



THE DATASHEET OF S8MC-13



Product Summary @ $T_A = +25^{\circ}\text{C}$

V_{RRM} (V)	I_o (A)	V_F (V)	I_R (μA)
800, 1000	8	0.985	10

Features and Benefits

- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 200A Peak
- Ideally Suited for Automated Assembly
- **Lead Free Finish/RoHS Compliant (Note 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Description and Applications

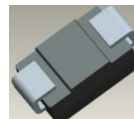
8.0A Surface Mount Glass Passivated Rectifier in SMC package, offers high current capability and low forward voltage drop, designed with Guard Ring for Transient Protection and high surge capacity.

Mechanical Data

- Case: SMC
- Case Material: Molded Plastic.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 **(e3)**
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.21 grams (Approximate)



Top View



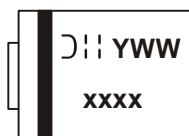
Bottom View

Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
S8xC-13	Commercial	SMC	3,000/Tape & Reel

*x = Device type, e.g. S8MC-13.

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information


- xxxx = Product type marking code, ex: S8KC
- DII = Manufacturers' code marking
- YWW = Date code marking
- Y = Last digit of year (ex: 7 for 2007)
- WW = Week code 01 to 52

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

Characteristic	Symbol	S8KC	S8MC	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	800	1,000	V
RMS Reverse Voltage	V _{R(RMS)}	560	700	V
Average Rectified Output Current @ T _T = +75°C	I _O	8.0		A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	200		A
Non-Repetitive Peak Forward Surge Current, 1.0ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	450		A
I ² t Rating for fusing (t < 8.3ms)	I ² t	166		A ² S

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Terminal (Note 6)	R _{θJT}	10	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Minimum Reverse Breakdown Voltage @ I _R = 10μA	V _{(BR)R}	S8MC 1,000 S8KC 800	V
Maximum Forward Voltage @ I _F = 8.0A	V _{FM}	0.985	V
Peak Reverse Current @ T _A = +25°C @ T _A = +125°C	I _{RM}	10 250	μA
Typical Reverse Recovery Time (Note 7)	T _{RR}	2,700	ns
Typical Total Capacitance (Note 5)	C _T	45	pF

Note: 5. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
6. Thermal resistance junction to terminal, device mounted on 100.5mm x 102.5mm x 1.7mm Cu plate heatsink.
7. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A.

