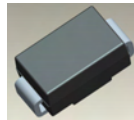


**1.5A SURFACE MOUNT GLASS PASSIVATED RECTIFIER**
**Features**

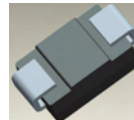
- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 50A Peak
- Ideally Suited for Automated Assembly
- **Lead Free Finish/RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 2)**

**Mechanical Data**

- Case: SMA/SMB
- 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 @3
- Polarity: Cathode Band or Cathode Notch
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: SMA 0.064 grams (approximate)  
SMB 0.093 grams (approximate)



Top View



Bottom View

**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   | S2<br>A/AA | S2<br>B/BA | S2<br>D/DA | S2<br>G/GA | S2<br>J/JA | S2<br>K/KA | S2<br>M/MA | Unit |
|---|--|------------|------------|------------|------------|------------|------------|------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage              | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 50         | 100        | 200        | 400        | 600        | 800        | 1000       | V    |
| RMS Reverse Voltage   | V <sub>R(RMS)</sub>                                    | 35         | 70         | 140        | 280        | 420        | 560        | 700        | V    |
| Average Rectified Output Current @ T <sub>T</sub> = 100°C   | I <sub>(AV)</sub>                                      | 1.5        |            |            |            |            |            |            | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub>                                       | 50         |            |            |            |            |            |            | A    |

**Thermal Characteristics**

| Characteristic  | Symbol                            | Value       | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Terminal (Note 4) | R <sub>θJT</sub>                  | 20          | °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 |
|---|-----------------|------------|------|
| Forward Voltage @ I <sub>F</sub> = 1.5A   | V <sub>FM</sub> | 1.15       | V    |
| Peak Reverse Current @ T <sub>A</sub> = 25°C<br>at Rated DC Blocking Voltage @ T <sub>A</sub> = 125°C | I <sub>RM</sub> | 5.0<br>125 | μA   |
| Typical Total Capacitance (Note 3)  | C <sub>T</sub>  | 20         | pF   |

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html).
  2. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
  3. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
  4. Thermal Resistance Junction to Terminal, unit mounted on PC board with 5.0 mm<sup>2</sup> (0.013 mm thick) copper pads as heat sink.

