

BAL99LT1

Switching Diode

Features

- Pb-Free Package is Available

MAXIMUM RATINGS

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

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

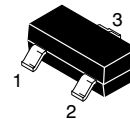
THERMAL CHARACTERISTICS

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

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

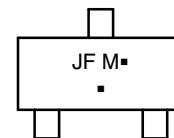


ON Semiconductor®



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)

ORDERING INFORMATION

Device	Package	Shipping†
BAL99LT1	SOT-23	3000 / Tape & Reel
BAL99LT1G	SOT-23 (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.

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Voltage Leakage Current ($V_R = 70\text{ Vdc}$) ($V_R = 25\text{ Vdc}$, $T_J = 150^\circ\text{C}$) ($V_R = 70\text{ Vdc}$, $T_J = 150^\circ\text{C}$)	I_R	-	2.5 30 50	μAdc
Reverse Breakdown Voltage, ($I_R = 100\ \mu\text{Adc}$)	$V_{(BR)}$	70	-	Vdc
Forward Voltage, ($I_F = 1.0\ \text{mA}$) ($I_F = 10\ \text{mA}$) ($I_F = 50\ \text{mA}$) ($I_F = 150\ \text{mA}$)	V_F	-	715 855 1000 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, ($I_F = I_R = 10\ \text{mA}$, $R_L = 100\ \Omega$, 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

TYPICAL CHARACTERISTICS

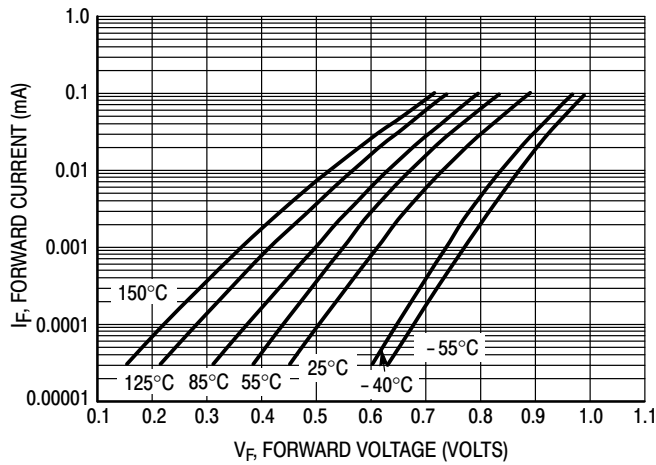


Figure 1. Forward Voltage

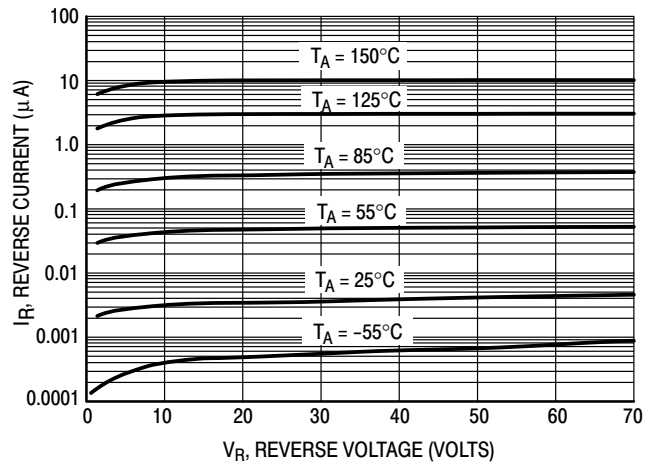


Figure 2. Leakage Current

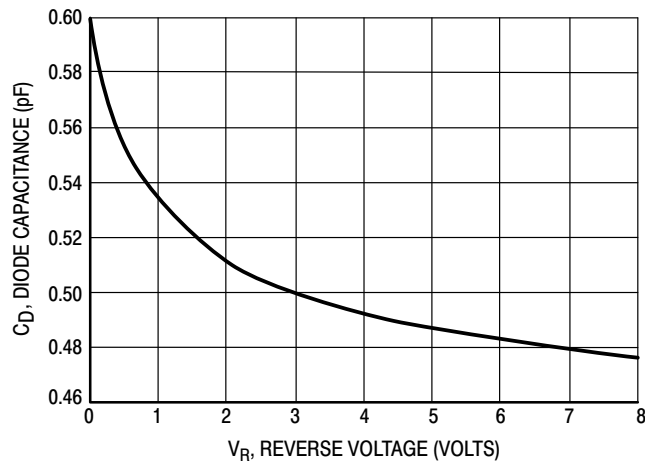
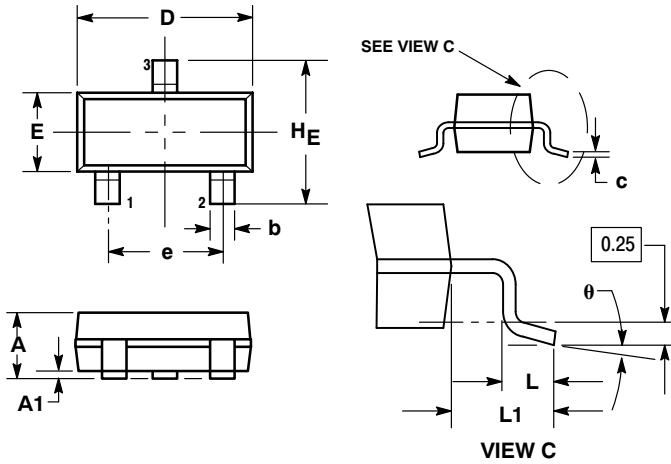


Figure 3. Capacitance

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PACKAGE DIMENSIONS

SOT-23 (TO-236)
CASE 318-08
ISSUE AN



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.10	0.20	0.30	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104

STYLE 18:

- PIN 1. NO CONNECTION
2. CATHODE
3. ANODE

SOLDERING FOOTPRINT

