



BAW156

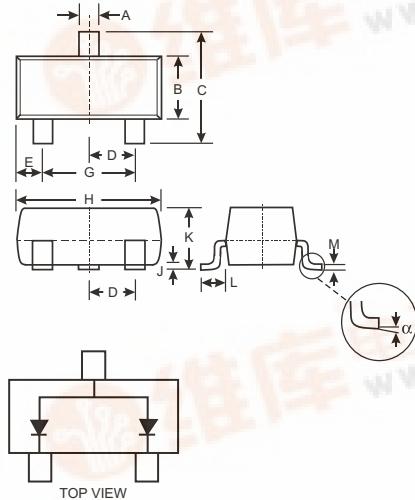
DUAL SURFACE MOUNT LOW LEAKAGE DIODE

## Features

- Surface Mount Package Ideally Suited for Automatic Insertion
- Very Low Leakage Current
- Lead Free/RoHS Compliant (Note 3)

## 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: K53, 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 |
|        | 0     | 8     |

All Dimensions in mm

## Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise specified

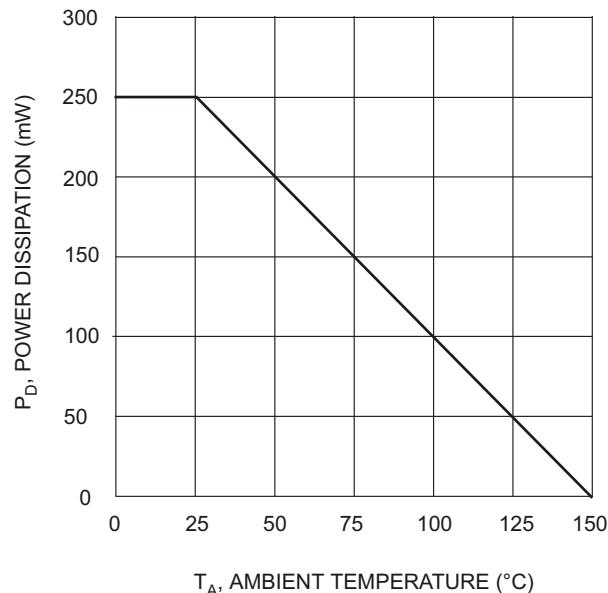
| Characteristic  | Symbol                       | Value       | Unit |
|---|------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage   | $V_{RRM}$                    | 85          | V    |
| Working Peak Reverse Voltage  | $V_{RWM}$                    |             |      |
| DC Blocking Voltage   | $V_R$                        |             |      |
| RMS Reverse Voltage   | $V_{R(RMS)}$                 | 60          | V    |
| Forward Continuous Current (Note 2)   | Single diode<br>Double diode | $I_{FM}$    | mA   |
| Repetitive Peak Forward Current (Note 2)  |                              | $I_{FRM}$   | mA   |
| Non-Repetitive Peak Forward Surge Current @ $t = 1.0\text{ s}$<br>@ $t = 1.0\text{ms}$<br>@ $t = 1.0\text{s}$ |                              | $I_{FSM}$   | A    |
| Power Dissipation (Note 2)  | $P_d$                        | 250         | mW   |
| Thermal Resistance Junction to Ambient Air (Note 2)   | $R_{JA}$                     | 500         | C/W  |
| Operating and Storage Temperature Range   | $T_j, T_{STG}$               | -65 to +150 | C    |

## Electrical Characteristics @ $T_A = 25^\circ C$ unless otherwise specified

| Characteristic                     | Symbol      | Min | Typ | Max                        | Unit | Test Condition   |
|------------------------------------|-------------|-----|-----|----------------------------|------|--|
| Reverse Breakdown Voltage (Note 1) | $V_{(BR)R}$ | 85  |     |                            | V    | $I_R = 100\text{ A}$   |
| Forward Voltage                    | $V_F$       |     |     | 0.90<br>1.0<br>1.1<br>1.25 | V    | $I_F = 1.0\text{mA}$<br>$I_F = 10\text{mA}$<br>$I_F = 50\text{mA}$<br>$I_F = 150\text{mA}$ |
| Leakage Current (Note 1)           | $I_R$       |     |     | 5.0<br>80                  | nA   | $V_R = 75\text{V}$<br>$V_R = 75\text{V}, T_j = 150^\circ C$                                |
| Total Capacitance                  | $C_T$       |     | 3   |                            | pF   | $V_R = 0, f = 1.0\text{MHz}$   |
| Reverse Recovery Time              | $t_{rr}$    |     |     | 3.0                        | s    | $I_F = I_R = 10\text{mA}$ ,<br>$I_{rr} = 0.1 \times I_R, R_L = 100$                        |

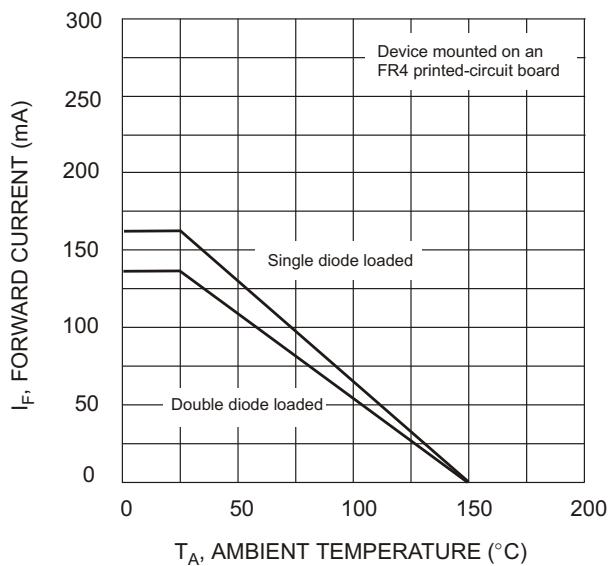
Notes:

- Short duration test pulse to minimize self-heating effect.
- 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>.
- No purposefully added lead.