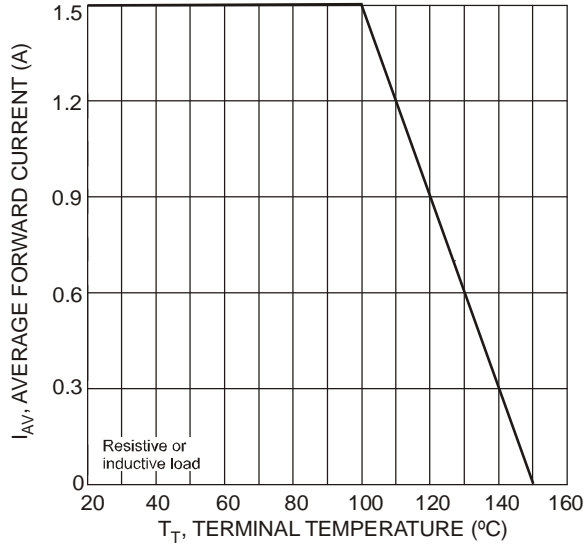


Fig. 1 Forward Current Derating Curve

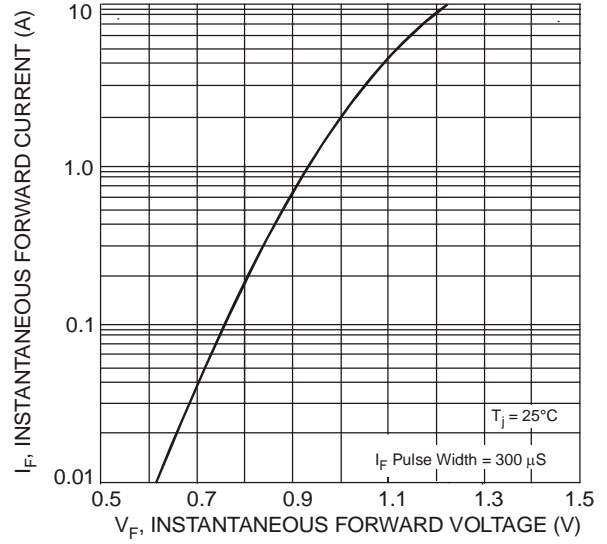


Fig. 2 Typical Forward Characteristics

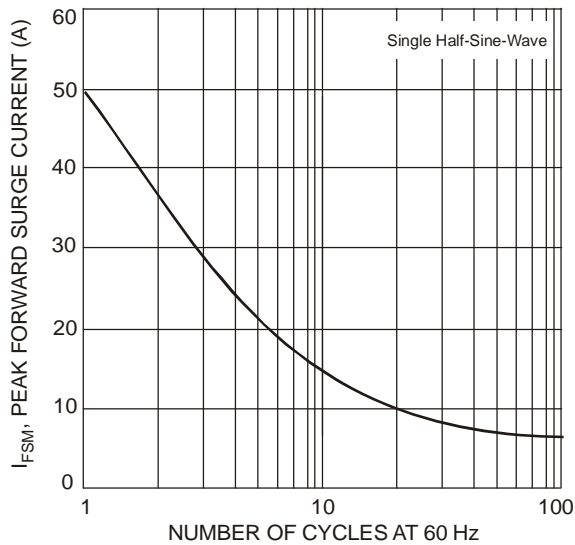


Fig. 3 Forward Surge Current Derating Curve

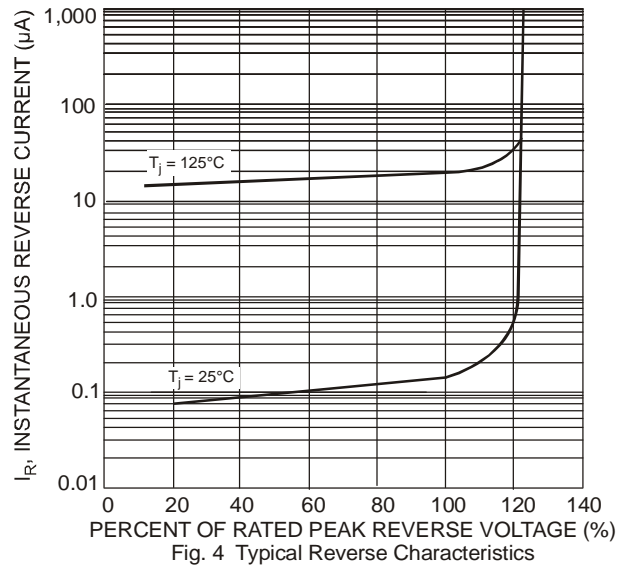


Fig. 4 Typical Reverse Characteristics

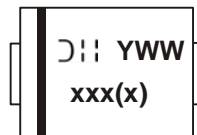
## Ordering Information (Note 5)

| Part Number | Case | Packaging        |
|-------------|------|------------------|
| S2xA-13-F   | SMA  | 5000/Tape & Reel |
| S2x-13-F    | SMB  | 3000/Tape & Reel |

\*x = Device type, e.g. S2AA-13-F (SMA package); S2A-13-F (SMB package).

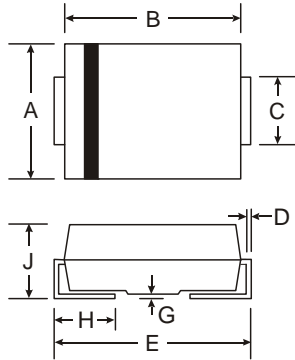
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



xxx = Product type marking code, ex: S2A (SMB package)  
 xxxx = Product type marking code, ex: S2AA (SMA package)  
 DII = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year (ex: 2 for 2002)  
 WW = Week code 01 to 52

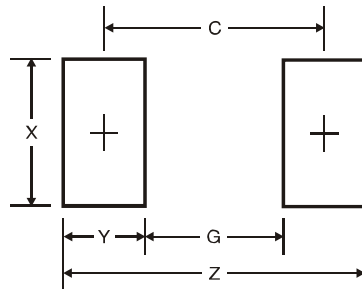
## Package Outline Dimensions



| SMA                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 2.29 | 2.92 |
| B                    | 4.00 | 4.60 |
| C                    | 1.27 | 1.63 |
| D                    | 0.15 | 0.31 |
| E                    | 4.80 | 5.59 |
| G                    | 0.05 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 2.01 | 2.30 |
| All Dimensions in mm |      |      |

| 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 | 2.62 |
| All Dimensions in mm |      |      |

## Suggested Pad Layout



| SMA Dimensions | Value (in mm) |
|----------------|---------------|
| Z              | 6.5           |
| G              | 1.5           |
| X              | 1.7           |
| Y              | 2.5           |
| C              | 4.0           |

| SMB Dimensions | Value (in mm) |
|----------------|---------------|
| Z              | 6.7           |
| G              | 1.8           |
| X              | 2.3           |
| Y              | 2.5           |
| C              | 4.3           |

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