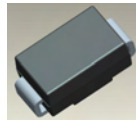


## Features

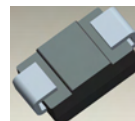
- Low Leakage Current
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 3)**

## 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 <sup>Ⓔ</sup>
- 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<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           | Value | Unit |
|--|------------------|-------|------|
| Peak Repetitive Reverse Voltage  | V <sub>RRM</sub> | 40    | V    |
| Working Peak Reverse Voltage   | V <sub>RWM</sub> |       |      |
| DC Blocking Voltage  | V <sub>RM</sub>  |       |      |
| Average Rectified Output Current (See Figure 1)  | I <sub>O</sub>   | 2     | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 25    | A    |

## Thermal Characteristics

| Characteristic  | Symbol                            | Value       | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Ambient (Note 4) | R <sub>θJA</sub>                  | 110         | °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         | Min | Typ | Max  | Unit | Test Condition                               |
|--------------------------|----------------|-----|-----|------|------|--|
| Forward Voltage Drop     | V <sub>F</sub> | -   | -   | 0.55 | V    | I <sub>F</sub> = 2.0A, T <sub>J</sub> = 25°C |
|                          |                |     |     | 0.50 |      | I <sub>F</sub> = 1.0A, T <sub>J</sub> = 25°C |
| Leakage Current (Note 2) | I <sub>R</sub> | -   | -   | 500  | μA   | V <sub>R</sub> = 40V, T <sub>J</sub> = 25°C  |
|                          |                |     |     | 100  |      | V <sub>R</sub> = 40V, T <sub>J</sub> = 125°C |

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/products/lead\\_free.html](http://www.diodes.com/products/lead_free.html).
  2. Short duration pulse test used to minimize self-heating effect.
  3. No purposefully added lead. Halogen and Antimony Free.
  4. Device mounted on Polyimide substrate, with 1" x 1", 2 oz. Copper, double-sided PCB board.

SBR is a registered trademark of Diodes Incorporated.

