


Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- For General Purpose Switching Applications
- High Conductance
- **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
- Terminal Connections: Cathode Band, See Page 2
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 
- Weight: 0.004 grams (approximate)

SOD323



Top View

Ordering Information (Note 4)

| Part Number | Qualification | Case | Packaging |
|--------------|---------------|--------|------------------|
| BAV19WS-7-F | AEC-Q101 | SOD323 | 3000/Tape & Reel |
| BAV20WS-7-F | AEC-Q101 | SOD323 | 3000/Tape & Reel |
| BAV21WS-7-F | AEC-Q101 | SOD323 | 3000/Tape & Reel |
| BAV21WSQ-7-F | Automotive | SOD323 | 3000/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



XX = Product Type Marking Code
 BAV19WS Marking: T2 or T3
 BAV20WS Marking: T2 or T3
 BAV21WS Marking: T3

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

| Characteristic | Symbol | BAV19WS | BAV20WS | BAV21WS | Unit |
|--|------------------------------------|-------------------|---------|---------|------|
| Repetitive Peak Reverse Voltage | V _{RRM} | 120 | 200 | 250 | V |
| Working Peak Reverse Voltage DC Blocking Voltage | V _{RWM} V _R | 100 | 150 | 200 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 71 | 106 | 141 | V |
| Forward Continuous Current (Note 5) | I _{FM} | 250 | | | mA |
| Average Rectified Output Current (Note 5) | I _O | 200 | | | mA |
| Non-Repetitive Peak Forward Surge Current @t = 1.0µs @t = 100µs @t = 10ms | I _{FSM} | 9.0 3.0 1.7 | | | A |
| Repetitive Peak Forward Surge Current | I _{FRM} | 625 | | | mA |

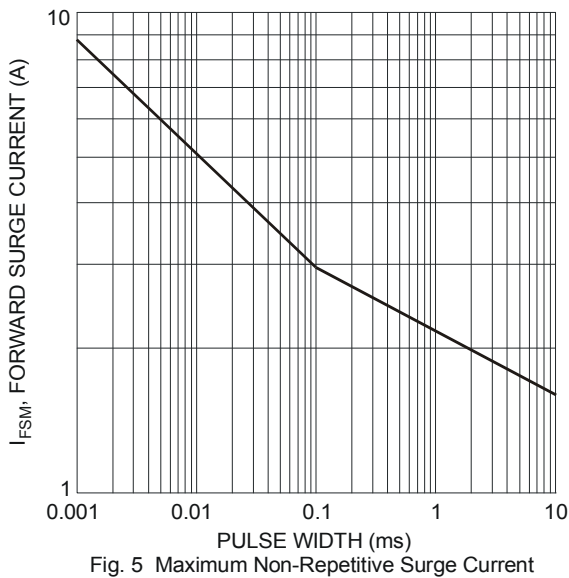
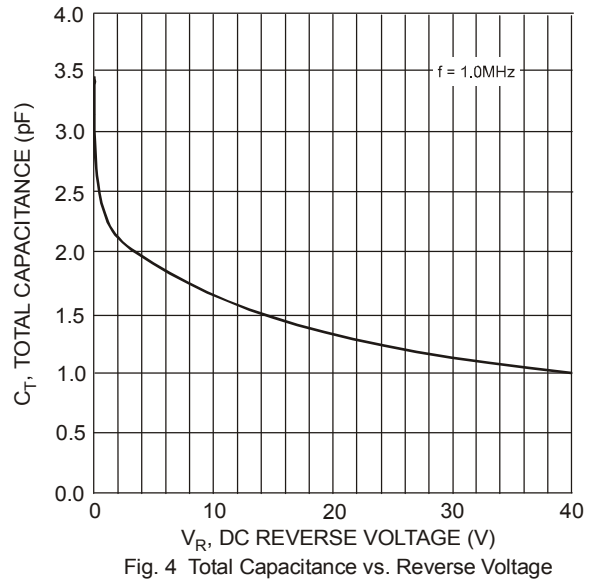
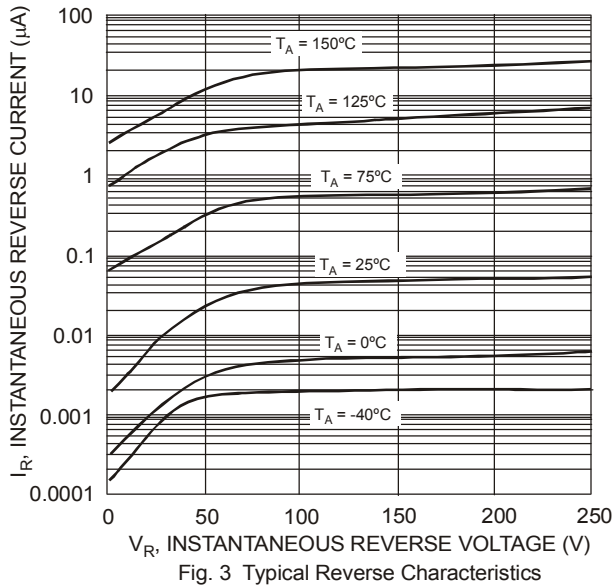
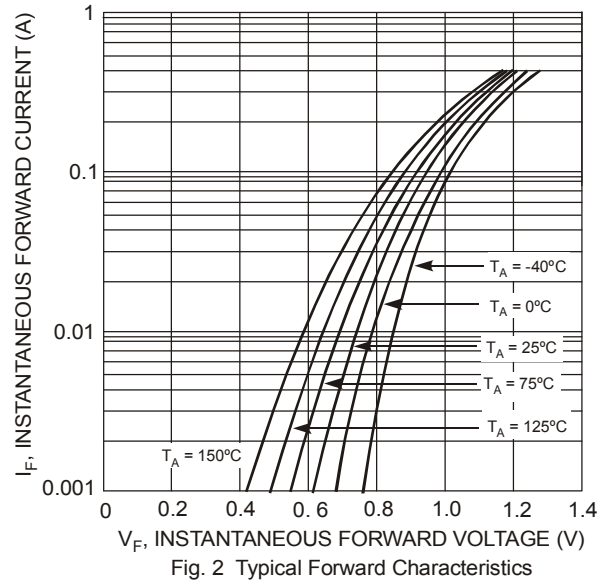
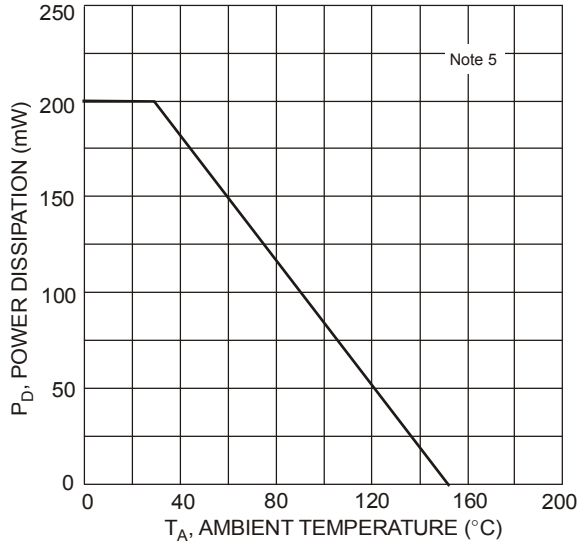
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Power Dissipation | P _D | 200 | mW |
| Thermal Resistance Junction to Ambient Air (Note 5) | R _{θJA} | 625 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

