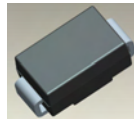


Features

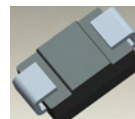
- Low Leakage Current
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 7)**

Mechanical Data

- Case: SMA
- 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
- Polarity Indicator: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.064 grams (approximate)



Top View



Bottom View

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 | Value | Unit |
|--|---------------------|--------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 40 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| Maximum Voltage Rate of Change (Rated V _R) | dv/dt | 10,000 | V/μs |
| RMS Reverse Voltage | V _{R(RMS)} | 28 | V |
| Average Rectified Output Current (See Figure 1) | I _O | 3 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 45 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Maximum Thermal Resistance | | | |
| Thermal Resistance Junction to Soldering (Note 2) | R _{θJS} | 5 | °C/W |
| Thermal Resistance Junction to Ambient (Note 3) | R _{θJA} | 124 | |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

Electrical Characteristics @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|------|------|------|---|
| Reverse Breakdown Voltage (Note 5) | V _{(BR)R} | 40 | - | - | V | I _R = 0.4mA |
| Forward Voltage Drop | V _F | - | 0.30 | 0.35 | V | I _F = 0.5A, T _J = 25°C |
| | | - | 0.33 | 0.38 | | I _F = 1.0A, T _J = 25°C |
| | | - | 0.43 | 0.50 | | I _F = 3.0A, T _J = 25°C |
| | | - | - | 0.48 | | I _F = 3.0A, T _J = 125°C |
| Leakage Current (Note 5) | I _R | - | 45 | 250 | μA | V _R = 5V, T _J = 25°C |
| | | - | 80 | 400 | μA | V _R = 40V, T _J = 25°C |
| | | - | 9 | 40 | mA | V _R = 40V, T _J = 125°C |

- 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.
 2. Theoretical R_{θJS} calculated from the top center of the die straight down to the PCB cathode tab solder junction.
 3. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
 4. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
 5. Short duration pulse test used to minimize self-heating effect.
 6. FR-4 PCB, 2 oz. Copper, single side 16 x MRP, 1" x 1" PC Board.
 7. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.

SBR is a registered trademark of Diodes Incorporated.

