# BAL99LT1G

# **Switching Diode**

## Features

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



# **ON Semiconductor®**

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## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Continuous Reverse Voltage	V <sub>R</sub>	70	Vdc
Peak Forward Current	١ <sub>F</sub>	100	mAdc

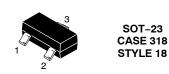
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

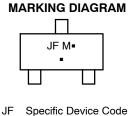
## THERMAL CHARACTERISTICS

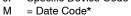
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 1), T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	225 1.8	mW mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{\thetaJA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (Note 2) T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	300 2.4	mW mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T <sub>J</sub> , T <sub>stg</sub>	–55 to +150	°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.







= 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 <sup>†</sup>
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<sub>A</sub> = 25°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 <sub>R</sub>		2.5 30 50	μAdc
Reverse Breakdown Voltage, (I <sub>R</sub> = 100 µAdc)	V <sub>(BR)</sub>	70	-	Vdc
Forward Voltage, $(I_F = 1.0 \text{ mAdc})$ $(I_F = 10 \text{ mAdc})$ $(I_F = 50 \text{ mAdc})$ $(I_F = 150 \text{ mAdc})$	V <sub>F</sub>		715 855 1000 1250	mV
Recovery Current, (I <sub>F</sub> = 10 mAdc, V <sub>R</sub> = 5.0 Vdc, R <sub>L</sub> = 500 $\Omega$ )	Q <sub>S</sub>	-	45	рС
Diode Capacitance, (V <sub>R</sub> = 0, f = 1.0 MHz)	CD	-	1.5	pF
Reverse Recovery Time, (I <sub>F</sub> = I <sub>R</sub> = 10 mAdc, R <sub>L</sub> = 100 $\Omega$ , measured at I <sub>R</sub> = 1.0 mAdc)	t <sub>rr</sub>	-	6.0	ns
Forward Recovery Voltage, ( $I_F$ = 10 mAdc, $t_r$ = 20 ns)	V <sub>FR</sub>	-	1.75	Vdc

# **TYPICAL CHARACTERISTICS**

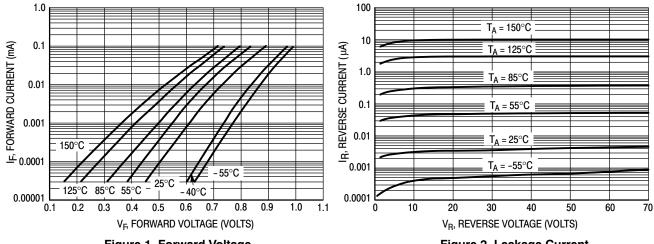
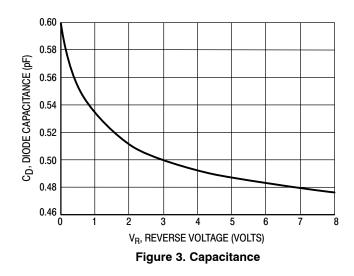




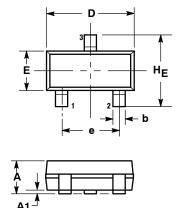
Figure 2. Leakage Current

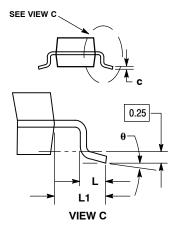


# BAL99LT1G

### PACKAGE DIMENSIONS

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





NOTES

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

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
Α	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
q	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
Е	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
Г	0.10	0.20	0.30	0.004	0.008	0.012
Ľ	0.35	0.54	0.69	0.014	0.021	0.029
ΗE	2.10	2.40	2.64	0.083	0.094	0.104

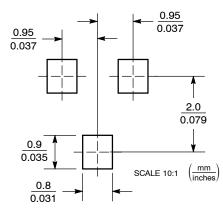
STYLE 18:

PIN 1. NO CONNECTION

2. CATHODE

ANODE З.

#### SOLDERING FOOTPRINT



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