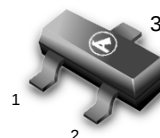


Switching Diode



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) $T_A = 25^\circ\text{C}$	P_D	225	mW
Derate above 25°C		1.8	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate, (2) $T_A = 25^\circ\text{C}$	P_D	300	mW
Derate above 25°C		2.4	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C/W}$
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
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OFF CHARACTERISTICS

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

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

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

BAL99LT1

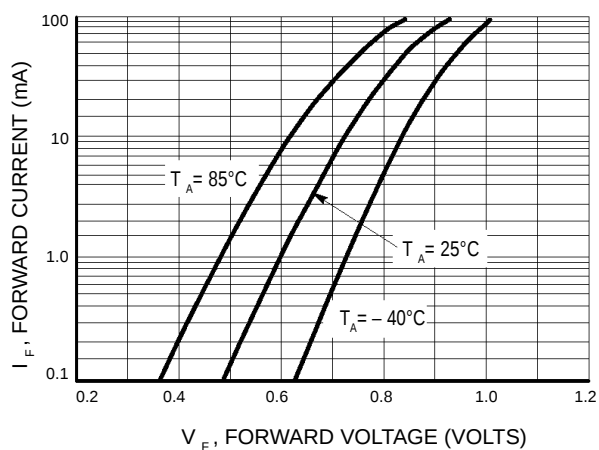


Figure 1. Forward Voltage

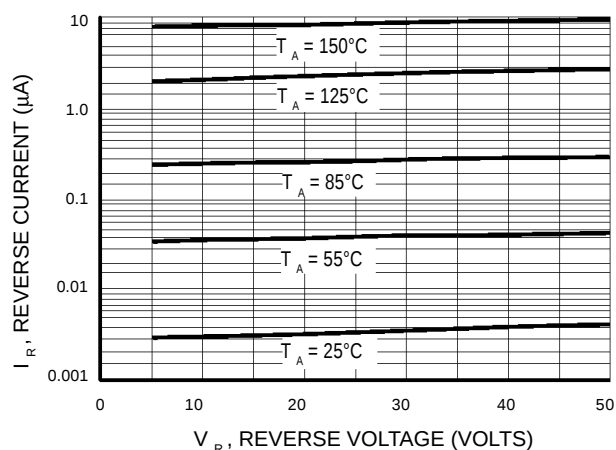


Figure 2. Leakage Current

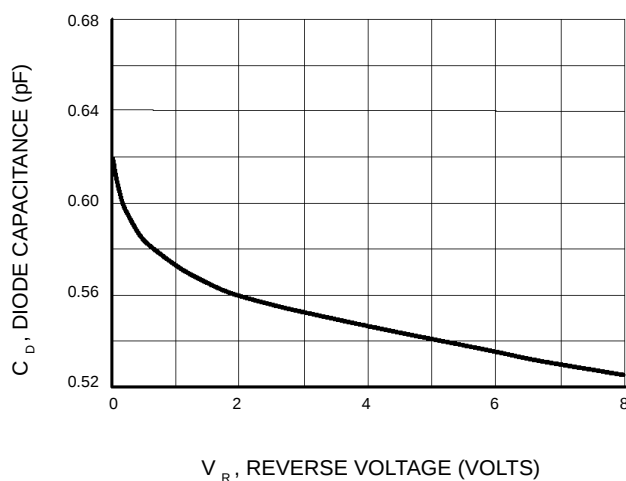


Figure 3. Capacitance