8.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER

Product Summary @T_A = +25°C

V_{RRM} (V)	I_O (A)	V_F (V)	I_R (μA)
1200	8	1.1	10

Features and Benefits

- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 225A Peak
- High Reverse Breakdown Voltage of 1200V
- **Lead-Free Finish/RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

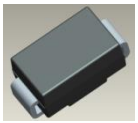
Description and Applications

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.

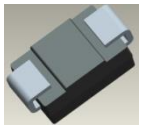
- Power Supplies

Mechanical Data

- Case: SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Alloy Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Weight: 0.26 grams (Approximate)



Top View



Bottom View

Ordering Information (Note 4)

Part Number	Case	Packaging
S8NC-13	SMC	3,000/Tape & Reel

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

S8NC = Product Type Marking Code
= Manufacturers' Code Marking
YWW = Date Code Marking
Y = Last Digit of Year (ex: 4 for 2014)
WW = Week Code 01 to 53

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	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	1200	V
RMS Reverse Voltage	$V_{R(RMS)}$	850	V
Average Rectified Output Current @ T_T = +25°C	I_O	8.0	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	225	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Terminal (Note 5)	$R_{\theta JT}$	10.4	°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	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	1200	—	—	V	I_R = 10μA
Forward Voltage	V_F	—	0.98 0.885	1.1 1.0	V	I_F = 8.0A, T_A = +25°C I_F = 8.0A, T_A = +125°C
Leakage Current (Note 7)	I_R	— —	0.22 20	10 500	μA	V_R =1200V, T_A = +25°C V_R =1200V, T_A = +125°C
Total Capacitance (Note 8)	C_T	—	40	—	pF	V_R = 4V, f =1.0MHz

Notes:
5. The device has two heat sinks of size 20mm * 70mm attached to each terminal (i.e. four heat sinks total).
6. Device mounted on FR-4 substrate, 0.4in. * 0.5in. 2oz single-sided, PC board with 0.2in. * 0.25in. copper pads.
7. Short duration pulse test used to minimize self-heating effect.
8. Measured at f = 1.0MHz and applied reverse voltage of VR=4.0V DC.