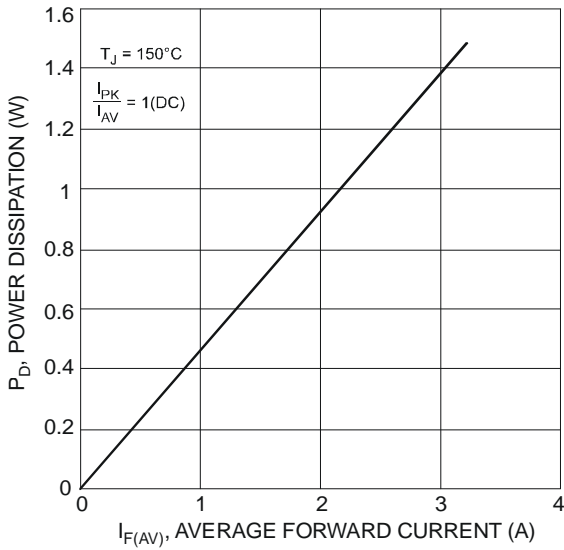


Fig. 1 Forward Power Dissipation

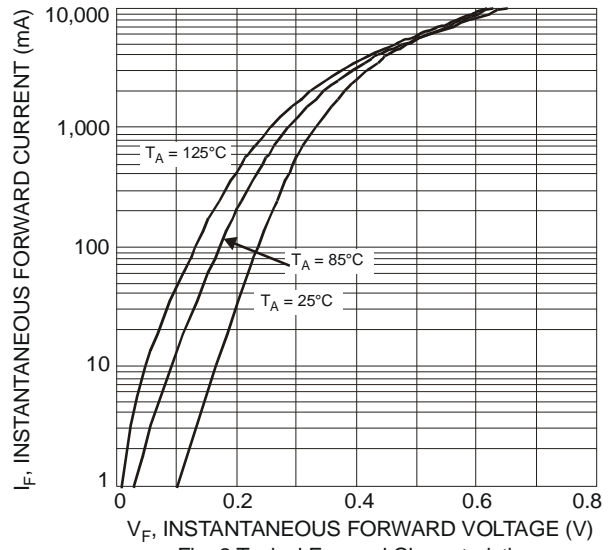


Fig. 2 Typical Forward Characteristics

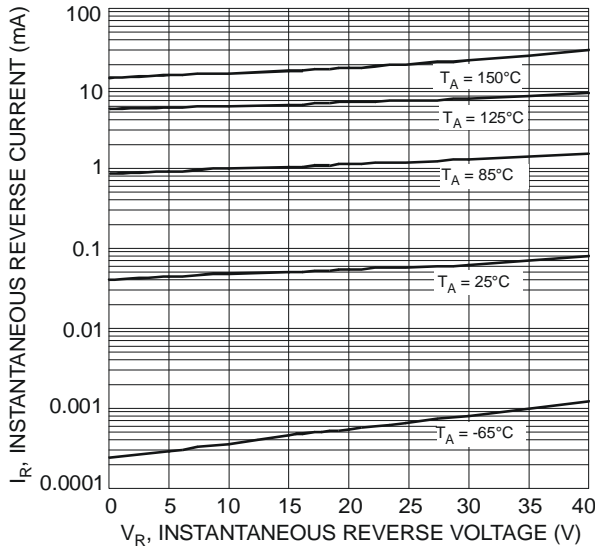


Fig. 3 Typical Reverse Characteristics

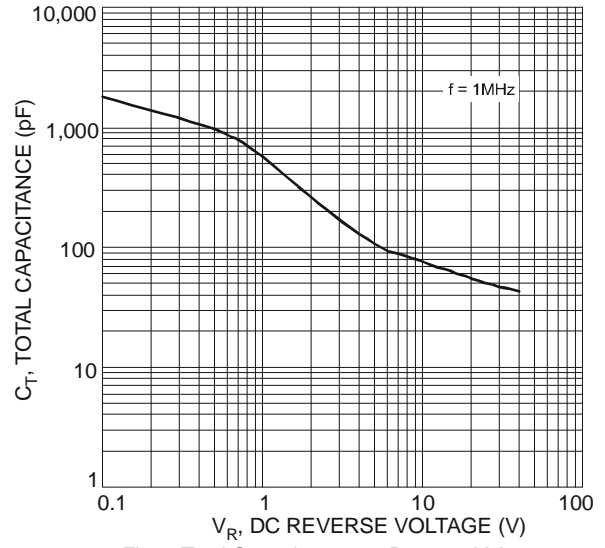


Fig. 4 Total Capacitance vs. Reverse Voltage

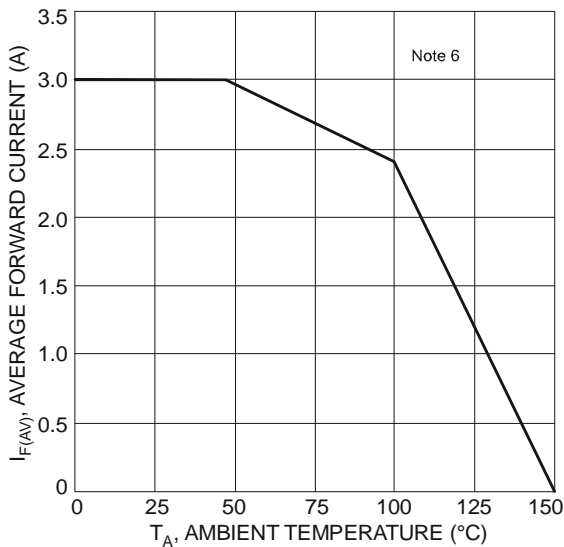


Fig. 5 Forward Current Derating Curve

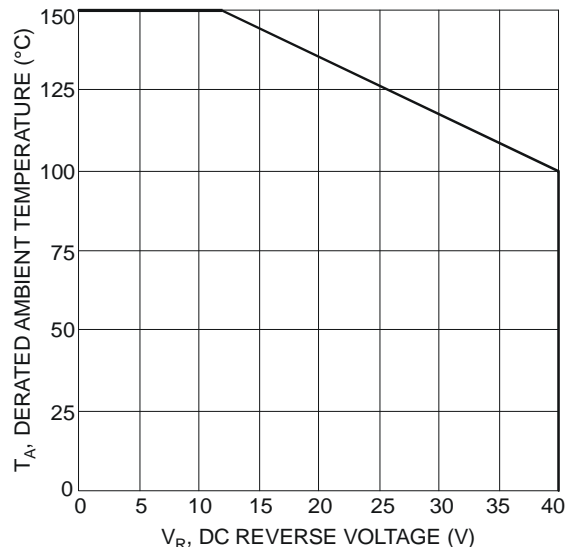


Fig. 6 Operating Temperature Derating

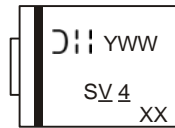
SBR is a registered trademark of Diodes Incorporated.

Ordering Information (Note 8)

| Part Number | Case | Packaging |
|--------------|------|------------------|
| SBR3A40SA-13 | SMA | 5000/Tape & Reel |

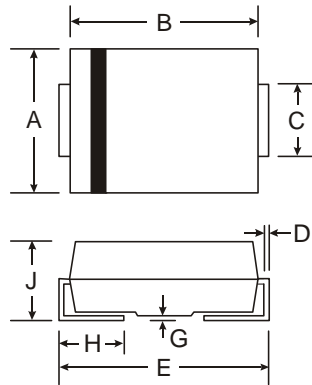
Notes: 8. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



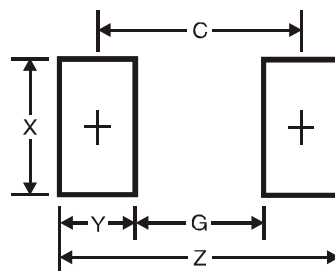
SV 4 = Product Type Marking Code
 DII = Manufacturers' code marking
 YWW = Date Code Marking
 Y = Last digit of year (ex: 7 for 2007)
 WW = Week code 01 to 52

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 | | |

Suggested Pad Layout



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

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