MMBD914LT1

Preferred Device

High-Speed Switching Diode

Features

• Pb-Free Package is Available

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V _R	100	Vdc
Forward Current	IF	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) $T_{\Delta} = 25^{\circ}C$	P _D	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{ heta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate (Note 2) T _A = 25°C	P _D	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{ heta JA}$	417	°C/W
Junction and Storage Temperature Range	T _J , T _{stg}	-55 to +150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit	
OFF CHARACTERISTICS					
Reverse Breakdown Voltage (I _R = 100 μAdc)	V _(BR)	100	-	Vdc	
Reverse Voltage Leakage Current (V _R = 20 Vdc) (V _R = 75 Vdc)	I _R	- -	25 5.0	nAdc μAdc	
Diode Capacitance (V _R = 0, f = 1.0 MHz)	C _T	_	4.0	pF	
Forward Voltage (I _F = 10 mAdc)	V _F	_	1.0	Vdc	
Reverse Recovery Time (I _F = I _R = 10 mAdc) (Figure 1)	t _{rr}	_	4.0	ns	

- 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.



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SOT-23 CASE 318 STYLE 8

MARKING DIAGRAM



5D = 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.

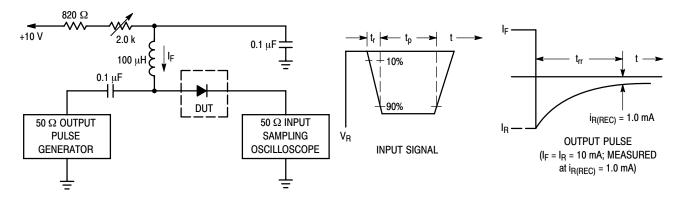
ORDERING INFORMATION

Device	Package	Shipping [†]
MMBD914LT1	SOT-23	3000/Tape & Reel
MMBD914LT1G	SOT-23 (Pb-Free)	3000/Tape & Reel
MMBD914LT3	SOT-23	10,000/Tape & Reel
MMBD914LT3G	SOT-23 (Pb-Free)	10,000/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.

Preferred devices are recommended choices for future use and best overall value.

MMBD914LT1



Notes: 1. A 2.0 k Ω variable resistor adjusted for a Forward Current (I_F) of 10 mA.

- 2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
- 3. t_p » t_{rr}

Figure 1. Recovery Time Equivalent Test Circuit

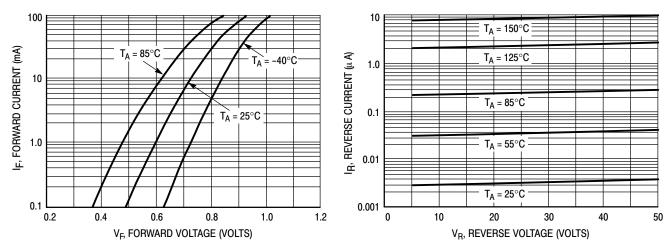


Figure 2. Forward Voltage

Figure 3. Leakage Current

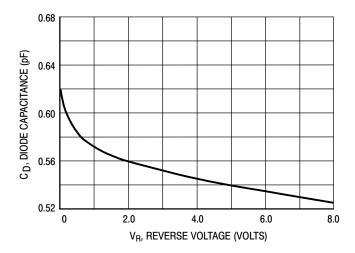
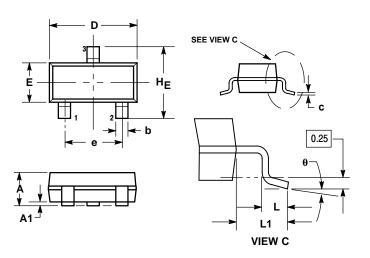


Figure 4. Capacitance

MMBD914LT1

PACKAGE DIMENSIONS

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



- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

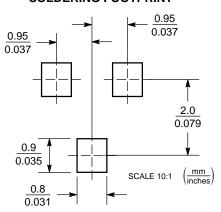
 - CONTROLLING DIMENSION: INCH
 - 3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
 - 4. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08.

	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
b	0.37	0.44	0.50	0.015	0.018	0.020
С	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
е	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 8:

- ANODE
 NO CONNECTION
 CATHODE 2

SOLDERING FOOTPRINT*



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

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