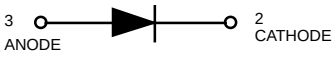
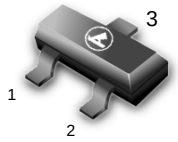
Switching Diode



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°C	P_D	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (2) T_A = 25°C	P_D	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J , T_{stg}	–55 to +150	°C

ELECTRICAL CHARACTERISTICS (T A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Voltage Leakage Current	I_R			µAdc
(V_R = 70 Vdc)		—	2.5	
(V_R = 25 Vdc, T_J = 150°C)		—	30	
(V_R = 70 Vdc, T_J = 150°C)		—	50	
Reverse Breakdown Voltage (I_R = 100 µAdc)	$V_{(BR)}$	70	—	Vdc
Forward Voltage	V_F			mV
(I_F = 1.0 mAdc)		—	715	
(I_F = 10 mAdc)		—	855	
(I_F = 50 mAdc)		—	1000	
(I_F = 150 mAdc)		—	1250	
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

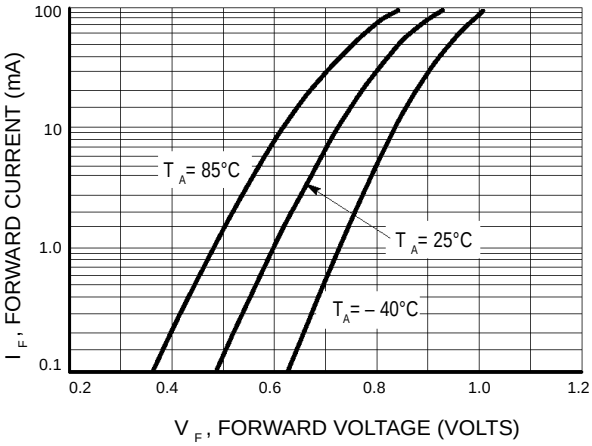


Figure 1. Forward Voltage

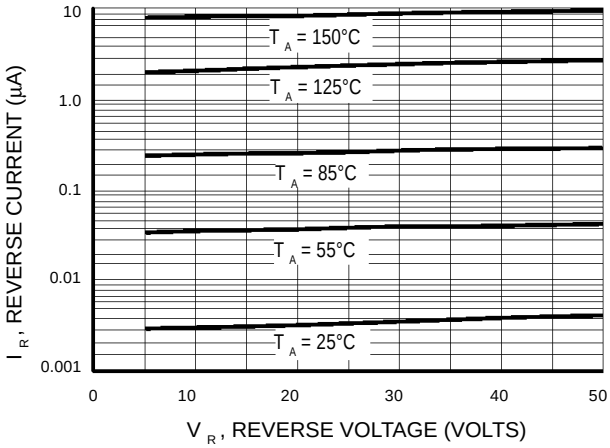


Figure 2. Leakage Current

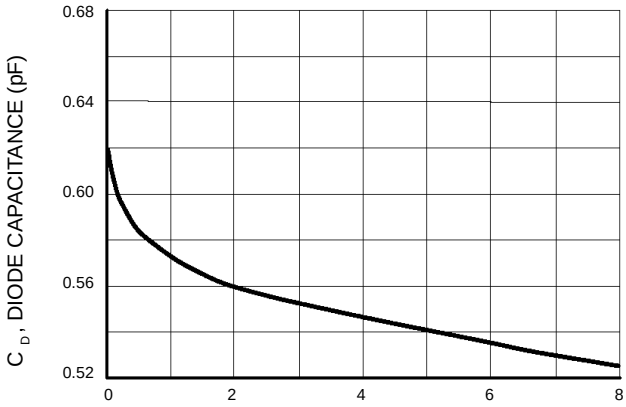


Figure 3. Capacitance