} = 10V, I_D = 5mA
IG1G2	Gate to Gate Isolation Current			±1		±1		±1	uA	V_{G1}-V_{G2}=±25V_{ID} = I_S = 0

Linear Integrated Systems

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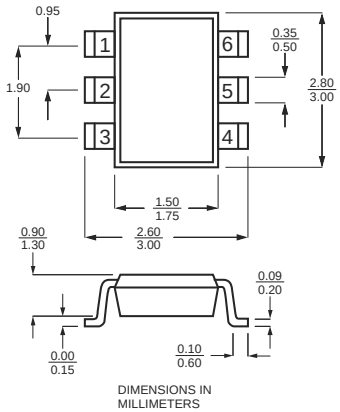
Doc 201132 05/15/14 Rev#A7 ECN# LS5911 LS5912 LS5912C

DYNAMIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

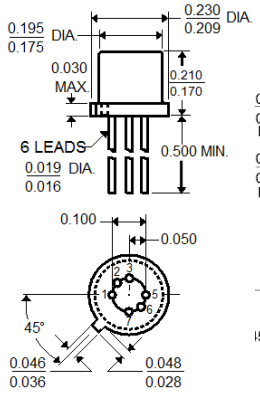
SYM.	CHARACTERISTIC		TYP	LS5911		LS5912		LS5912C		UNIT	CONDITIONS
				MIN	MAX	MIN	MAX	MIN	MAX		
g_{fs}	Forward Transconductance	f = 1kHz		4000	10000	4000	10000	4000	10000	µS	V_{DG} = 10V, I_D = 5mA
		f = 100MHz	7000								
g_{os}	Output Conductance	f = 1kHz			100		100		100		
		f = 100MHz	120								
C_{iss}	Input Capacitance				5		5		5	pF	V_{DG} = 10V, I_D = 5mA f = 1MHz
C_{rss}	Reverse Transfer Capacitance				1.2		1.2		1.2		
NF	Noise Figure				1		1		1	dB	V_{DG} = 10V, I_D = 5mA f = 10kHz, R_G = 100KΩ
e_n	Equivalent Input Noise Voltage	f = 100Hz	7		20		20		20	nV/√Hz	V_{DG} = 10V, I_D = 5mA f = 100Hz
		f = 10kHz	4		10		10		10	nV/√Hz	V_{DG} = 10V, I_D = 5mA f = 10kHz

SOT-23



DIMENSIONS IN MILLIMETERS

TO-71 Six Lead



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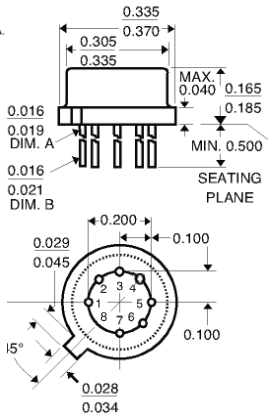
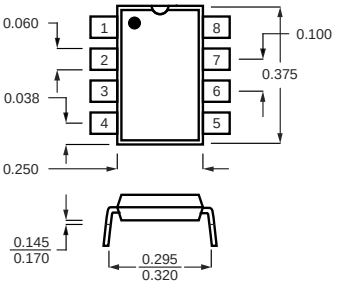
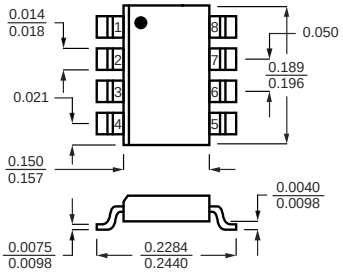


PDIP



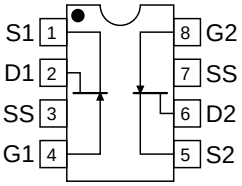
DIMENSIONS IN INCHES

SOIC

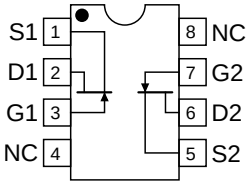


DIMENSIONS IN INCHES

PDIP-A



PDIP-B



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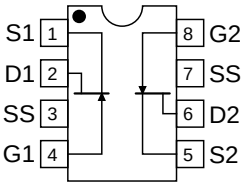

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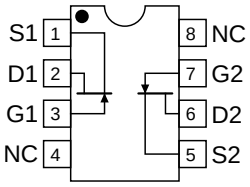

Please contact the factory regarding the availability of optional packages.

NOTES

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulse Test: PW ≤ 300μs Duty Cycle ≤ 3%
3. Assumes smaller value in numerator.
4. Derate 4mW/°C above 25°C.

Linear Integrated Systems (LIS) is a 25-year-old, third-generation precision semiconductor company providing high-quality discrete components. Expertise brought to LIS is based on processes and products developed at Amelco, Union Carbide, Intersil and Micro Power Systems by company President John H. Hall. Hall, a protégé of Silicon Valley legend Dr. Jean Hoerni, was the director of IC Development at Union Carbide, Co-Founder and Vice President of R&D at Intersil, and Founder/President of Micro Power Systems.