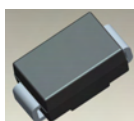


**1.5A SURFACE MOUNT GLASS PASSIVATED RECTIFIER**
**Features**

- 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-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 
- Polarity: Cathode Band or Cathode Notch
- Weight: SMA 0.064 grams (approximate)  
SMB 0.093 grams (approximate)



Top View



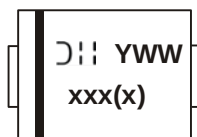
Bottom View

**Ordering Information** (Note 3)

| 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:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
  2. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
  3. For packaging details, go to our website at <http://www.diodes.com>.

**Marking Information**


xxx = Product type marking code, ex: S2A (SMB package)  
 xxxx = Product type marking code, ex: S2AA (SMA package)  
 = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year (ex: 2 for 2002)  
 WW = Week code (01 to 53)

**Maximum Ratings** @ $T_A = 25^\circ\text{C}$  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                                                                     | $V_{RRM}$    | 50         | 100        | 200        | 400        | 600        | 800        | 1000       | V    |
| Working Peak Reverse Voltage                                                                        | $V_{RWM}$    |            |            |            |            |            |            |            |      |
| DC Blocking Voltage                                                                                 | $V_R$        |            |            |            |            |            |            |            |      |
| RMS Reverse Voltage                                                                                 | $V_{R(RMS)}$ | 35         | 70         | 140        | 280        | 420        | 560        | 700        | V    |
| Average Rectified Output Current @ $T_T = 100^\circ\text{C}$                                        | $I_{(AV)}$   | 1.5        |            |            |            |            |            |            | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$    | 50         |            |            |            |            |            |            | A    |

**Thermal Characteristics**

| Characteristic                                            | Symbol          | Value       | Unit               |
|-----------------------------------------------------------|-----------------|-------------|--------------------|
| Typical Thermal Resistance, Junction to Terminal (Note 4) | $R_{\theta JT}$ | 20          | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range                   | $T_J, T_{STG}$  | -65 to +150 | $^\circ\text{C}$   |

**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

| Characteristic                                           | Symbol   | Value | Unit          |
|----------------------------------------------------------|----------|-------|---------------|
| Forward Voltage @ $I_F = 1.5\text{A}$                    | $V_{FM}$ | 1.15  | V             |
| Peak Reverse Current @ $T_A = 25^\circ\text{C}$          | $I_{RM}$ | 5.0   | $\mu\text{A}$ |
| at Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$ |          | 125   |               |
| Typical Total Capacitance (Note 5)                       | $C_T$    | 20    | pF            |

Notes: 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.  
 5. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.

