

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

$V_{RRM}$ (V)	$I_o$ (A)	$V_F$ (V)	$I_R$ ( $\mu\text{A}$ )
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**

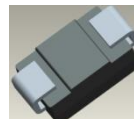
8.0A Surface Mount Glass Passivated Rectifier in SMC package, offers high current capability and low forward voltage drop, designed with Guard Ring for Transient Protection and high surge capacity.

**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



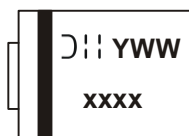
Bottom View

**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](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<sub>A</sub> = +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	V <sub>RRM</sub>	800	1,000	V
Working Peak Reverse Voltage	V <sub>RWM</sub>			
DC Blocking Voltage	V <sub>R</sub>			
RMS Reverse Voltage	V <sub>R(RMS)</sub>	560	700	V
Average Rectified Output Current @ T <sub>T</sub> = +75°C	I <sub>O</sub>	8.0		A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	200		A
Non-Repetitive Peak Forward Surge Current, 1.0ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	450		A
I <sup>2</sup> t Rating for fusing (t < 8.3ms)	I <sup>2</sup> t	166		A <sup>2</sup> S

**Thermal Characteristics**

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

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	
Minimum Reverse Breakdown Voltage @ I <sub>R</sub> = 10μA	V <sub>(BR)R</sub>	S8MC S8KC	1,000 800	V
Maximum Forward Voltage @ I <sub>F</sub> = 8.0A	V <sub>FM</sub>	0.985		V
Peak Reverse Current @ T <sub>A</sub> = +25°C	I <sub>RM</sub>	10		μA
@ T <sub>A</sub> = +125°C		250		
Typical Reverse Recovery Time (Note 7)	T <sub>RR</sub>	2,700		ns
Typical Total Capacitance (Note 5)	C <sub>T</sub>	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<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A.