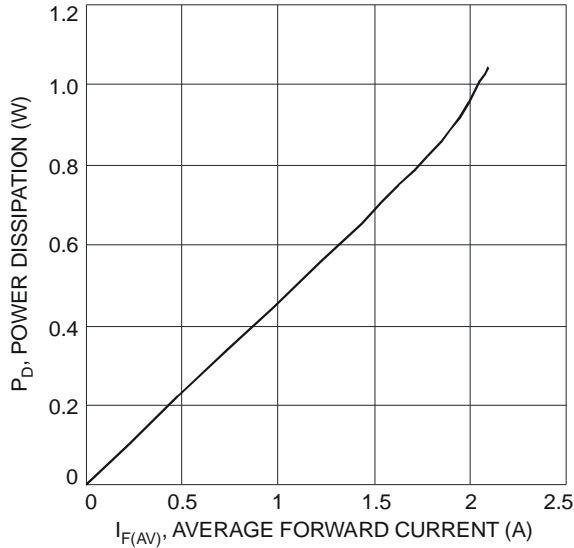


Fig. 1 Forward Power Dissipation

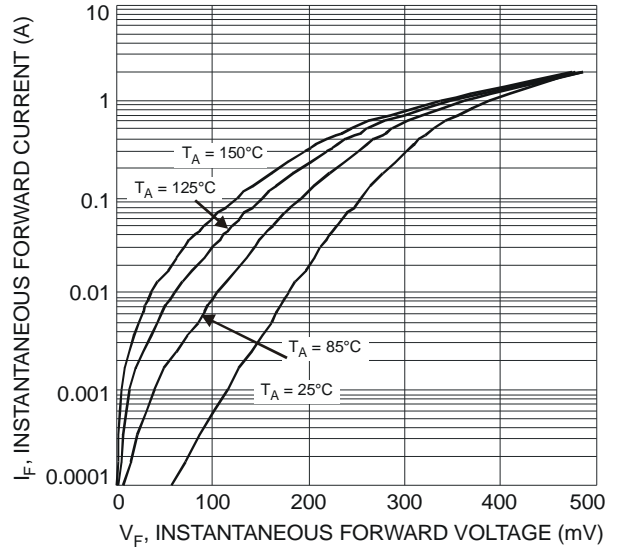


Fig. 2 Typical Forward Characteristics

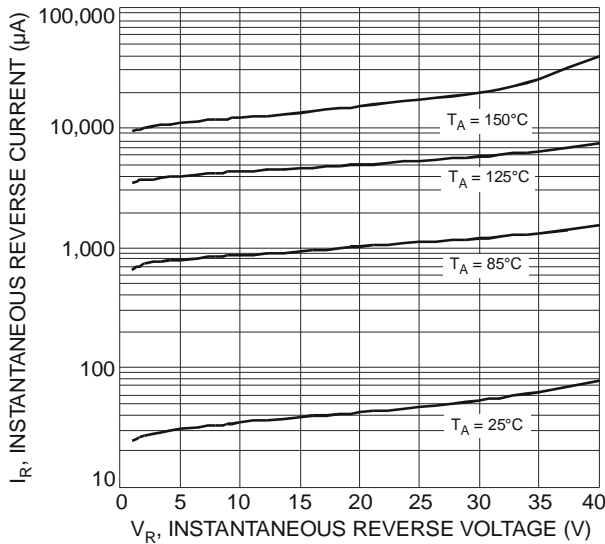


Fig. 3 Typical Reverse Characteristics

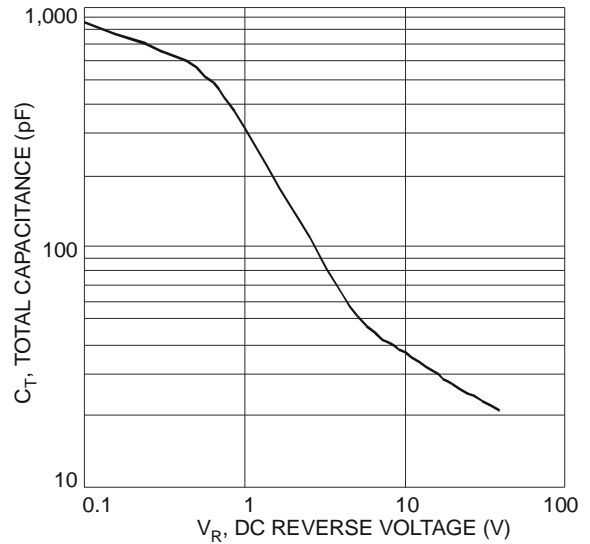


Fig. 4 Total Capacitance vs. Reverse Voltage

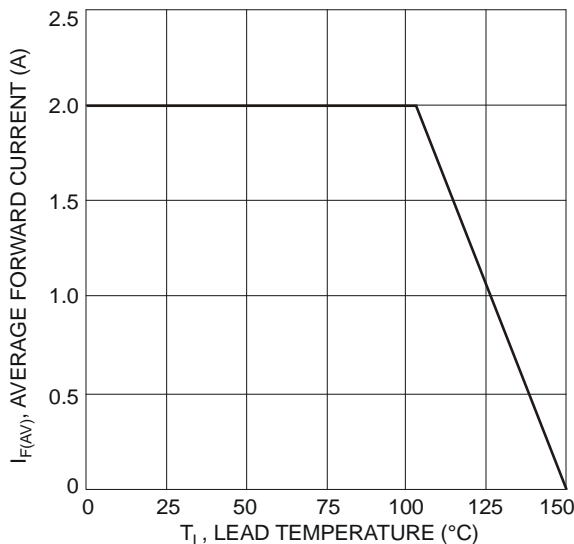


Fig. 5 Forward Current Derating Curve

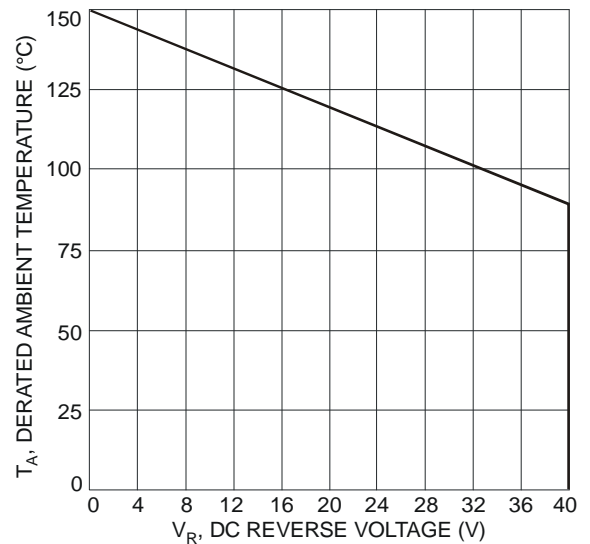


Fig. 6 Operating Temperature Derating

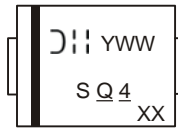
SBR is a registered trademark of Diodes Incorporated.

**Ordering Information** (Note 5)

| Part Number    | Case | Packaging        |
|----------------|------|------------------|
| SBR2A40SA-13-F | SMA  | 5000/Tape & Reel |

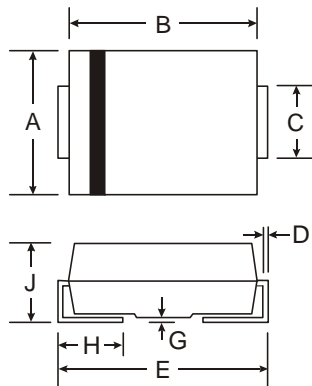
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



S Q 4 = Product Type Marking Code  
 DII = Manufacturers' code marking  
 YWW = Date Code Marking  
 Y = Last digit of year (ex: 9 for 2009)  
 WW = Week code 01 to 52

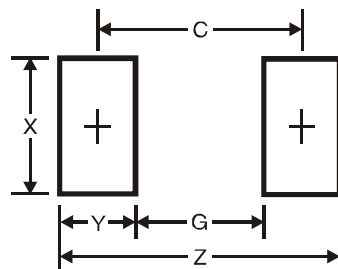
**Package Outline Dimensions**



| 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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