

8.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER
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 |

Description and Applications

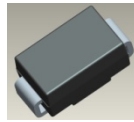
8.0 A Surface Mount Glass Passivated Rectifier in SMC package, offers high current capability and low forward voltage drop, designed with Guard Ring for Transient Protection and high surge capacity.

Features and Benefits

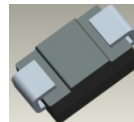
- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 200A Peak
- Ideally Suited for Automated Assembly
- **Lead Free Finish/RoHS Compliant (Note 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

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
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.21 grams (approximate)



Top View



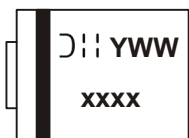
Bottom View

Ordering Information (Note 5)

| Part Number | Case | Packaging |
|-------------|------|------------------|
| S8xC-13 | SMC | 3000/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. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>

Marking Information


xxxx = Product type marking code, ex: S8KC
 YWW = 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 | V _{RRM} | 800 | 1000 | V |
| Working Peak Reverse Voltage | V _{RWM} | | | |
| DC Blocking Voltage | V _R | | | |
| 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 |

Note: 6. Thermal resistance junction to terminal, device mounted on 100.5mm x 102.5mm x 1.7mm Cu plate heatsink.

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

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------|------|
| Forward Voltage @ I _F = 8.0A | V _{FM} | 0.985 | V |
| Peak Reverse Current @ T _A = +25°C | I _{RM} | 10 | μA |
| @ T _A = +125°C | | 250 | |
| Typical Total Capacitance (Note 5) | C _T | 40 | pF |

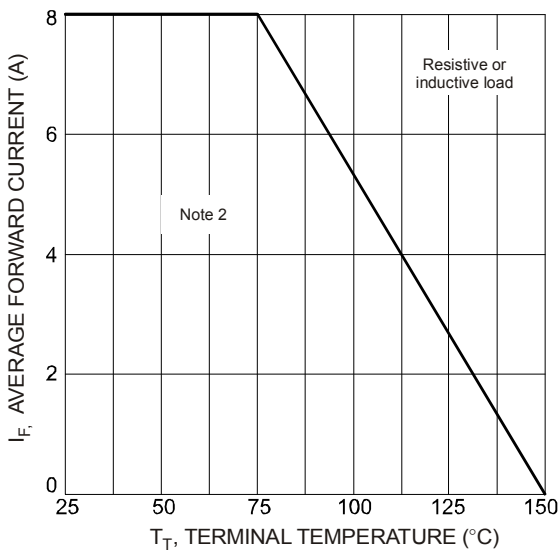


Fig. 1 Forward Current Derating Curve

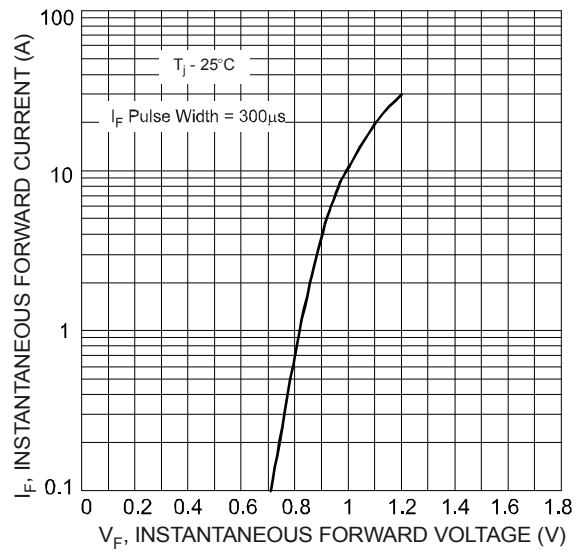


Fig. 2 Typical Forward Characteristics

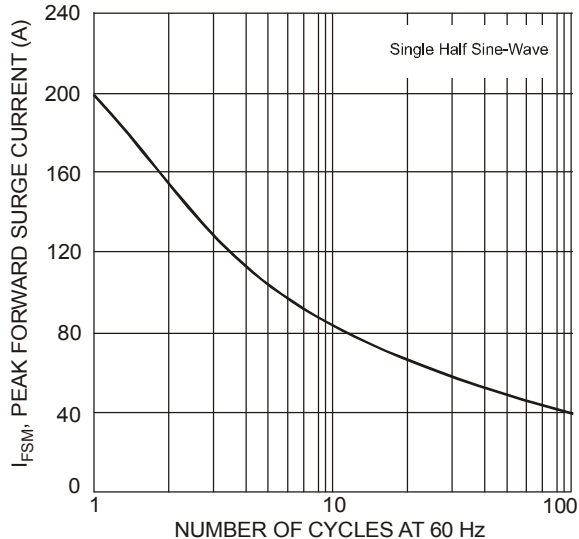


Fig. 3 Forward Surge Current Derating Curve

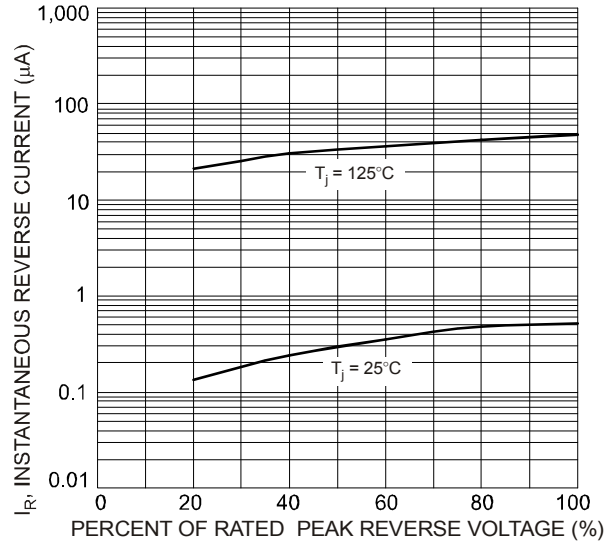
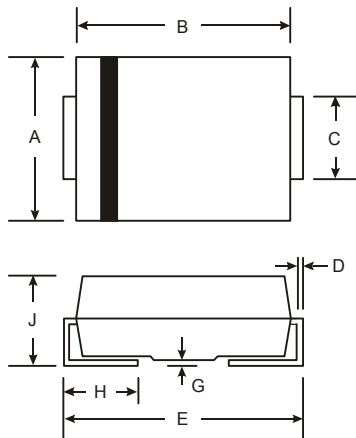


Fig. 4 Typical Reverse Characteristics

Package Outline Dimensions

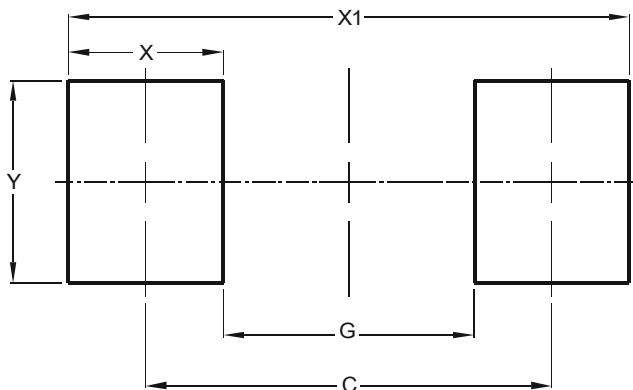
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



| 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 | 6.80 |
| G | 4.40 |
| X | 2.50 |
| X1 | 9.40 |
| Y | 3.30 |

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