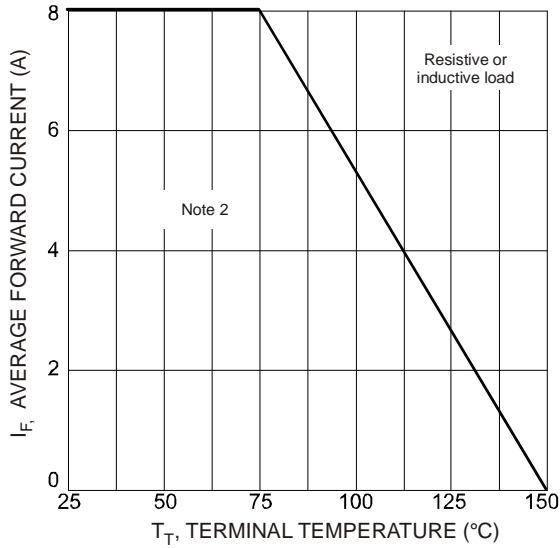


Fig. 1 Forward Current Derating Curve

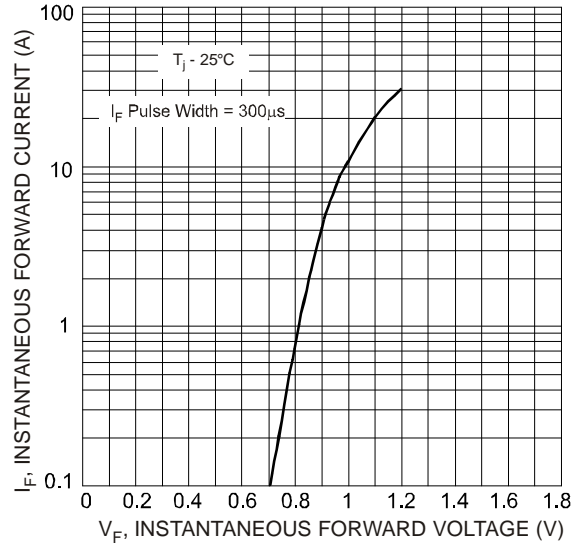


Fig. 2 Typical Forward Characteristics

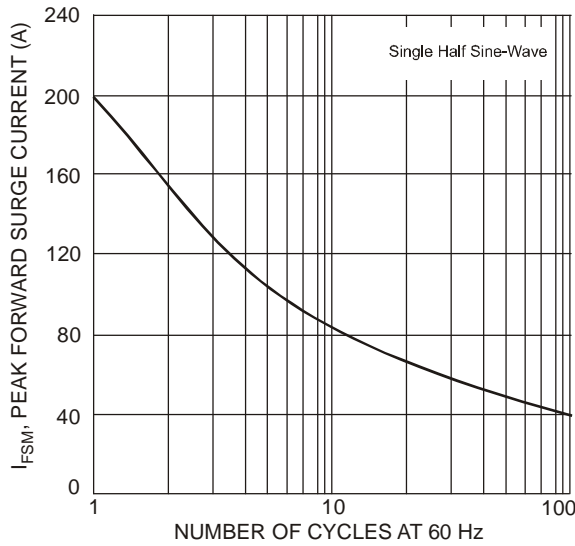


Fig. 3 Forward Surge Current Derating Curve

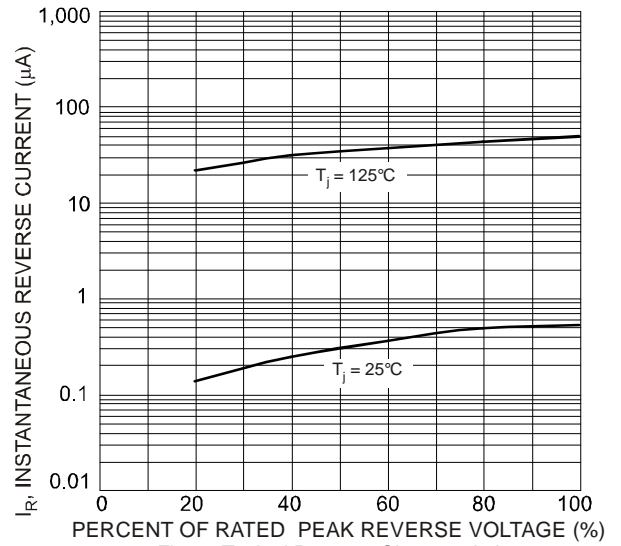
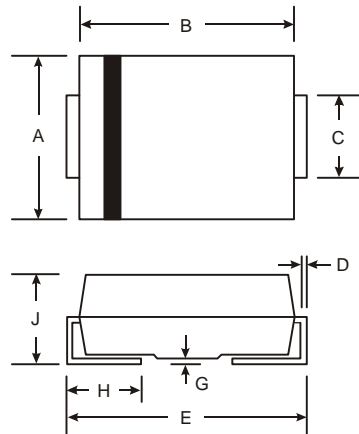


Fig. 4 Typical Reverse Characteristics

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

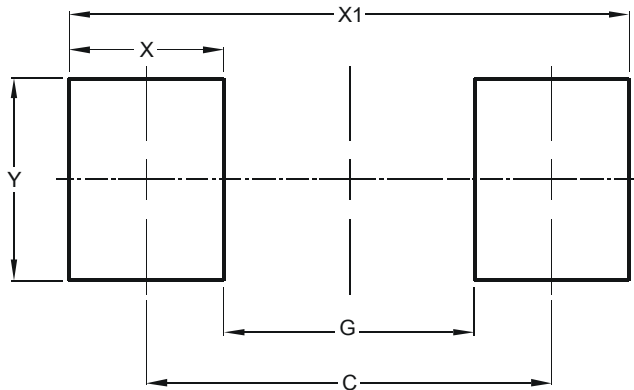


SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.50

All Dimensions in mm

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.



Dimensions	Value (in mm)
C	6.80
G	4.40
X	2.50
X1	9.40
Y	3.30

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