

# High-Speed Switching Diode

## Features

- We declare that the material of product compliance with RoHS requirements.

## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	100	Vdc
Forward Current	$I_F$	200	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mAdc

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 1.) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	225	mW
		1.8	$\text{mW}/^\circ\text{C}$
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 $25^\circ\text{C}$	$P_D$	300	mW
		2.4	$\text{mW}/^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

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

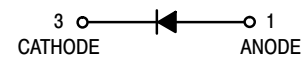
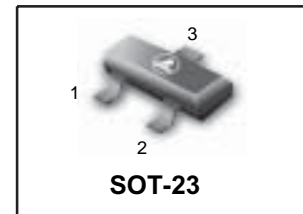
Characteristic	Symbol	Min	Max	Unit
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## OFF CHARACTERISTICS

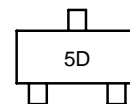
Reverse Breakdown Voltage ( $I_R = 100 \mu\text{Adc}$ )	$V_{(BR)}$	100	-	Vdc
Reverse Voltage Leakage Current ( $V_R = 20 \text{Vdc}$ ) ( $V_R = 75 \text{Vdc}$ )	$I_R$	-	25 5.0	nAdc $\mu\text{Adc}$
Diode Capacitance ( $V_R = 0, f = 1.0 \text{MHz}$ )	$C_T$	-	4.0	pF
Forward Voltage ( $I_F = 10 \text{mAdc}$ )	$V_F$	-	1.0	Vdc
Reverse Recovery Time ( $I_F = I_R = 10 \text{mAdc}$ ) (Figure 1)	$t_{rr}$	-	4.0	ns

1. FR-5 =  $1.0 \times 0.75 \times 0.062 \text{ in.}$
2. Alumina =  $0.4 \times 0.3 \times 0.024 \text{ in. } 99.5\% \text{ alumina.}$

## LMBD914LT1G



## MARKING DIAGRAM

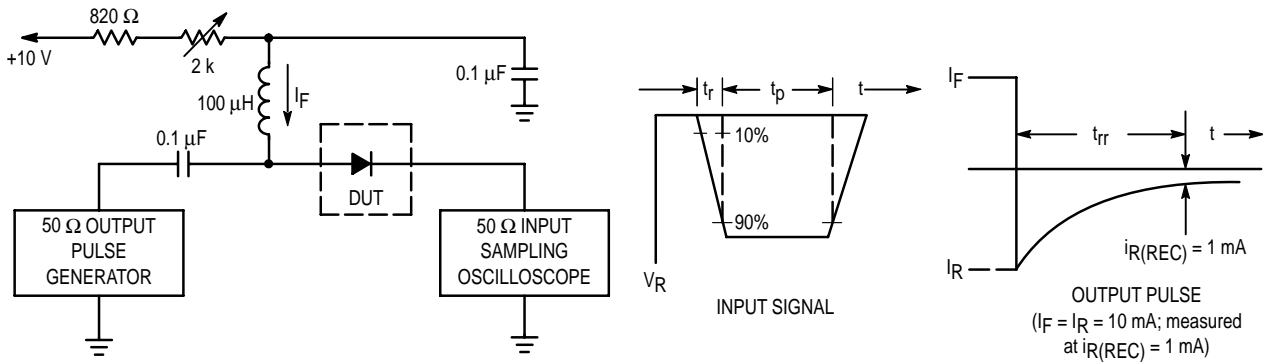


5D = Device Code

## ORDERING INFORMATION

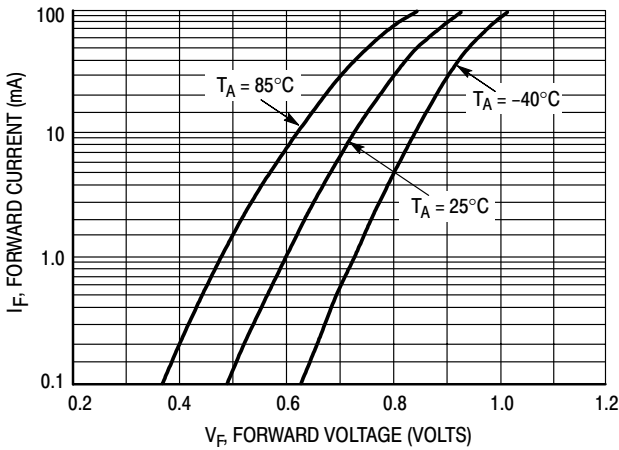
Device	Package	Shipping <sup>†</sup>
LMBD914LT1G	SOT-23	3000/Tape & Reel
LMBD914LT3G	SOT-23	10000/Tape & Reel

**LMBD914LT1G**

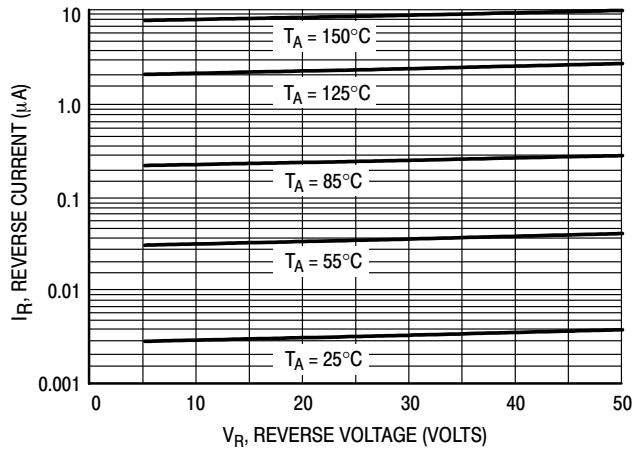


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

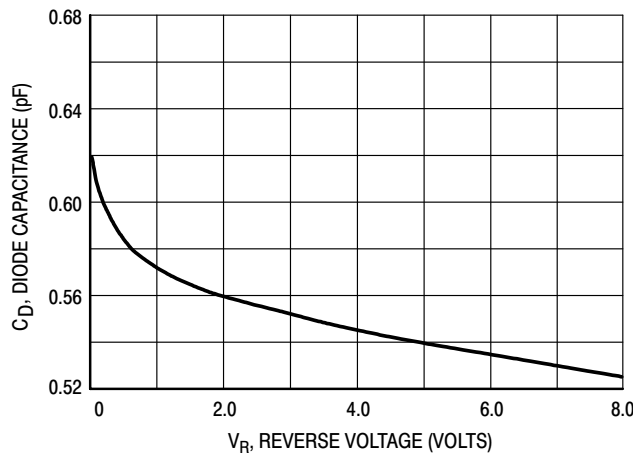
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



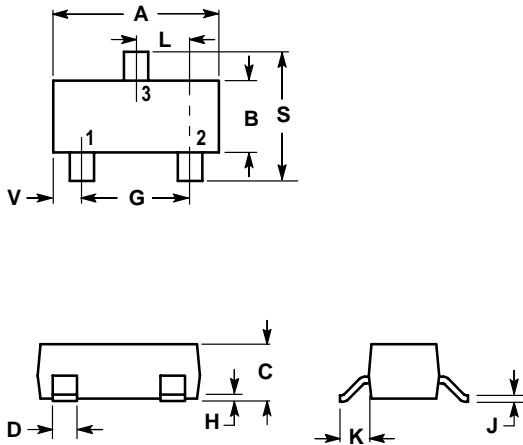
**Figure 3. Leakage Current**



**Figure 4. Capacitance**

**LMBD914LT1G**

**SOT-23**



**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

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

