

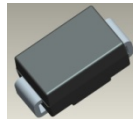
3.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER

Features

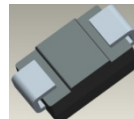
- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 100A Peak
- Ideally Suited for Automated Assembly
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SMB/SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band or Cathode Notch
- Weight: SMB 0.093 grams (approximate)
SMC 0.21 grams (approximate)



Top View



Bottom View

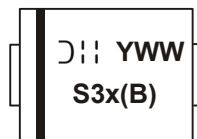
Ordering Information* (Note 4)

| Part Number | Compliance | Case | Packaging |
|-------------|------------|------|------------------|
| S3xB-13-F | Standard | SMB | 3000/Tape & Reel |
| S3x-13-F | Standard | SMC | 3000/Tape & Reel |

*x = Device type, e.g. S3AB-13-F (SMB package); S3A-13-F (SMC Package).

- 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



S3x = Product Type Marking Code, ex. S3K (SMC)
 S3xB = Product Type Marking Code, ex. S3KB (SMB)
 DII = Manufacturers' code marking
 YWW = Date code marking
 Y = Last digit of year (ex: 14 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 S | ymbol | S3 A/AB | S3 B/BB | S3 D/DB | S3 G/GB | S3 J/JB | S3 K/KB | S3 M/MB | Unit |
|---|--|---------|---------|---------|---------|---------|---------|---------|------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 30 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Average Rectified Output Current @ T _T = +75°C | I _O | 3.0 | | | | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 100 A | | | | | | | |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Terminal (Note 5) | 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 |
|--|-----------------|-----------|------|
| Forward Voltage @ I _F = 3.0A | V _{FM} | 1.15 | V |
| Peak Reverse Current @ T _A = +25°C at Rated DC Blocking Voltage @ T _A = +125 °C | I _{RM} | 10 250 | μA |
| Typical Total Capacitance (Note 6) | C _T | 40 | pF |

Notes: 5. Thermal resistance: Junction to Terminal, unit mounted on PC board with 5.0 mm² (0.013 mm thick) copper pad as heat sink.
6. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.

