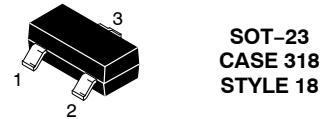


Switching Diode

BAL99LT1G

Features

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant



SOT-23
CASE 318
STYLE 18

MAXIMUM RATINGS

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

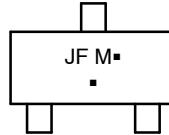
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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 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, (Note 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	$^\circ\text{C}$

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.

MARKING DIAGRAM



JF Specific Device Code

M = Date Code*

▪ = Pb-Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping [†]
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.

BAL99LT1G

ELECTRICAL CHARACTERISTICS (T_A = 25°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°C) (V _R = 70 Vdc, T _J = 150°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 mA) (I _F = 10 mA) (I _F = 50 mA) (I _F = 150 mA)	V _F	— — — —	715 855 1000 1250	mV
Recovery Current, (I _F = 10 mA, 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 mA, R _L = 100 Ω, measured at I _R = 1.0 mA)	t _{rr}	—	6.0	ns
Forward Recovery Voltage, (I _F = 10 mA, t _r = 20 ns)	V _{FR}	—	1.75	Vdc

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

BAL99LT1G

TYPICAL CHARACTERISTICS

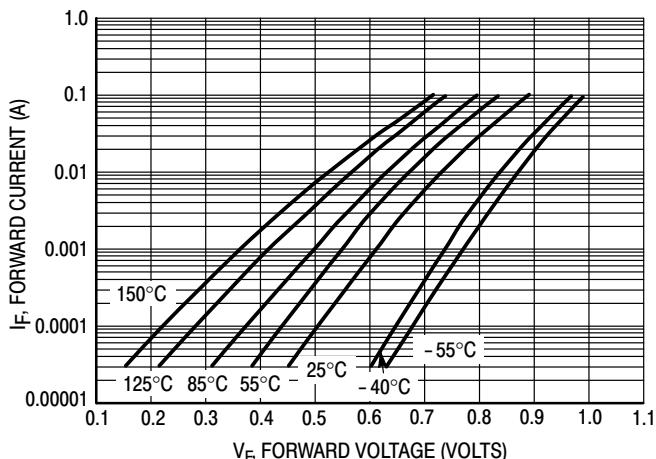


Figure 1. Forward Voltage

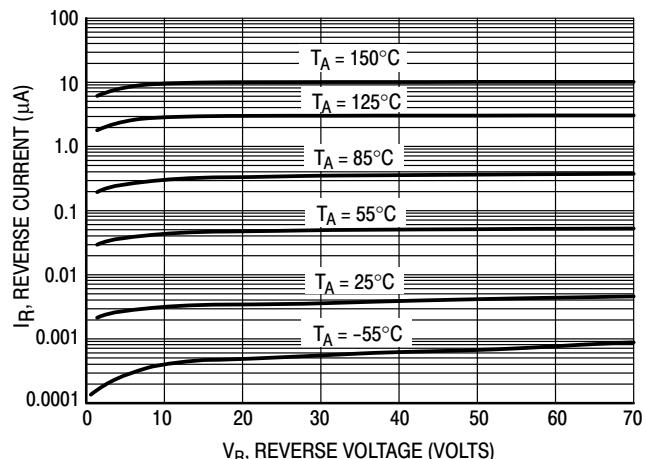


Figure 2. Leakage Current

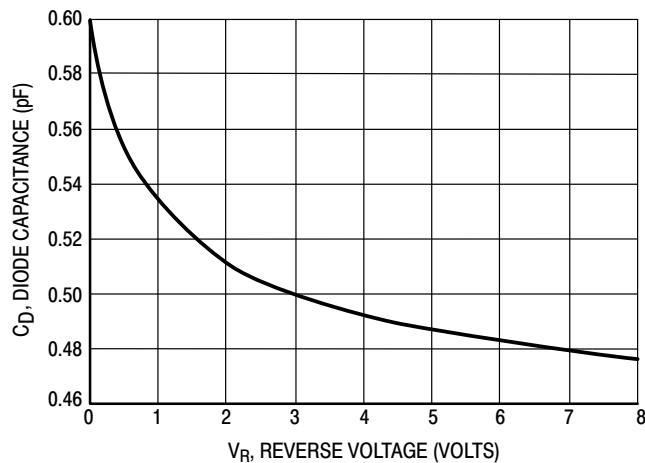


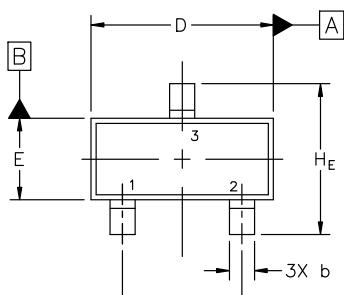
Figure 3. Capacitance



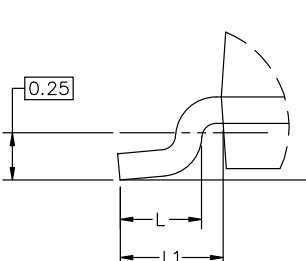
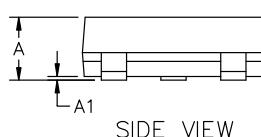
SCALE 4:1

SOT-23 (TO-236) 2.90x1.30x1.00 1.90P
CASE 318
ISSUE AU

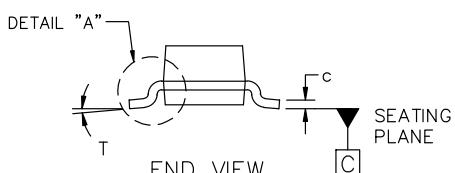
DATE 14 AUG 2024



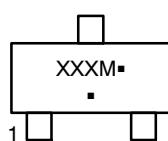
TOP VIEW

DETAIL "A"
Scale 3:1

SIDE VIEW



END VIEW

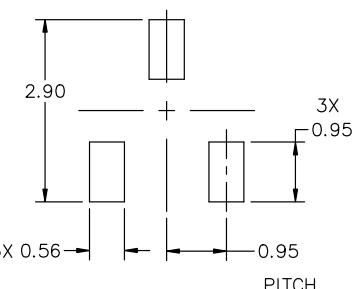
**GENERIC
MARKING DIAGRAM***