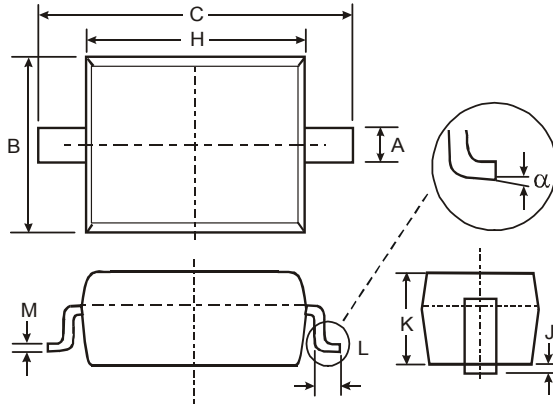
| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|--|--------------------|-------------------|-------------|----------|---|
| Reverse Breakdown Voltage (Note 6) | V _{(BR)R} | 120 200 250 | — | V | I _R = 100µA |
| Forward Voltage | V _F | — | 1.0 1.25 | V | I _F = 100mA I _F = 200mA |
| Peak Reverse Current @ Rated DC Blocking Voltage (Note 6) | I _R | — | 100 15 | nA µA | T _J = +25°C T _J = +100°C |
| Total Capacitance | C _T | — | 5.0 | pF | V _R = 0, f = 1.0MHz |
| Reverse Recovery Time | t _{rr} | — | 50 | ns | I _F = I _R = 30mA, I _{rr} = 0.1 x I _R , R _L = 100Ω |

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
6. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

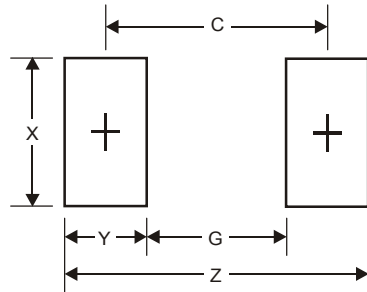
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



| 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 AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the 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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