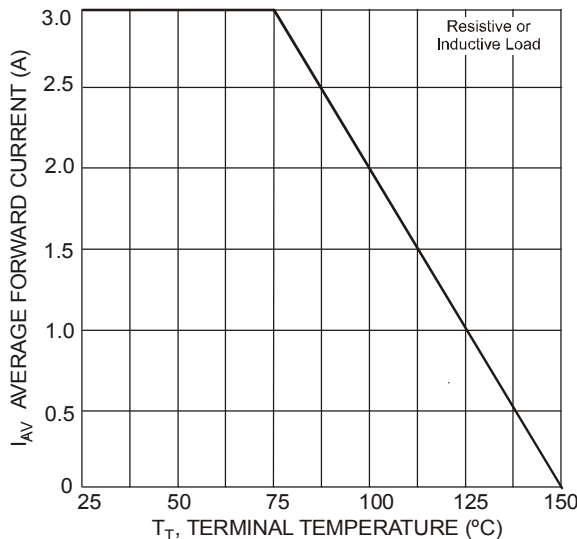


Fig. 1 Forward Current Derating Curve

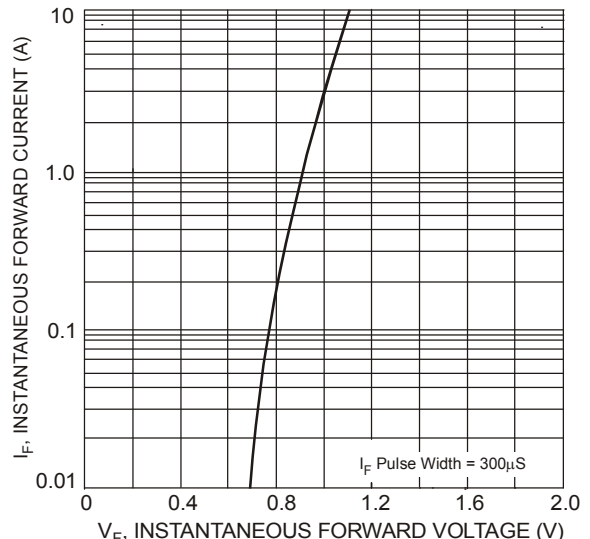


Fig. 2 Typical Forward Characteristics

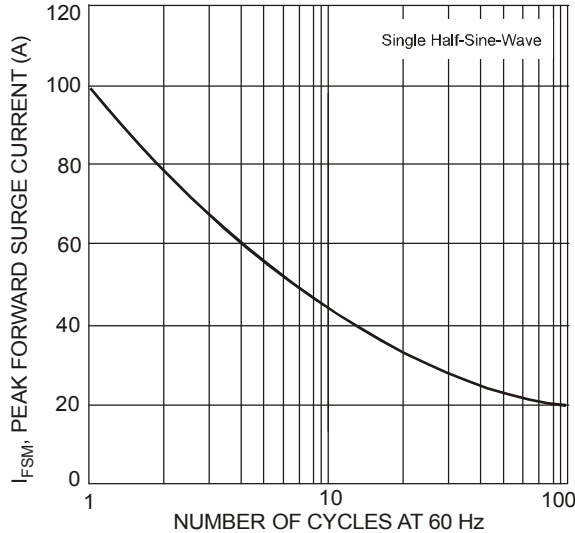


Fig. 3 Forward Surge Current Derating Curve

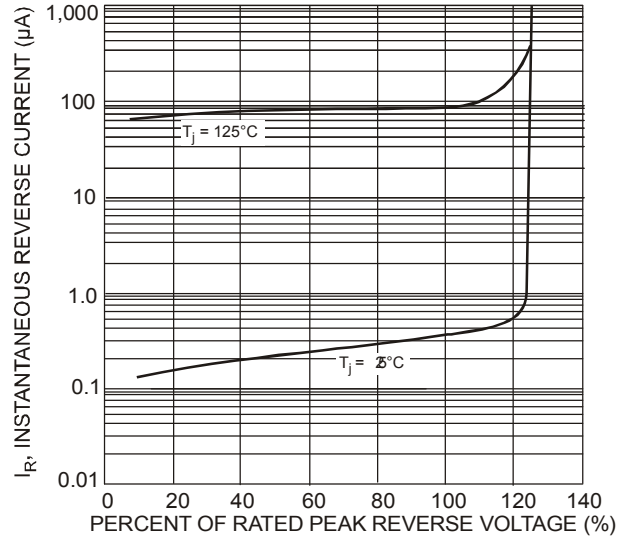
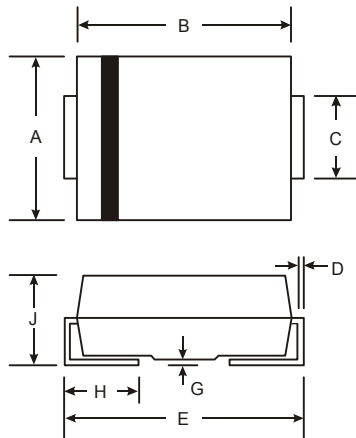


Fig. 4 Typical Reverse Characteristics

Package Outline Dimensions

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



| SMB | | |
|-----|------|------|
| Dim | Min | Max |
| A | 3.30 | 3.94 |
| B | 4.06 | 4.57 |
| C | 1.96 | 2.21 |
| D | 0.15 | 0.31 |
| E | 5.00 | 5.59 |
| G | 0.05 | 0.20 |
| H | 0.76 | 1.52 |
| J | 2.00 | 2.50 |

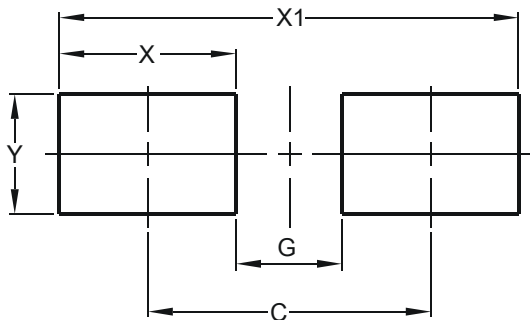
All Dimensions in mm

| 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.



| SMB | |
|------------|---------------|
| Dimensions | Value (in mm) |
| C | 4.30 |
| G | 1.80 |
| X | 2.50 |
| X1 | 6.80 |
| Y | 2.30 |

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

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