

Features

- Fast Switching Speed: 50ns Maximum
- 400V High Reverse Breakdown Voltage Rating
- Low Capacitance: 2.5pF Maximum
- Surface Mount Package Ideally Suited for Automated Insertion
- **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**

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
- Terminals: Matte Tin Finish Annealed Over Alloy 42 Leadframe. Lead Free Plating. Solderable per MIL-STD-202, Method 208
- Weight: 0.005 grams (approximate)

SOD323



Top View

Ordering Information (Note 4)

| Product | Compliance | Marking | Reel Size (inches) | Tape Width (mm) | Quantity per Reel |
|-------------|------------|---------|--------------------|-----------------|-------------------|
| BAV5004WS-7 | AEC-Q101 | LY | 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 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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>

Marking Information



LY = Product Type Marking Code
Line Denotes Cathode Side

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|---|---------------------|-------------|------|
| Repetitive Peak Reverse Voltage | V _{RRM} | 400 | V |
| Working Peak Reverse Voltage | V _{RWM} | 350 | V |
| DC Blocking Voltage | V _R | 247 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 247 | V |
| Forward Continuous Current (Note 5) | I _{FM} | 300 | mA |
| Peak Repetitive Forward Current (Note 5) | I _{FRM} | 625 | mA |
| Non-Repetitive Peak Forward Surge Current | I _{FSM} | @ t = 1.0µs | 5.0 |
| | | @ t = 1.0ms | 3.0 |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------------|---------------|
| Power Dissipation (Note 5) (See figure 1) | P_D | 200 | mW |
| Thermal Resistance Junction to Ambient Air (Note 5) | $R_{\theta JA}$ | 625 | $^{\circ}C/W$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^{\circ}C$ |

Electrical Characteristics (@ $T_A = +25^{\circ}C$, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|-------------|-----|-----|----------------------|--------------------|---|
| Reverse Breakdown Voltage (Note 6) | $V_{(BR)R}$ | 400 | - | - | V | $I_R = 150\mu A$ |
| Forward Voltage | V_F | - | - | 0.93 1.09 1.29 | V | $I_F = 20mA$ $I_F = 100mA$ $I_F = 200mA$ |
| Reverse Current (Note 6) | I_R | - | - | 1 100 | μA μA | $V_R = 240V$ $V_R = 240V, T_J = +150^{\circ}C$ |
| Total Capacitance | C_T | - | 0.9 | 2.5 | pF | $V_R = 0V, f = 1.0MHz$ |
| Reverse Recovery Time | t_{rr} | - | - | 50 | ns | $I_F = I_R = 30mA$, $I_{rr} = 3.0mA, R_L = 100\Omega$ |

Notes: 5. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.
6. Short duration pulse test used to minimize self-heating effect.

