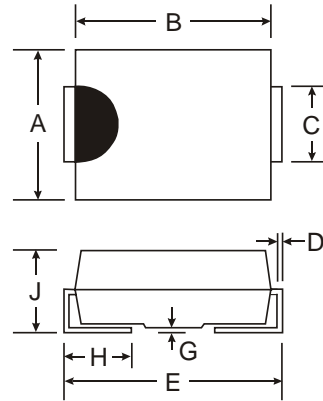


Features

- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 30A Peak
- Ideally Suited for Automated Assembly
- **Lead Free Finish/RoHS Compliant (Note 3)**

Mechanical Data

- Case: SMA/SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 **(e3)**
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number, See Page 3
- Ordering Information: See Page 3
- SMA Weight: 0.064 grams (approximate)
- SMB Weight: 0.093 grams (approximate)



| Dim | SMA | | SMB | |
|-----------------------------|------|------|------|------|
| | Min | Max | Min | Max |
| A | 2.29 | 2.92 | 3.30 | 3.94 |
| B | 4.00 | 4.60 | 4.06 | 4.57 |
| C | 1.27 | 1.63 | 1.96 | 2.21 |
| D | 0.15 | 0.31 | 0.15 | 0.31 |
| E | 4.80 | 5.59 | 5.00 | 5.59 |
| G | 0.10 | 0.20 | 0.10 | 0.20 |
| H | 0.76 | 1.52 | 0.76 | 1.52 |
| J | 2.01 | 2.30 | 2.00 | 2.40 |
| All Dimensions in mm | | | | |

A, B, D, G, J, K, M Suffix Designates SMA Package
AB, BB, DB, GB, JB, KB, MB Suffix Designates SMB Package

Maximum Ratings and Electrical Characteristics @T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | S1 A/AB | S1 B/BB | S1 D/DB | S1 G/GB | S1 J/JB | S1 K/KB | S1 M/MB | 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°C | I _O | 1.0 | | | | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load | I _{FSM} | 30 | | | | | | | A |
| Forward Voltage @ I _F = 1.0A | V _{FM} | 1.1 | | | | | | | V |
| Peak Reverse Leakage Current @ T _A = 25°C | I _{RM} | 5.0 | | | | | | | μA |
| at Rated DC Blocking Voltage @ T _A = 125°C | | 100 | | | | | | | |
| Maximum Reverse Recovery Time (Note 4) | t _{rr} | 2.0 | | | | | | | μs |
| Typical Total Capacitance (Note 1) | C _T | 10 | | | | | | | pF |
| Typical Thermal Resistance, Junction to Terminal (Note 2) | R _{θJT} | 30 | | | | | | | °C/W |
| Operating and Storage Temperature Range | T _i , T _{STG} | -65 to +150 | | | | | | | °C |

- Notes:
1. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
 2. Thermal resistance junction to terminal, unit mounted on PC board with 5.0 mm² (0.013 mm thick) copper pads as heat sink.
 3. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see *EU Directive Annex Notes 5 and 7*.
 4. Measured with I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A.

