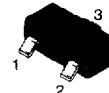


# Switching Diode

## BAL99LT1



CASE 318-08, STYLE 18  
SOT-23 (TO-236AB)

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Continuous Reverse Voltage	$V_R$	70	Vdc
Peak Forward Current	$I_F$	100	mAdc

### THERMAL CHARACTERISTICS

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

### DEVICE MARKING

BAL99LT1 = JF

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

Characteristic	Symbol	Min	Max	Unit
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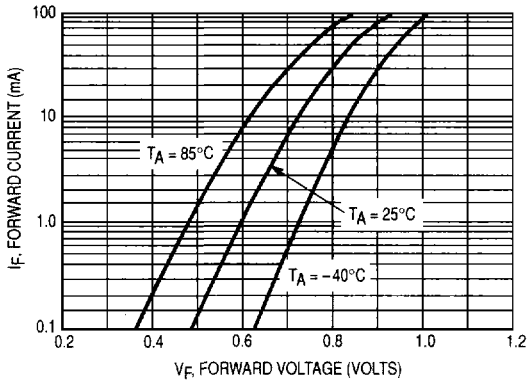
### OFF CHARACTERISTICS

Reverse Voltage Leakage Current ( $V_R = 70$ Vdc) ( $V_R = 25$ Vdc, $T_J = 150^\circ\text{C}$ ) ( $V_R = 70$ Vdc, $T_J = 150^\circ\text{C}$ )	$I_R$	—	2.5 30 50	$\mu\text{Adc}$
Reverse Breakdown Voltage ( $I_R = 100 \mu\text{Adc}$ )	$V_{(BR)}$	70	—	Vdc
Forward Voltage ( $I_F = 1.0$ mAdc) ( $I_F = 10$ mAdc) ( $I_F = 50$ mAdc) ( $I_F = 150$ mAdc)	$V_F$	—	715 855 1000 1250	mV
Recovery Current ( $I_F = 10$ mAdc, $V_R = 5.0$ Vdc, $R_L = 500 \Omega$ )	$Q_S$	—	45	pC
Diode Capacitance ( $V_R = 0$ , $f = 1.0$ MHz)	$C_D$	—	1.5	pF
Reverse Recovery Time ( $I_F = I_R = 10$ mAdc, $R_L = 100 \Omega$ , measured at $I_R = 1.0$ mAdc)	$t_{rr}$	—	6.0	ns
Forward Recovery Voltage ( $I_F = 10$ mAdc, $t_r = 20$ ns)	$V_{FR}$	—	1.75	Vdc

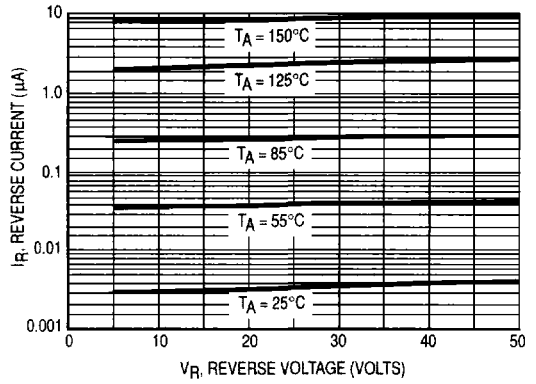
1. FR-5 =  $1.0 \times 0.75 \times 0.062$  in.

2. Alumina =  $0.4 \times 0.3 \times 0.024$  in. 99.5% alumina.

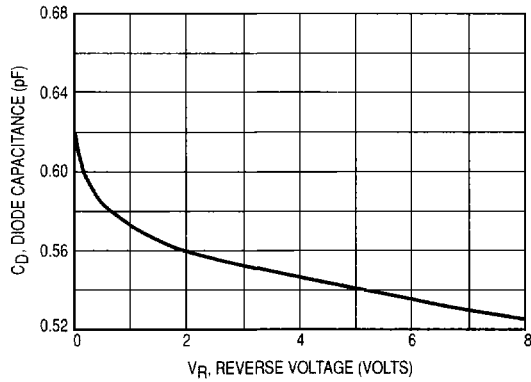
**TYPICAL CHARACTERISTICS**



**Figure 1. Forward Voltage**



**Figure 2. Leakage Current**



**Figure 3. Capacitance**