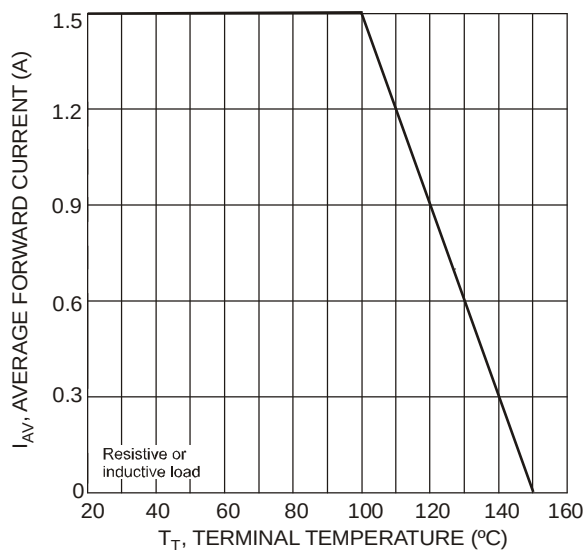


Fig. 1 Forward Current Derating Curve

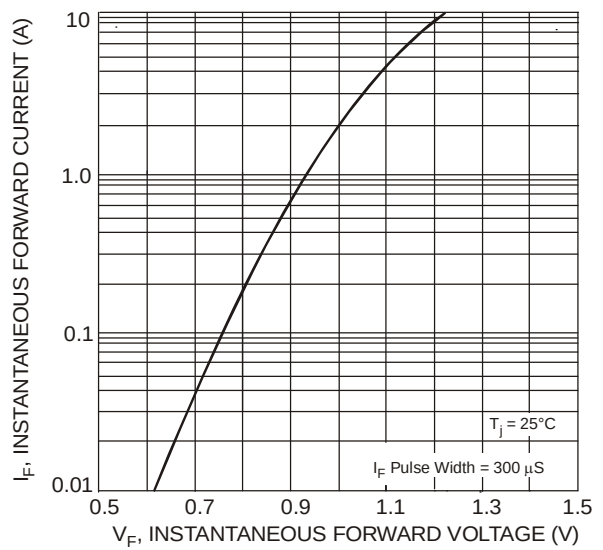


Fig. 2 Typical Forward Characteristics

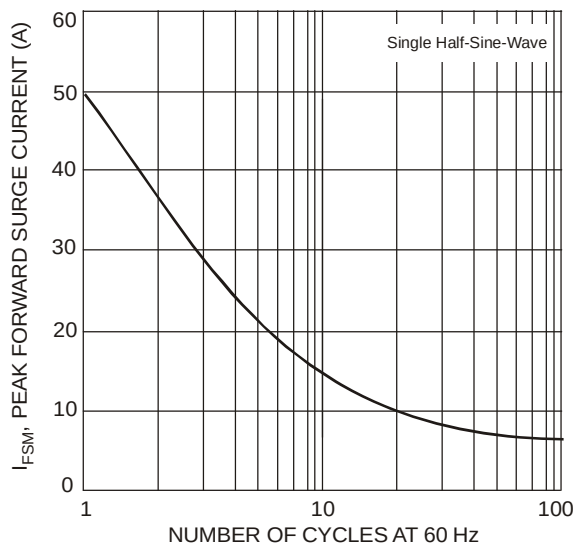


Fig. 3 Forward Surge Current Derating Curve

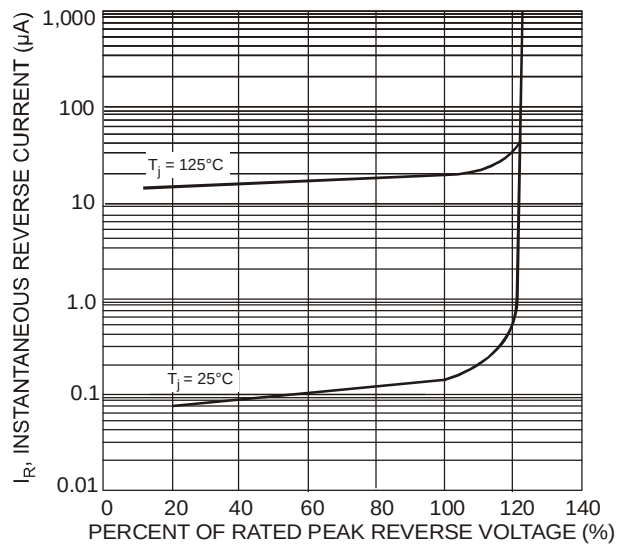
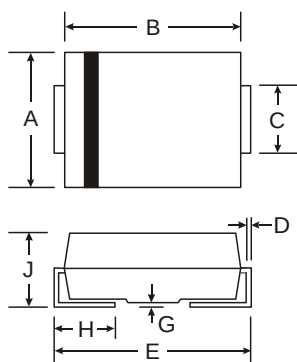


Fig. 4 Typical Reverse Characteristics

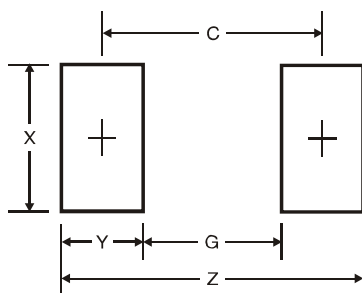
## Package Outline Dimensions



| 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 | 2.50 |
| 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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