XXX = Specific Device Code

M = Date Code

□ = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "■", may or may not be present. Some products may not follow the Generic Marking.


**RECOMMENDED
MOUNTING FOOTPRINT**

* For additional information on our Pb-Free strategy and soldering details, please download the onsemi Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MILLIMETERS			
DIM	MIN	NOM	MAX
A	0.89	1.00	1.11
A1	0.01	0.06	0.10
b	0.37	0.44	0.50
c	0.08	0.14	0.20
D	2.80	2.90	3.04
E	1.20	1.30	1.40
e	1.78	1.90	2.04
L	0.30	0.43	0.55
L1	0.35	0.54	0.69
HE	2.10	2.40	2.64
T	0°	---	10°

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSIONS: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

STYLES ON PAGE 2

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SOT-23 (TO-236) 2.90x1.30x1.00 1.90P

CASE 318

ISSUE AU

DATE 14 AUG 2024

STYLE 1 THRU 5:
CANCELLEDSTYLE 6:
PIN 1. BASE
2. Emitter
3. CollectorSTYLE 7:
PIN 1. Emitter
2. Base
3. CollectorSTYLE 8:
PIN 1. Anode
2. No Connection
3. CathodeSTYLE 9:
PIN 1. Anode
2. Anode
3. CathodeSTYLE 10:
PIN 1. Drain
2. Source
3. GateSTYLE 11:
PIN 1. Anode
2. Cathode
3. Cathode-AnodeSTYLE 12:
PIN 1. Cathode
2. Cathode
3. AnodeSTYLE 13:
PIN 1. Source
2. Drain
3. GateSTYLE 14:
PIN 1. Cathode
2. Gate
3. AnodeSTYLE 15:
PIN 1. Gate
2. Cathode
3. AnodeSTYLE 16:
PIN 1. Anode
2. Cathode
3. CathodeSTYLE 17:
PIN 1. No Connection
2. Anode
3. CathodeSTYLE 18:
PIN 1. No Connection
2. Cathode
3. AnodeSTYLE 19:
PIN 1. Cathode
2. Anode
3. Cathode-AnodeSTYLE 20:
PIN 1. Cathode
2. Anode
3. GateSTYLE 21:
PIN 1. Gate
2. Source
3. DrainSTYLE 22:
PIN 1. Return
2. Output
3. InputSTYLE 23:
PIN 1. Anode
2. Anode
3. CathodeSTYLE 24:
PIN 1. Gate
2. Drain
3. SourceSTYLE 25:
PIN 1. Anode
2. Cathode
3. GateSTYLE 26:
PIN 1. Cathode
2. Anode
3. No ConnectionSTYLE 27:
PIN 1. Cathode
2. Cathode
3. CathodeSTYLE 28:
PIN 1. Anode
2. Anode
3. Anode

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