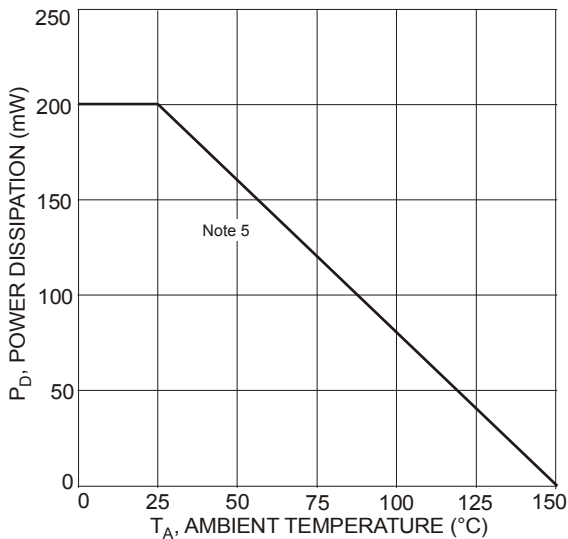


Fig. 1 Power Derating Curve

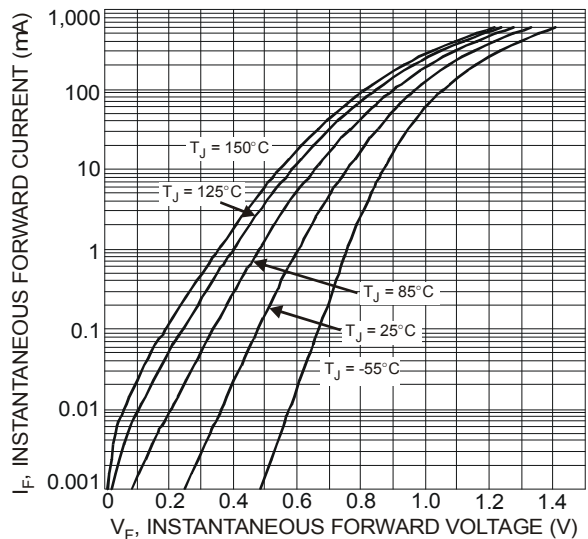


Fig. 2 Typical Forward Characteristics

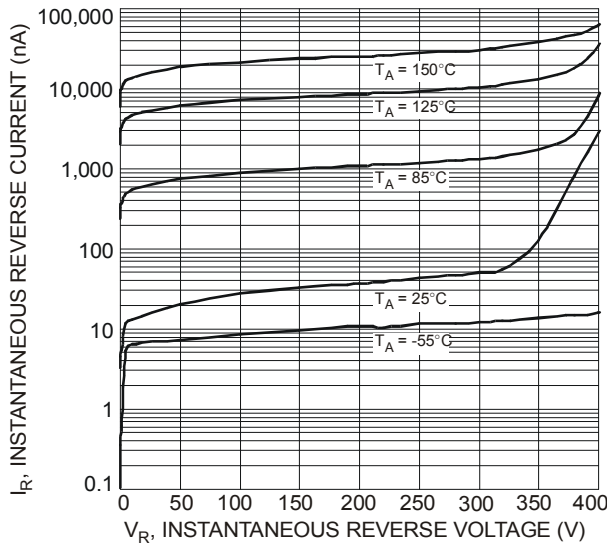


Fig. 3 Typical Reverse Characteristics

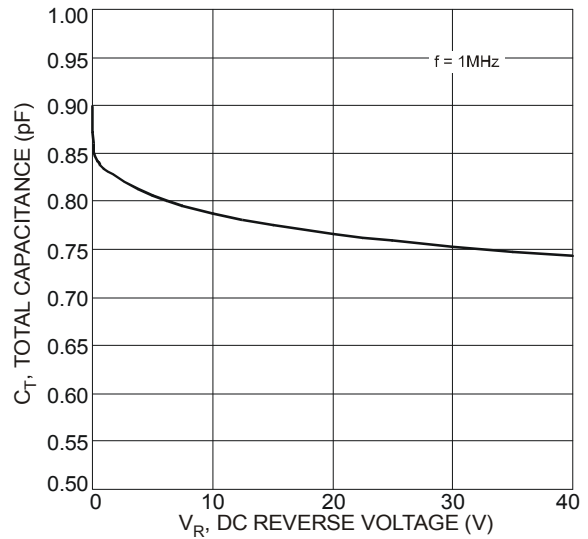
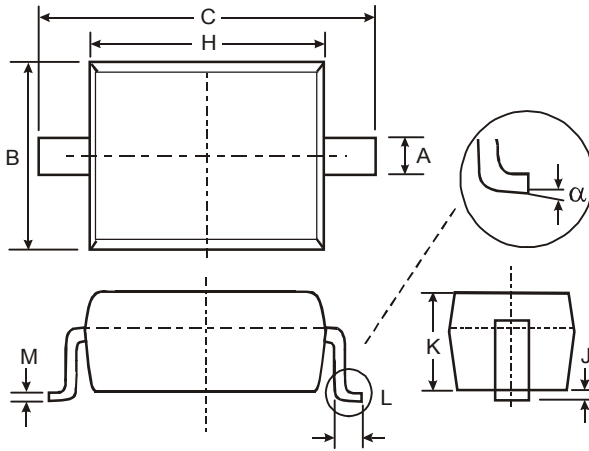


Fig. 4 Typical Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

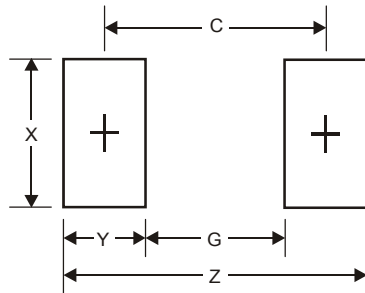
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



| SOD323 | | |
|----------------------|------|------|
| Dim | Min | Max |
| A | 0.25 | 0.35 |
| B | 1.20 | 1.40 |
| C | 2.30 | 2.70 |
| H | 1.60 | 1.80 |
| J | 0.00 | 0.10 |
| K | 1.0 | 1.1 |
| L | 0.20 | 0.40 |
| M | 0.10 | 0.15 |
| α | 0° | 8° |
| All Dimensions in mm | | |

Suggested Pad Layout

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 3.75 |
| G | 1.05 |
| X | 0.65 |
| Y | 1.35 |
| C | 2.40 |

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