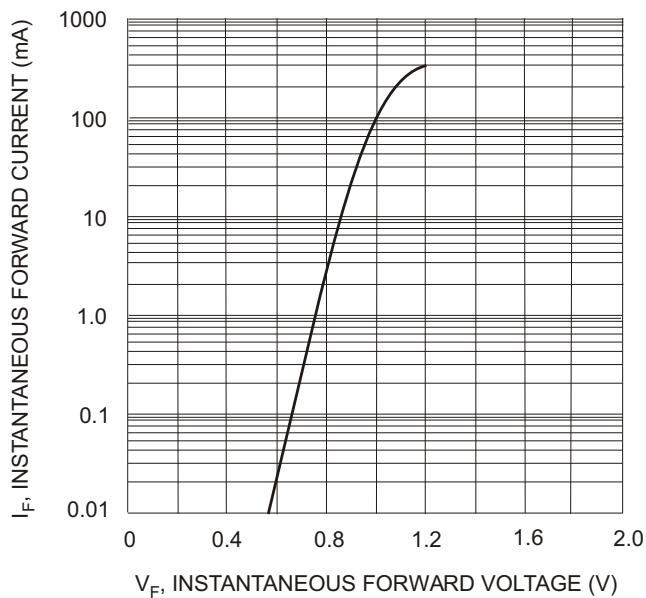
T<sub>A</sub>, AMBIENT TEMPERATURE (°C)

Fig. 1 Power Derating Curve



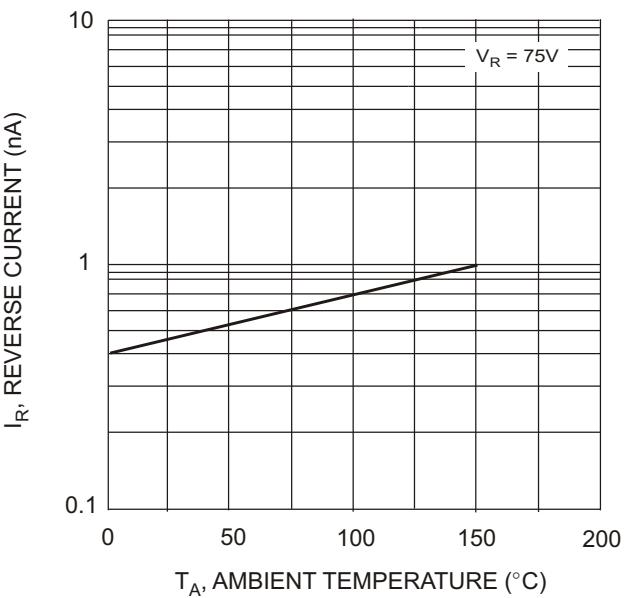
T<sub>A</sub>, AMBIENT TEMPERATURE (°C)

Fig. 2 Current Derating Curve



V<sub>F</sub>, INSTANTANEOUS FORWARD VOLTAGE (V)

Fig. 3 Typical Forward Characteristics



T<sub>A</sub>, AMBIENT TEMPERATURE (°C)

Fig. 4 Typical Reverse Characteristics

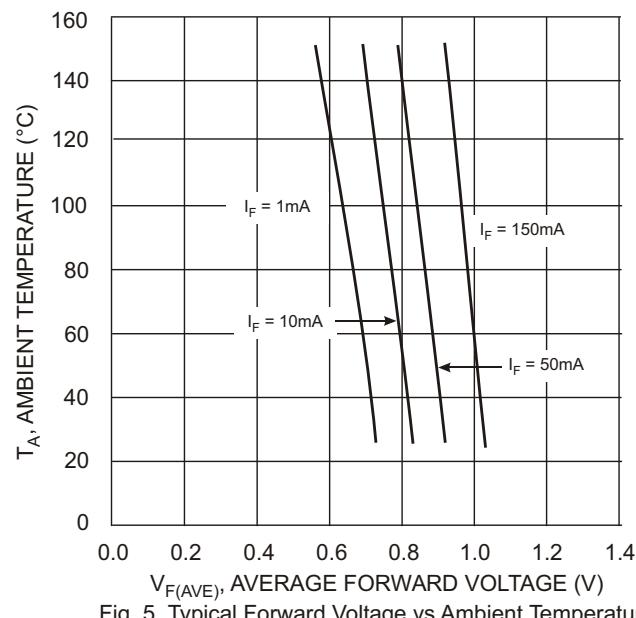


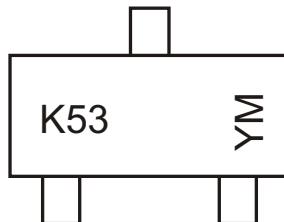
Fig. 5 Typical Forward Voltage vs Ambient Temperature

## Ordering Information (Note 4)

| Device     | Packaging | Shipping         |
|------------|-----------|------------------|
| BAW156-7-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



K53 = 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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | J    | K    | L    | M    | N    | P    | R    | S    | T    | U    | V    | W    |

| Year | 2010 | 2011 | 2012 |
|------|------|------|------|
| Code | X    | Y    | Z    |

| Month | Jan | Feb | March | 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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