

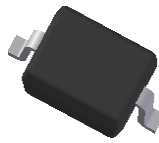
## Features

- Ultra Low Leakage Current (5nA @  $V_R = 75V$ )
- Low Capacitance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

## Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Bar
- Terminals: Finish – Matte Tin Finish Annealed over Alloy 42 Leadframe; Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.004 grams (Approximate)

SOD323



Top View

## Ordering Information (Note 5)

| Product     | Compliance | Marking | Reel Size (inches) | Tape Width (mm) | Quantity per Reel |
|-------------|------------|---------|--------------------|-----------------|-------------------|
| BAV116WSQ-7 | Automotive | TW      | 7                  | 8               | 3,000/Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to [http://www.diodes.com/quality/product\\_compliance\\_definitions/](http://www.diodes.com/quality/product_compliance_definitions/).
  5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information

SOD323



TW = Product Type Marking Code  
Bar Denotes Cathode Side

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic   | Symbol   | Value             | 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> | 85                | V    |
| RMS Reverse Voltage  | V <sub>R(RMS)</sub>                                    | 60                | V    |
| Forward Continuous Current (Note 6)  | I <sub>FM</sub>  | 215               | mA   |
| Repetitive Peak Forward Current  | I <sub>FRM</sub>                                       | 500               | mA   |
| Non-Repetitive Peak Forward Surge Current  | I <sub>FSM</sub>                                       | 4.0<br>1.0<br>0.5 | A    |
|  | @ t = 1.0μs  |                   |      |
|  | @ t = 1.0ms  |                   |      |
|  | @ t = 1.0s   |                   |      |

**Thermal Characteristics**

| Characteristic                                      | Symbol                            | Value       | Unit |
|---|-----------------------------------|-------------|------|
| Power Dissipation (Note 6)                          | P <sub>D</sub>                    | 200         | mW   |
| Thermal Resistance Junction to Ambient Air (Note 6) | R <sub>θJA</sub>                  | 625         | °C/W |
| Operating and Storage Temperature Range             | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                     | Symbol             | Min | Typ | Max                       | Unit     | Test Condition  |
|------------------------------------|--------------------|-----|-----|---------------------------|----------|---|
| Reverse Breakdown Voltage (Note 7) | V <sub>(BR)R</sub> | 85  | —   | —                         | V        | I <sub>R</sub> = 100μA  |
| Forward Voltage                    | V <sub>F</sub>     | —   | —   | 0.9<br>1.0<br>1.1<br>1.25 | V        | I <sub>F</sub> = 1.0mA<br>I <sub>F</sub> = 10mA<br>I <sub>F</sub> = 50mA<br>I <sub>F</sub> = 150mA        |
| Leakage Current (Note 7)           | I <sub>R</sub>     | —   | —   | 5.0<br>80                 | nA<br>nA | V <sub>R</sub> = 75V<br>V <sub>R</sub> = 75V, T <sub>J</sub> = +150°C                                     |
| Total Capacitance                  | C <sub>T</sub>     | —   | 1.5 | —                         | pF       | V <sub>R</sub> = 0, f = 1.0MHz  |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | —   | 3.0                       | μs       | I <sub>F</sub> = I <sub>R</sub> = 10mA,<br>I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω |

Notes: 6. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
7. Short duration pulse test used to minimize self-heating effect.

