



# DATA SHEET

SEMICONDUCTOR

MMBD914

## High-Speed Switching Diode

### Features

- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish

### 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	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
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	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C/W}$
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
----------------	--------	-----	-----	------

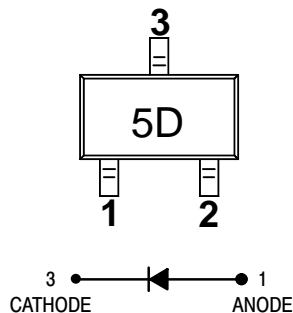
### OFF CHARACTERISTICS

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

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



SOT-23 (TO-236AB)



5D = Device Code

### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
MMBD914	SOT-23	3000/Tape & Reel

# DEVICE CHARACTERISTICS

## MMBD914

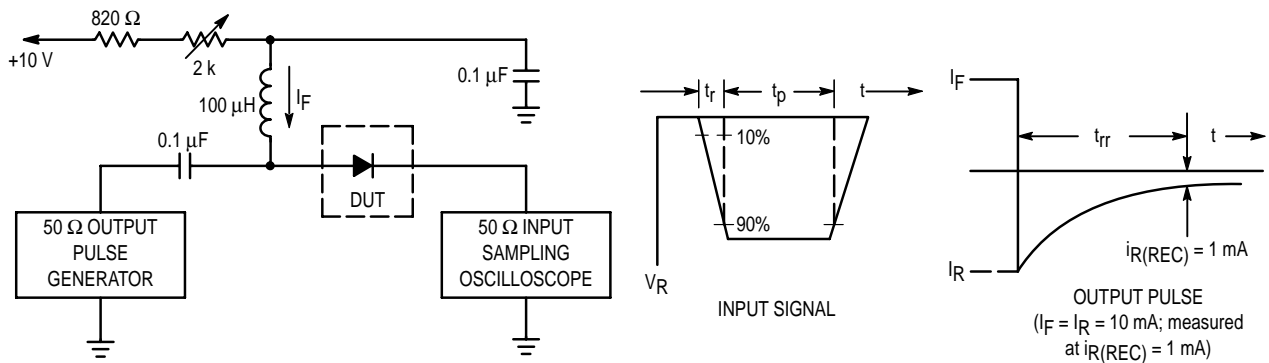


Figure 1. Recovery Time Equivalent Test Circuit

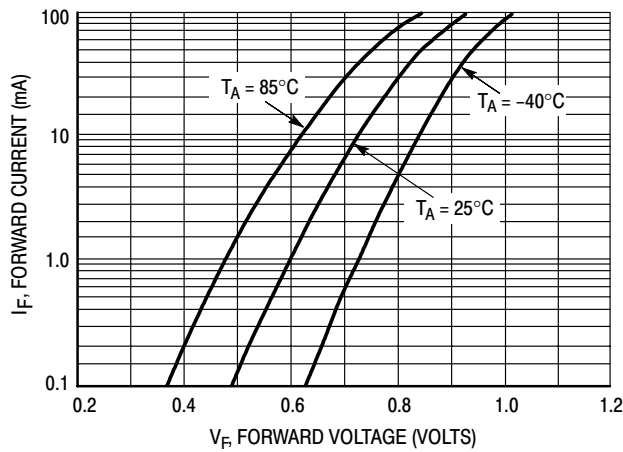


Figure 2. Forward Voltage

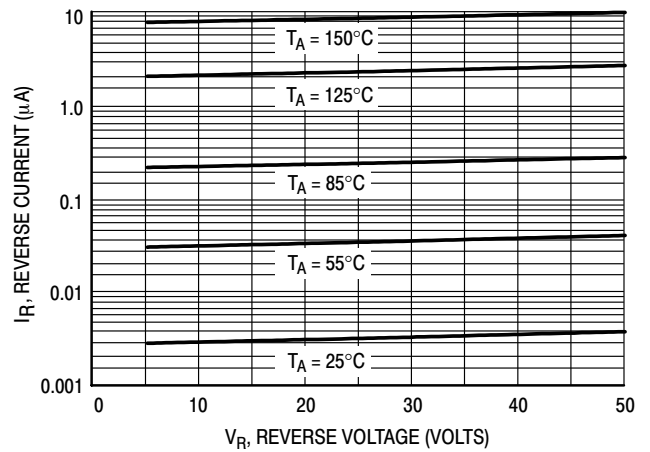


Figure 3. Leakage Current

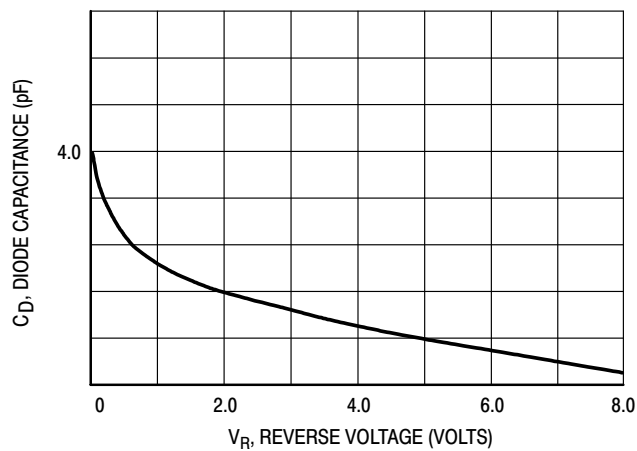
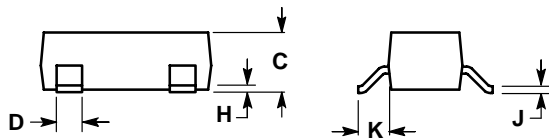
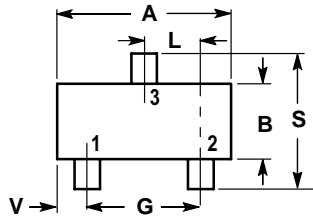


Figure 4. Capacitance

# PACKAGE OUTLINE & DIMENSIONS

## MMBD914

### 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

