

# BAL99LT1G

## Switching Diode

### Features

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### MAXIMUM RATINGS

| Rating                     | Symbol | Value | Unit             |
|----------------------------|--------|-------|------------------|
| Continuous Reverse Voltage | $V_R$  | 70    | Vdc              |
| Peak Forward Current       | $I_F$  | 100   | mA <sub>dc</sub> |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### THERMAL CHARACTERISTICS

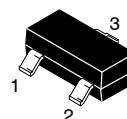
| Characteristic  | Symbol          | Max         | Unit                      |
|---|-----------------|-------------|---------------------------|
| Total Device Dissipation FR-5 Board<br>(Note 1), $T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$        | $P_D$           | 225         | mW                        |
| Thermal Resistance,<br>Junction-to-Ambient  | $R_{\theta JA}$ | 556         | $^\circ\text{C}/\text{W}$ |
| Total Device Dissipation Alumina<br>Substrate, (Note 2) $T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_D$           | 300         | mW                        |
| Thermal Resistance,<br>Junction-to-Ambient  | $R_{\theta JA}$ | 2.4         | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance,<br>Junction-to-Ambient  | $R_{\theta JA}$ | 417         | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature  | $T_J, T_{stg}$  | -55 to +150 | $^\circ\text{C}$          |

1. FR-5 =  $1.0 \times 0.75 \times 0.062$  in.
2. Alumina =  $0.4 \times 0.3 \times 0.024$  in 99.5% alumina.



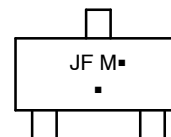
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SOT-23  
CASE 318  
STYLE 18

### MARKING DIAGRAM



JF = Specific Device Code  
M = Date Code\*

▪ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation and/or overbar may vary depending upon manufacturing location.

### ORDERING INFORMATION

| Device    | Package             | Shipping†          |
|-----------|---------------------|--------------------|
| BAL99LT1G | SOT-23<br>(Pb-Free) | 3000 / Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

# BAL99LT1G

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic   | Symbol     | Min              | Max                        | Unit          |
|--|------------|------------------|----------------------------|---------------|
| <b>OFF CHARACTERISTICS</b>   |            |                  |                            |               |
| Reverse Voltage Leakage Current<br>( $V_R = 70\text{ Vdc}$ )<br>( $V_R = 25\text{ Vdc}$ , $T_J = 150^\circ\text{C}$ )<br>( $V_R = 70\text{ Vdc}$ , $T_J = 150^\circ\text{C}$ ) | $I_R$      | -<br>-<br>-      | 2.5<br>30<br>50            | $\mu\text{A}$ |
| Reverse Breakdown Voltage, ( $I_R = 100\ \mu\text{A}$ )  | $V_{(BR)}$ | 70               | -                          | Vdc           |
| Forward Voltage,<br>( $I_F = 1.0\ \text{mA}$ )<br>( $I_F = 10\ \text{mA}$ )<br>( $I_F = 50\ \text{mA}$ )<br>( $I_F = 150\ \text{mA}$ )   | $V_F$      | -<br>-<br>-<br>- | 715<br>855<br>1000<br>1250 | mV            |
| Recovery Current, ( $I_F = 10\ \text{mA}$ , $V_R = 5.0\ \text{Vdc}$ , $R_L = 500\ \Omega$ )  | $Q_S$      | -                | 45                         | pC            |
| Diode Capacitance, ( $V_R = 0$ , $f = 1.0\ \text{MHz}$ )   | $C_D$      | -                | 1.5                        | pF            |
| Reverse Recovery Time,<br>( $I_F = I_R = 10\ \text{mA}$ , $R_L = 100\ \Omega$ , measured at $I_R = 1.0\ \text{mA}$ )   | $t_{rr}$   | -                | 6.0                        | ns            |
| Forward Recovery Voltage, ( $I_F = 10\ \text{mA}$ , $t_r = 20\ \text{ns}$ )  | $V_{FR}$   | -                | 1.75                       | Vdc           |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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## TYPICAL CHARACTERISTICS

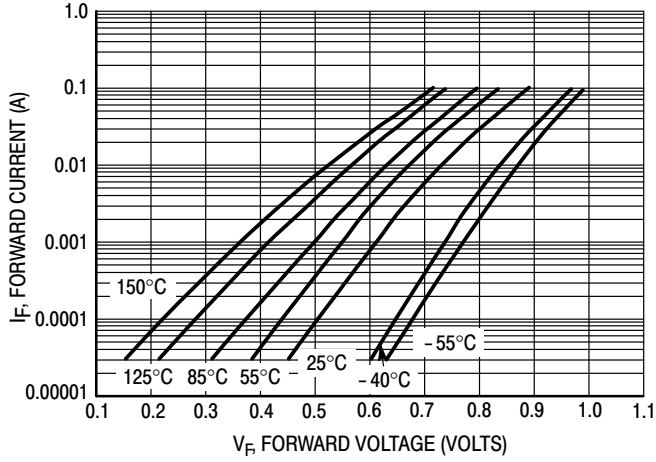


Figure 1. Forward Voltage

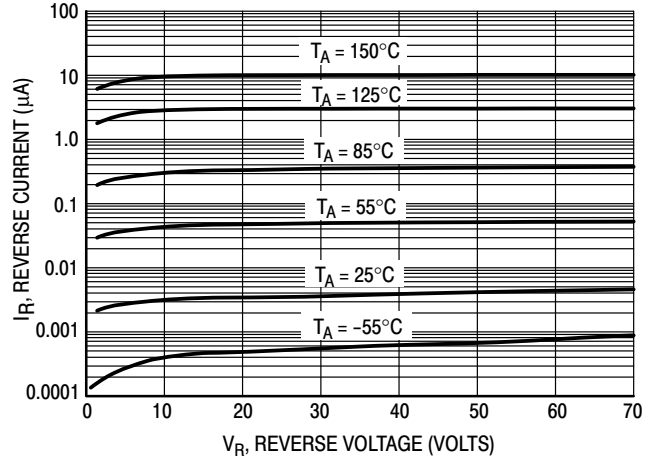


Figure 2. Leakage Current

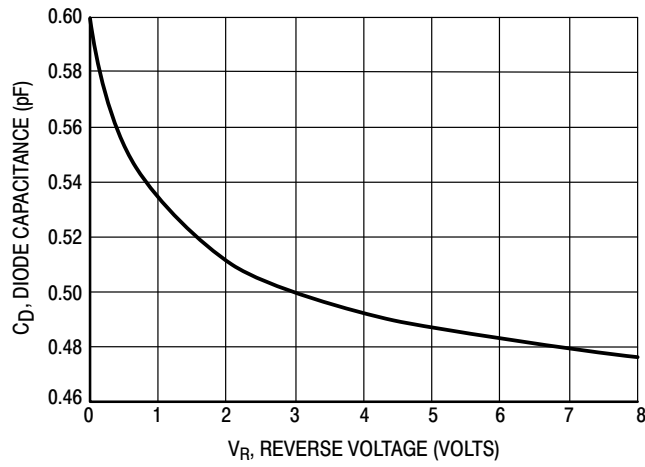


Figure 3. Capacitance

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