

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

DEVICE MARKING

BAL99LT1 = JF

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (2) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300 2.4	mW 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	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Max	Unit
----------------	--------	-----	-----	------

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	μAdc
Reverse Breakdown Voltage ($I_R = 100$ μAdc)	$V_{(BR)}$	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, $R_L = 500$ Ω)	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, $R_L = 100$ Ω , 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 x 0.75 x 0.062 in.

2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

BAL99LT1

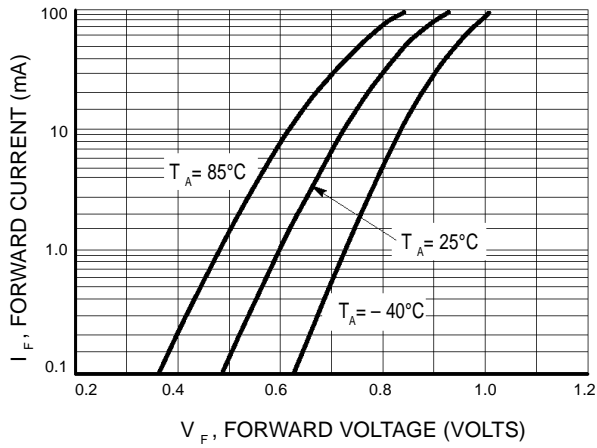


Figure 1. Forward Voltage

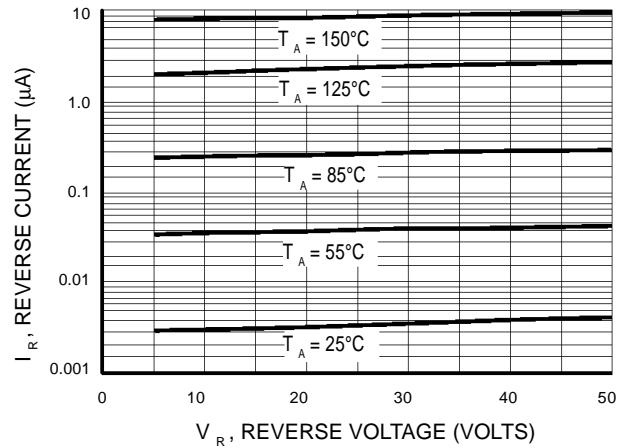


Figure 2. Leakage Current

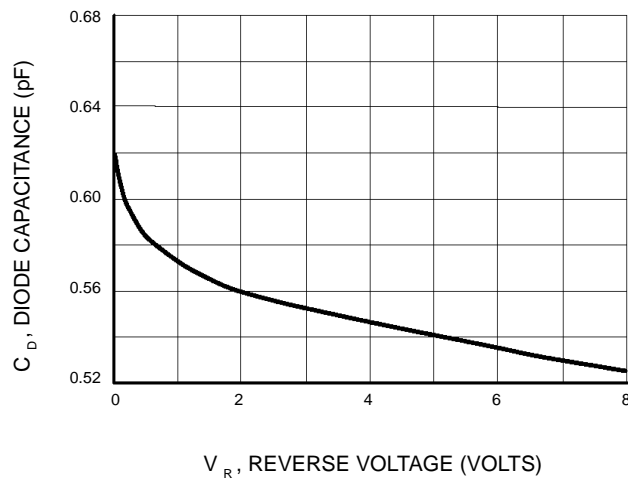


Figure 3. Capacitance