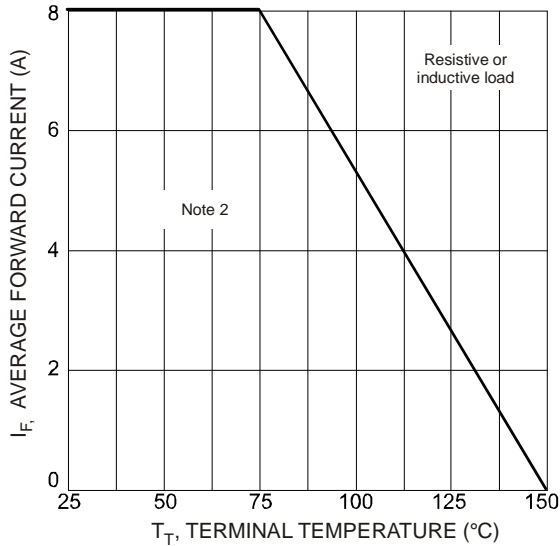


Fig. 1 Forward Current Derating Curve

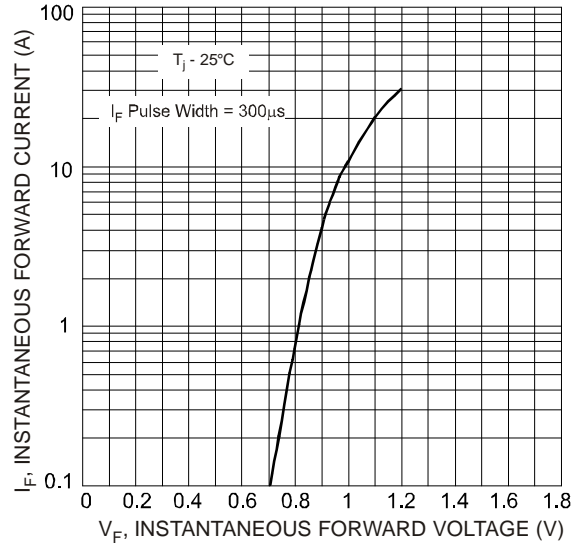


Fig. 2 Typical Forward Characteristics

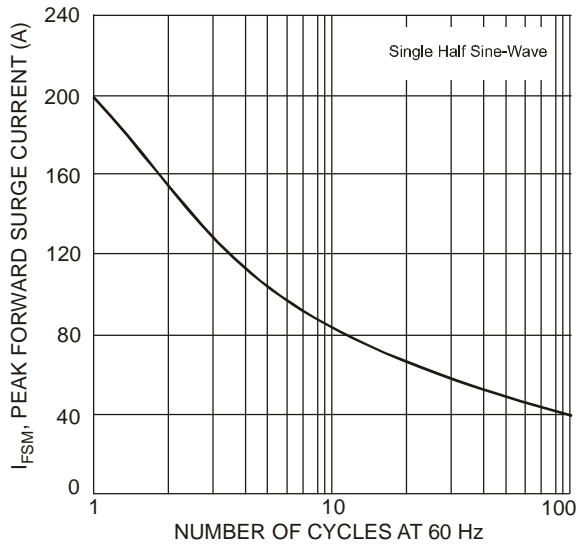


Fig. 3 Forward Surge Current Derating Curve

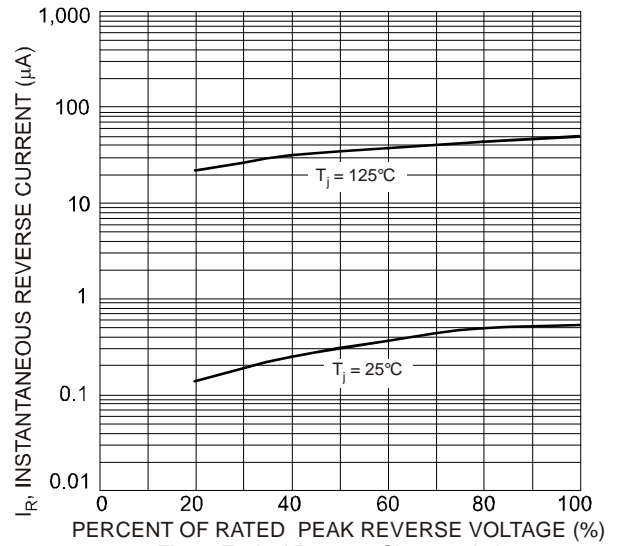
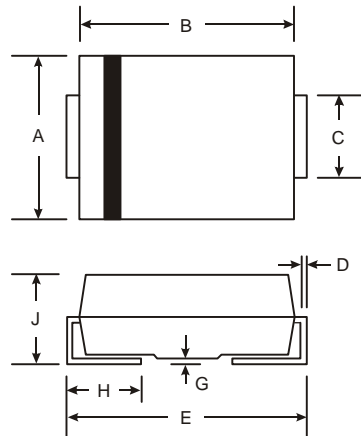


Fig. 4 Typical Reverse Characteristics

## Package Outline Dimensions

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

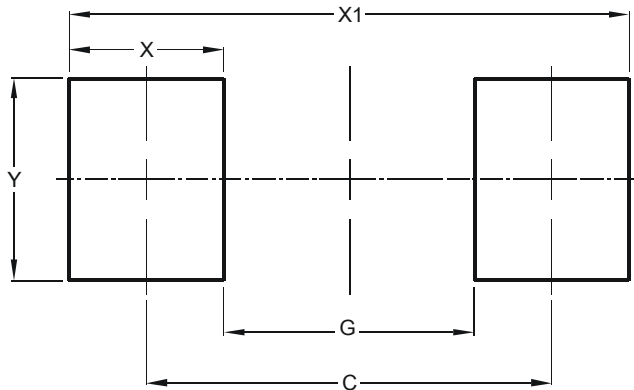


SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.50

All Dimensions in mm

## Suggested Pad Layout

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



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

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