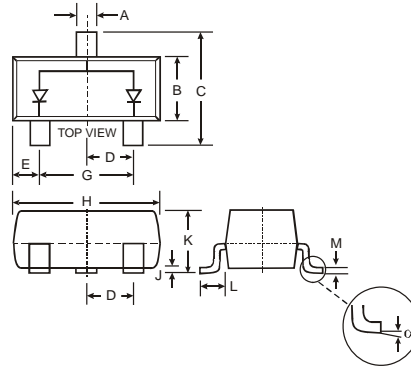


**Features**

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance
- **Lead Free/RoHS Compliant (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**Mechanical Data**

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.008 grams (approximate)



| SOT-23               |       |       |
|----------------------|-------|-------|
| Dim                  | Min   | Max   |
| A                    | 0.37  | 0.51  |
| B                    | 1.20  | 1.40  |
| C                    | 2.30  | 2.50  |
| D                    | 0.89  | 1.03  |
| E                    | 0.45  | 0.60  |
| G                    | 1.78  | 2.05  |
| H                    | 2.80  | 3.00  |
| J                    | 0.013 | 0.10  |
| K                    | 0.903 | 1.10  |
| L                    | 0.45  | 0.61  |
| M                    | 0.085 | 0.180 |
| $\alpha$             | 0°    | 8°    |
| All Dimensions in mm |       |       |

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                                      | Symbol                            | Value              | Unit |
|---|-----------------------------------|--------------------|------|
| Non-Repetitive Peak Reverse Voltage                 | V <sub>RM</sub>                   | 100                | V    |
| Peak Repetitive Reverse Voltage                     | V <sub>RRM</sub>                  | 75                 | V    |
| Working Peak Reverse Voltage                        | V <sub>RWM</sub>                  |                    |      |
| DC Blocking Voltage                                 | V <sub>R</sub>                    |                    |      |
| RMS Reverse Voltage                                 | V <sub>R(RMS)</sub>               | 53                 | V    |
| Forward Continuous Current (Note 1)                 | I <sub>FM</sub>                   | 300                | mA   |
| Non-Repetitive Peak Forward Surge Current           | I <sub>FSM</sub>                  | @ t = 1.0µs<br>2.0 | A    |
|   |                                   | @ t = 1.0s<br>1.0  |      |
| Power Dissipation (Note 1)                          | P <sub>d</sub>                    | 350                | mW   |
| Thermal Resistance Junction to Ambient Air (Note 1) | R <sub>θJA</sub>                  | 357                | °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 | Max                           | Unit                 | Test Condition   |
|------------------------------------|--------------------|-----|-------------------------------|----------------------|--|
| Reverse Breakdown Voltage (Note 2) | V <sub>(BR)R</sub> | 75  | —                             | V                    | I <sub>R</sub> = 2.5µA   |
| Forward Voltage                    | V <sub>F</sub>     | —   | 0.715<br>0.855<br>1.0<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   |
| Reverse Current (Note 2)           | I <sub>R</sub>     | —   | 2.5<br>50<br>30<br>25         | µA<br>µA<br>µA<br>nA | V <sub>R</sub> = 75V<br>V <sub>R</sub> = 75V, T <sub>J</sub> = 150°C<br>V <sub>R</sub> = 25V, T <sub>J</sub> = 150°C<br>V <sub>R</sub> = 20V |
| Total Capacitance                  | C <sub>T</sub>     | —   | 2.0                           | pF                   | V <sub>R</sub> = 0, f = 1.0MHz   |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | 4.0                           | ns                   | 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:
1. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Short duration test pulse used to minimize self-heating effect.
  3. No purposefully added lead.