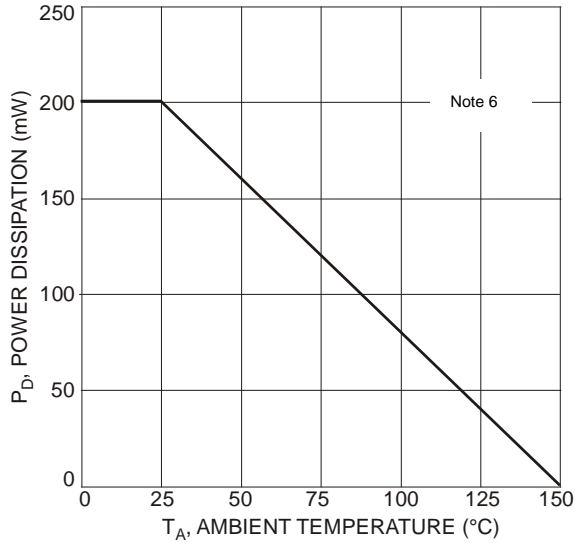


Fig. 1 Power Derating Curve, Total Package

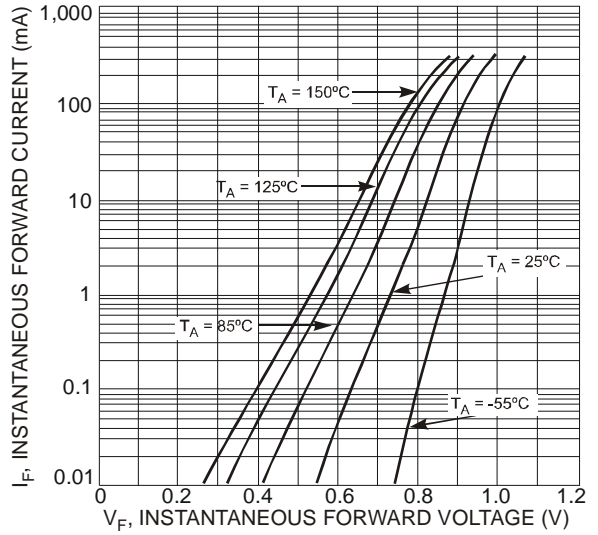


Fig. 2 Typical Forward Characteristics

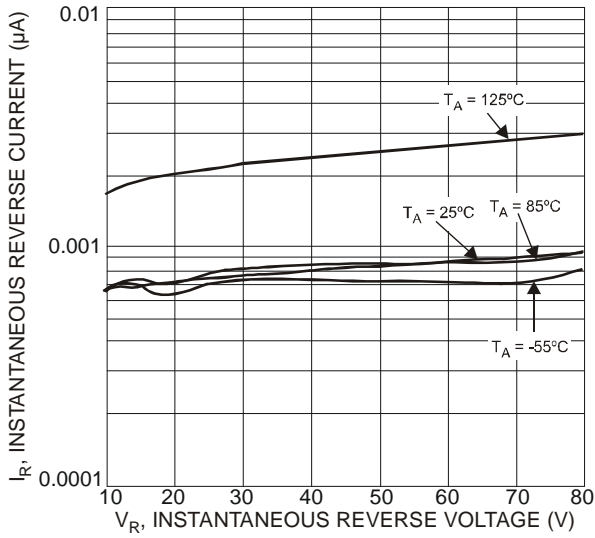


Fig. 3 Typical Reverse Characteristics

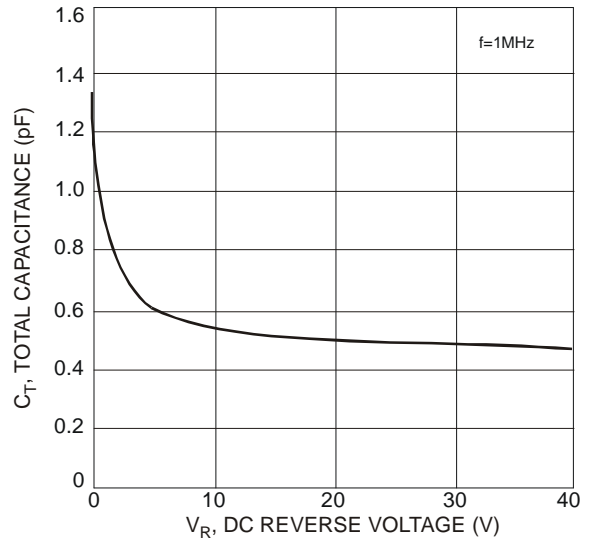
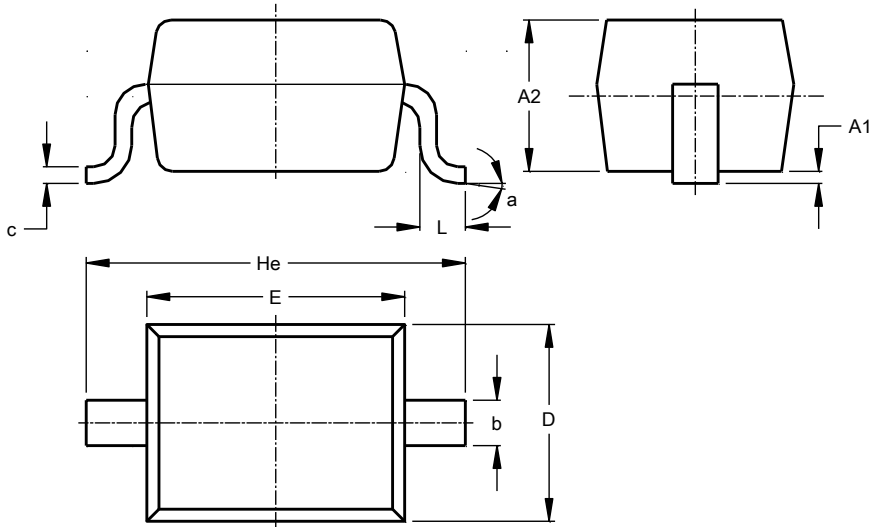


Fig. 4 Total Capacitance vs. Reverse Voltage

**Package Outline Dimensions**

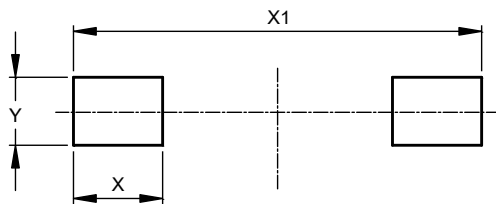
Please see AP02001 at [http://www.diodes.com/\\_files/datasheets/ap02001.pdf](http://www.diodes.com/_files/datasheets/ap02001.pdf) for the latest version.



| SOD323               |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A1                   | --   | 0.10 | 0.05 |
| A2                   | 1.00 | 1.10 | 1.05 |
| b                    | 0.25 | 0.35 | 0.30 |
| c                    | 0.10 | 0.15 | 0.11 |
| D                    | 1.20 | 1.40 | 1.30 |
| E                    | 1.60 | 1.80 | 1.70 |
| He                   | 2.30 | 2.70 | 2.50 |
| L                    | 0.20 | 0.40 | 0.30 |
| a                    | 0°   | 8°   | --   |
| All Dimensions in mm |      |      |      |

**Suggested Pad Layout**

Please see AP02001 at [http://www.diodes.com/\\_files/datasheets/ap02001.pdf](http://www.diodes.com/_files/datasheets/ap02001.pdf) for the latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| X          | 0.590         |
| X1         | 2.700         |
| Y          | 0.450         |

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