



1200V 15A SiC Schottky Diode - SiS1200S15AS

Rev 1.0
30/10/23

Silicon Carbide Schottky Barrier Rectifier diode in bare die form

Features:

- Capable of high temperature operation $\geq 175^{\circ}\text{C}$
- High Frequency Operation
- High Surge Current Capability
- No Reverse Recovery / No Forward Recovery
- Positive Temperature Coefficient

Ordering Information:

The following part suffixes apply:

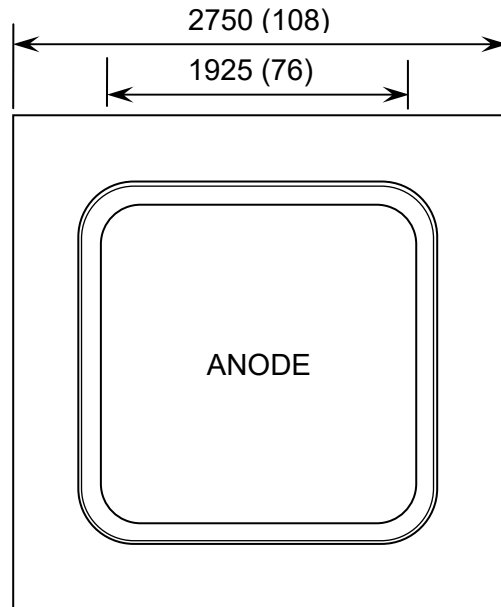
- No suffix - MIL-STD-750 /2073 Visual Inspection
- "H" - MIL-STD-750 /2073 Visual Inspection
+ MIL-PRF-38534 Class H LAT
- "K" - MIL-STD-750 /2073 Visual Inspection
+ MIL-PRF-38534 Class K LAT

LAT = Lot Acceptance Test.

For further information on LAT process flows see below.

www.siliconsupplies.com/quality/bare-die-lot-qualification

Die Dimensions in μm (mils)



CHIP BACKSIDE IS CATHODE

Supply Formats:

- Default – Die in Waffle Pack (400 per tray capacity)
- Sawn Wafer on Tape – By specific request
- Unsawn Wafer – By specific request
- With additional electrical selection – By specific request

Mechanical Specification

Die Size (Unsawn)	2750 x 2750 108 x 108	μm mils
Anode Pad Size	1925 x 1925 76 x 76	μm mils
Die Thickness	350 (± 20) 13.78 (0.79)	μm mils
Top Metal Composition	Al 4 μm	
Back Metal Composition	Ag 0.4 μm	





1200V 15A SiC Schottky Diode - SiS1200S15AS

Rev 1.0
30/10/23

Absolute Maximum Ratings $T_J = 25^\circ\text{C}$ unless otherwise stated

PARAMETER	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage	V_{RRM}	1200	V
Surge peak reverse voltage	V_{RSM}	1200	V
DC Peak Blocking Voltage	V_{BR}	1200	V
Average forward rectified current	$I_{F(AV)}$	15	A
Repetitive Peak Forward Surge Current	I_{FRM}	68	A
Peak Single-Cycle Non-Repetitive Surge Current	I_{FSM}	130	A
Operating Junction temperature	T_J	-55 to 175	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to 175	$^\circ\text{C}$

Electrical Characteristics $T_J = 25^\circ\text{C}$ unless otherwise stated

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Maximum instantaneous forward voltage ¹	V_{F1}	$V_{RRM} = 1200\text{V}, I_{FM} = 15\text{A}$	-	1.50	1.80	V
	V_{F2}	$V_{RRM} = 1200\text{V}, I_{FM} = 15\text{A}, T_J = 175^\circ\text{C}$	-	2.20	3.00	
Maximum reverse leakage current ¹	$I_{RM} @ V_{RM}$	$V_R = 1200\text{V}$	-	3	40	μA
		$V_R = 1200\text{V}, T_J = 175^\circ\text{C}$	-	10	50	
Junction Capacitance	C_T	$V_R = 0\text{V}, f = 1\text{MHz}$	-	990	-	pF
Reverse Recovery Charge	Q_C	$V_R = 800\text{V}, I_F = 15\text{A}, di/dt = 200\text{A}/\mu\text{s}$	-	76.32	-	nC
Capacitance Stored Energy	E_C	$V_R = 800\text{V}$	-	39.24	-	μJ

1. Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$

Typical Characteristics $T_J = 25^\circ\text{C}$ unless otherwise stated

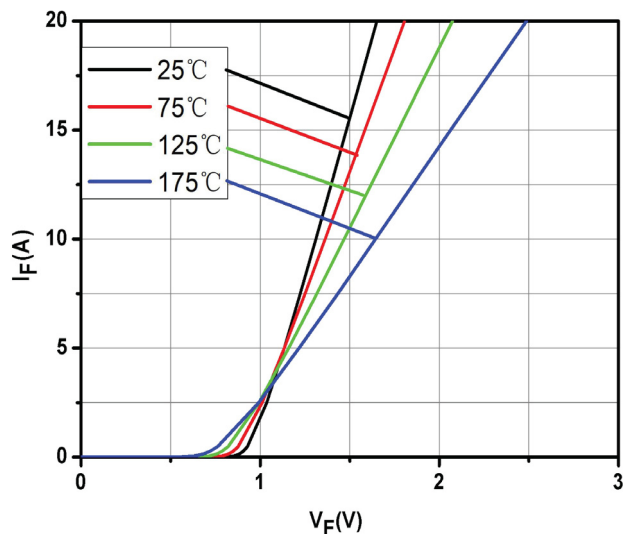


FIGURE 1. Forward Voltage Characteristics

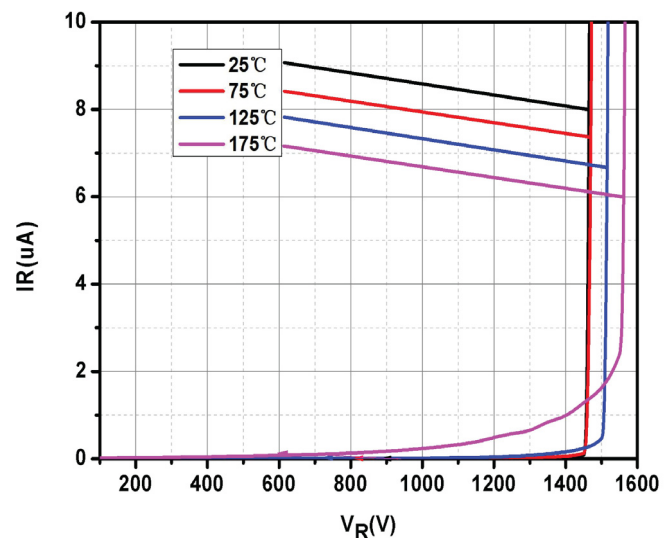


FIGURE 2. Reverse Characteristics





1200V 15A SiC Schottky Diode - SiS1200S15AS

Rev 1.0
30/10/23

Typical Characteristics $T_J = 25^\circ\text{C}$ unless otherwise stated

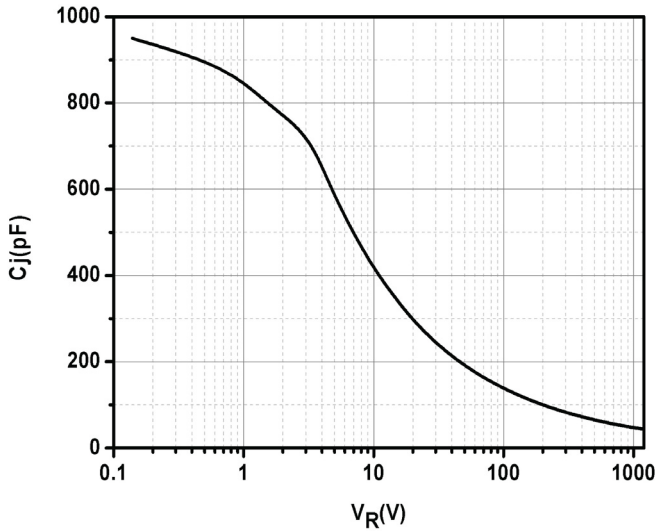


FIGURE 3. Capacitance Versus Reverse Voltage

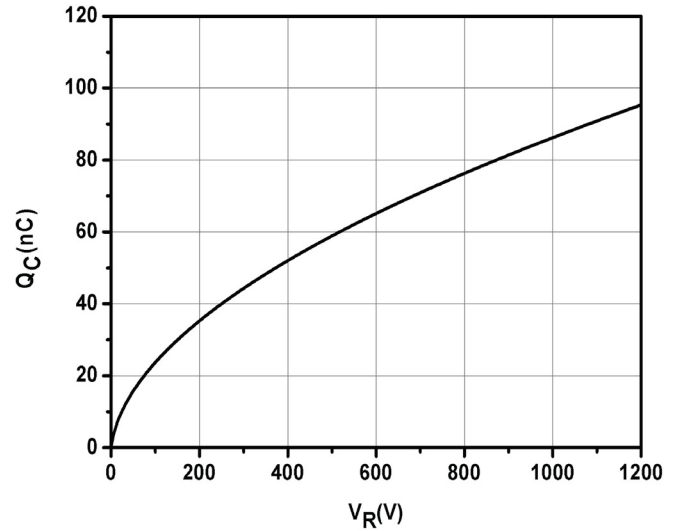


FIGURE 4. Total Capacitance Charge Versus Reverse Voltage

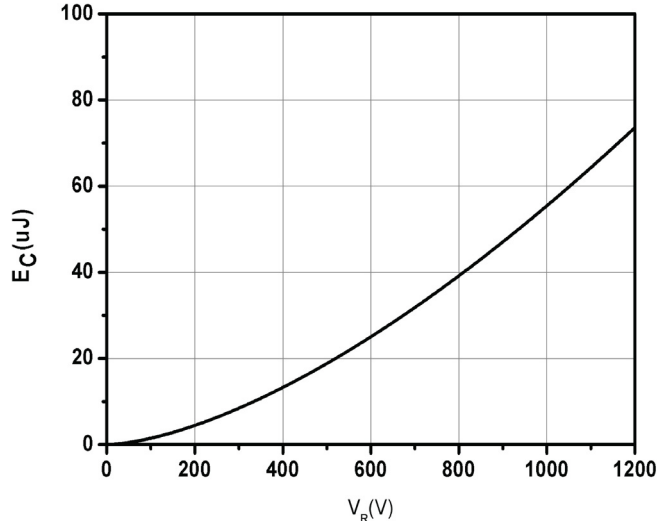


FIGURE 5. Capacitance Stored Energy

DISCLAIMER: The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Silicon Supplies Ltd hereby disclaims any and all warranties and liabilities of any kind.

LIFE SUPPORT POLICY: Silicon Supplies Ltd components may be used in life support devices or systems only with the express written approval of Silicon Supplies Ltd, if a failure of such components can reasonably be expected to cause the failure of that life support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.