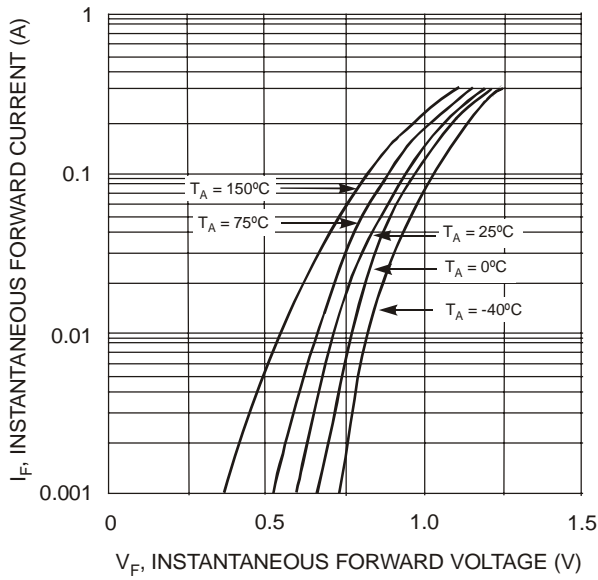


Fig. 1 Forward Characteristics

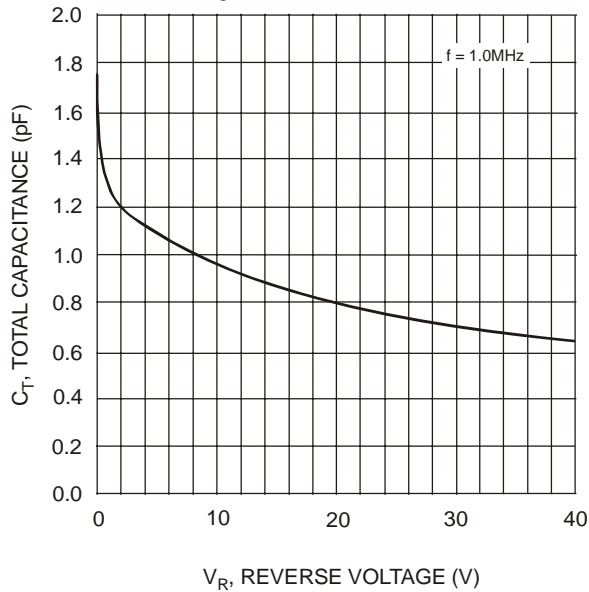


Fig. 3 Typical Capacitance vs. Reverse Voltage

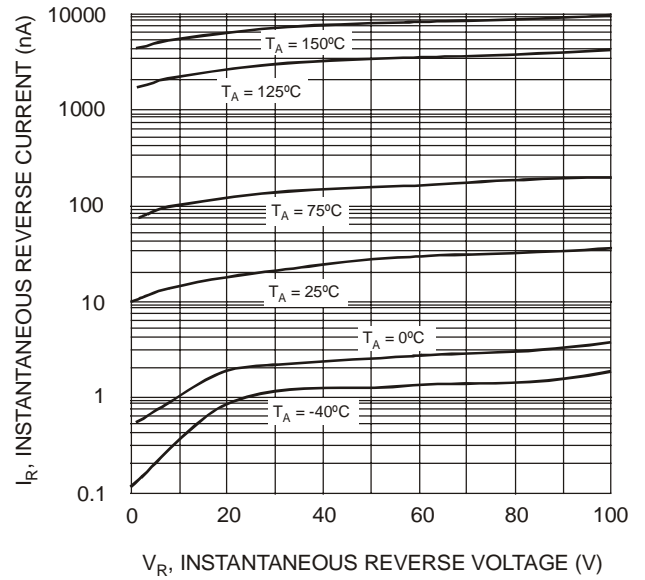


Fig. 2 Typical Reverse Characteristics

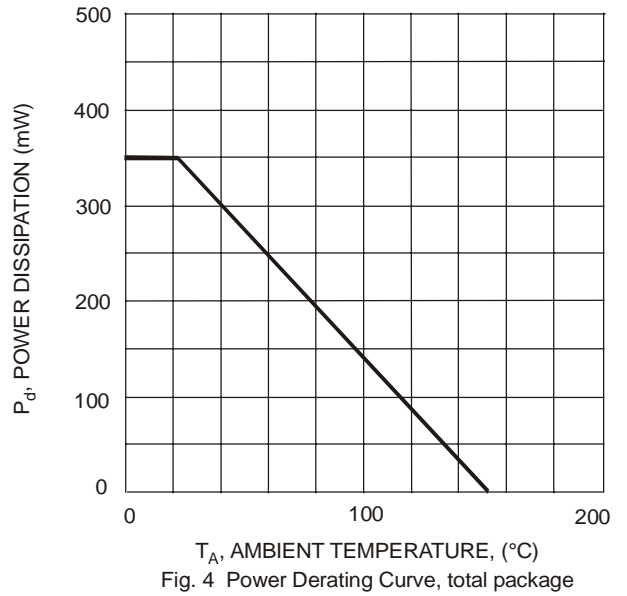


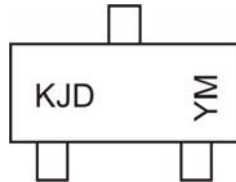
Fig. 4 Power Derating Curve, total package

## Ordering Information (Note 4)

| Device    | Packaging | Shipping         |
|-----------|-----------|------------------|
| BAW56-7-F | SOT-23    | 3000/Tape & Reel |

Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



KJD = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year ex: N = 2002  
 M = Month ex: 9 = September

### Date Code Key

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | J    | K    | L    | M    | N    | P    | R    | S    | T    | U    | V    | W    | X    | Y    | Z    |

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |

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