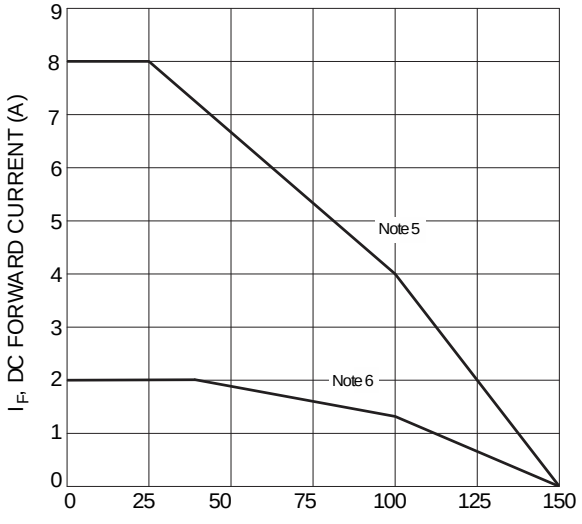


Figure 1 Forward Current Derating

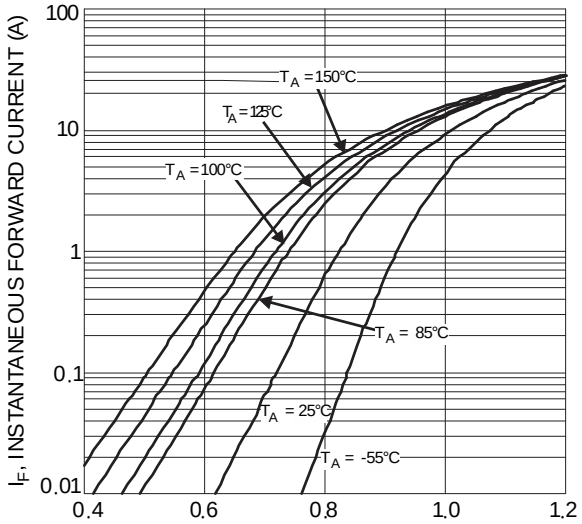


Figure 2 Typical Forward Characteristics

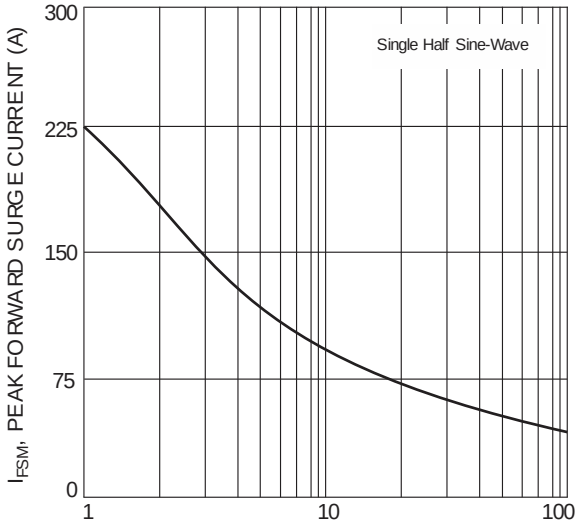


Figure 3 Forward Surge Current Derating Curve

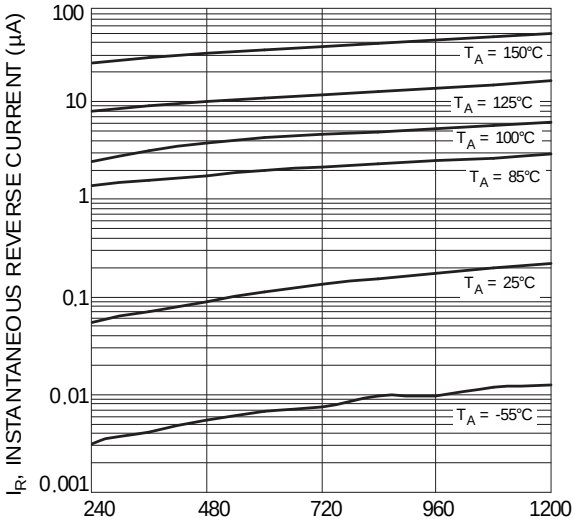


Figure 4 Typical Reverse Characteristics

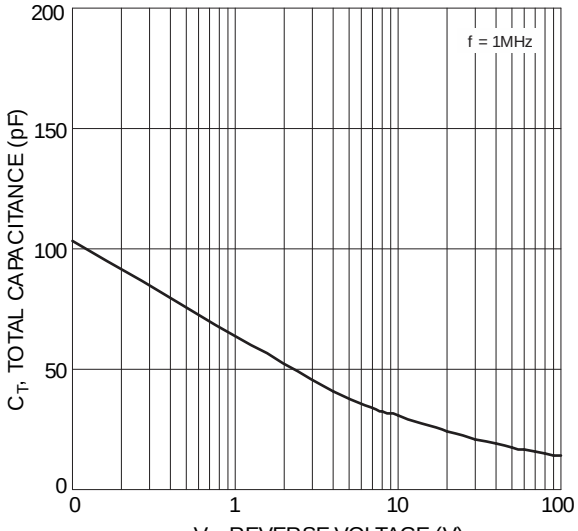


Figure 5 Total Capacitance vs. Reverse Voltage

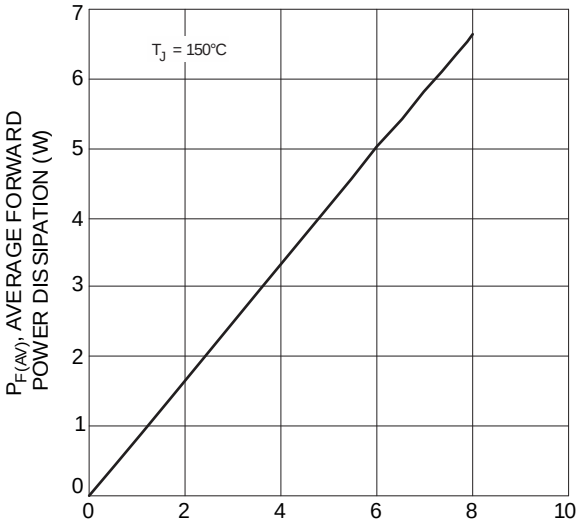
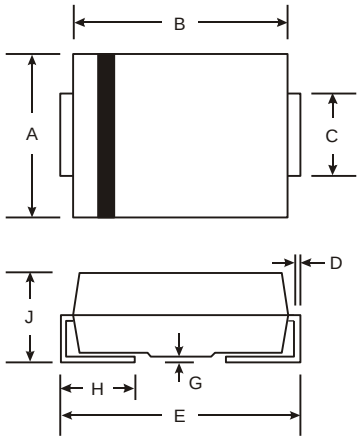


Figure 6 Forward Power Dissipation

Package Outline Dimensions

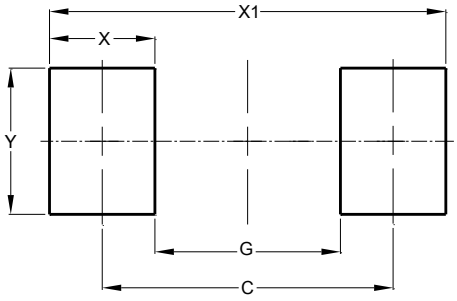
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



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 AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
C	6.90
G	4.40
X	2.50
X1	9.40
Y	3.30