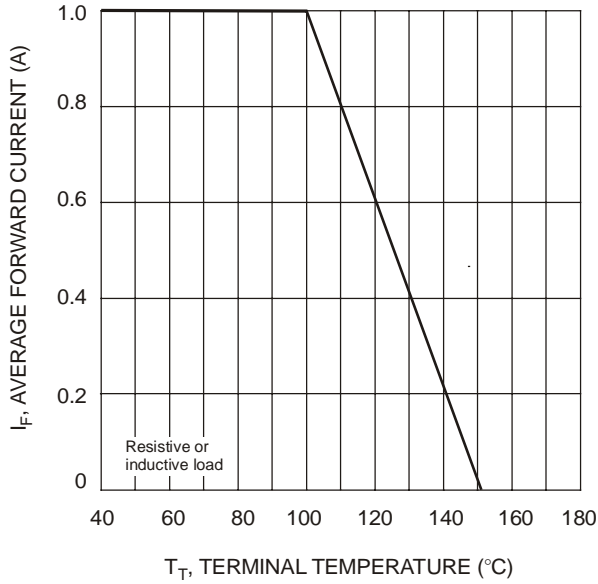


Fig. 1 Forward Current Derating Curve

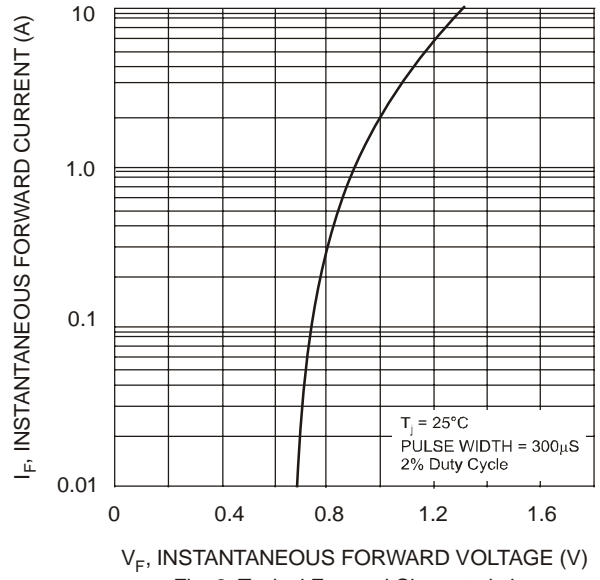


Fig. 2 Typical Forward Characteristics

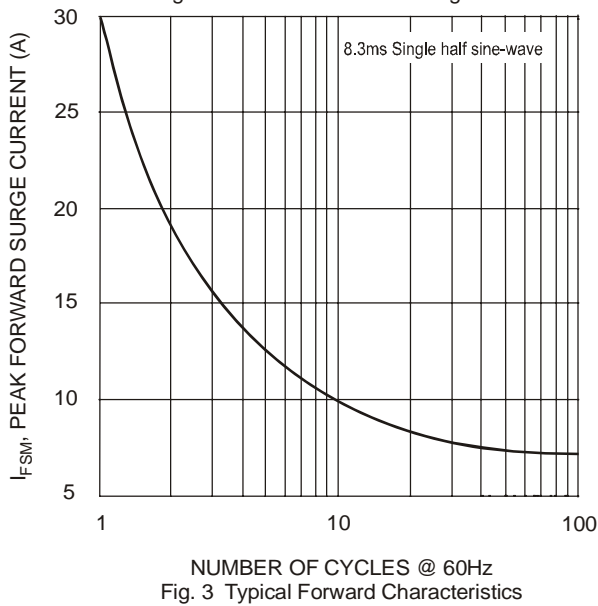


Fig. 3 Typical Forward Characteristics

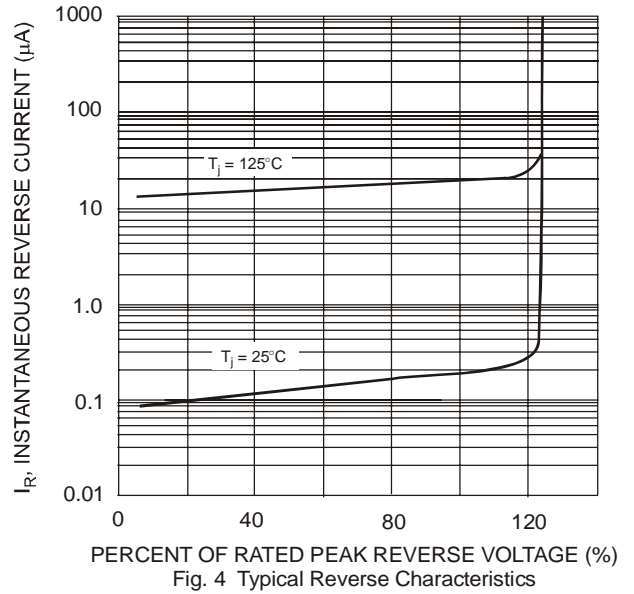


Fig. 4 Typical Reverse Characteristics

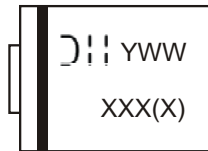
Ordering Information (Note 5)

| Device | Packaging | Shipping |
|-----------|-----------|------------------|
| S1x-13-F | SMA | 5000/Tape & Reel |
| S1xB-13-F | SMB | 3000/Tape & Reel |

* x = Device type, e.g. S1A-13-F (SMA package); S1AB-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: S1A (SMA package)
 XXXX = Product type marking code, ex: S1AB (SMB package)
 D!!! = Manufacturers' code marking
 YWW = Date code marking
 Y = Last digit of year ex: 2 for 2002
 WW = Week code 01 to 52

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