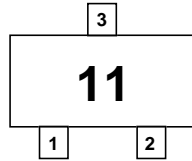
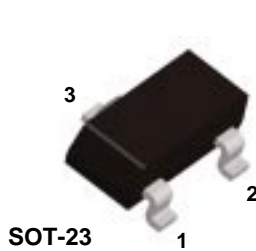
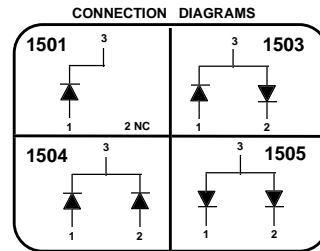


## MMBD1501/A / 1503/A / 1504/A / 1505/A



**MARKING**

MMBD1501	11	MMBD1501A	A11
MMBD1503	13	MMBD1503A	A13
MMBD1504	14	MMBD1504A	A14
MMBD1505	15	MMBD1505A	A15



### High Conductance Low Leakage Diode

Sourced from Process 1L.

#### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
$W_{IV}$	Working Inverse Voltage	180	V
$I_O$	Average Rectified Current	200	mA
$I_F$	DC Forward Current	600	mA
$i_f$	Recurrent Peak Forward Current	700	mA
$i_{f(surge)}$	Peak Forward Surge Current		
	Pulse width = 1.0 second	1.0	A
	Pulse width = 1.0 microsecond	2.0	A
$T_{stg}$	Storage Temperature Range	-55 to +150	°C
$T_J$	Operating Junction Temperature	150	°C

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**NOTES:**

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations

#### Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		MMBD1501/A/ 1503-1505/A*	
$P_D$	Total Device Dissipation	350	mW
	Derate above 25°C	2.8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W

\* Device mounted on glass epoxy PCB 1.6" X 1.6" X 0.06"; mounting pad for the collector lead min. 0.93 in<sup>2</sup>

# High Conductance Low Leakage Diode

(continued)

MMBD1501/A / 1503/A / 1504/A / 1505/A

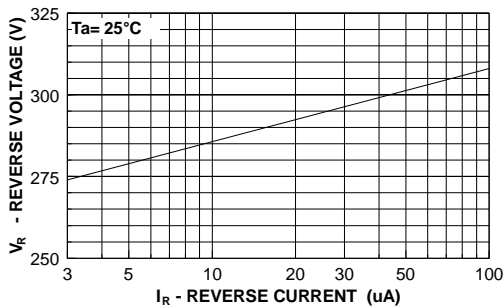
## Electrical Characteristics

TA = 25°C unless otherwise noted

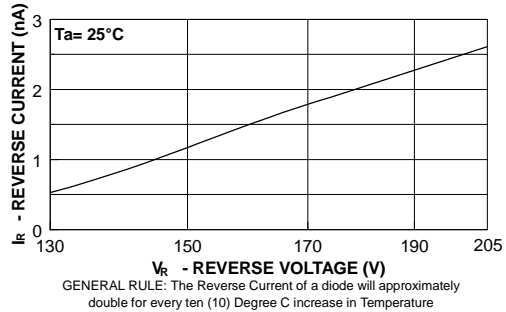
Symbol	Parameter	Test Conditions	Min	Max	Units
$B_V$	Breakdown Voltage	$I_R = 5.0 \mu A$	200		V
$I_R$	Reverse Current	$V_R = 125 V$ $V_R = 125 V, T_A = 150^\circ C$ $V_R = 180 V$ $V_R = 180 V, T_A = 150^\circ C$		1.0 3.0 10 5.0	nA $\mu A$ nA $\mu A$
$V_F$	Forward Voltage	$I_F = 1.0 mA$ $I_F = 10 mA$ $I_F = 50 mA$ $I_F = 100 mA$ $I_F = 200 mA$ $I_F = 300 mA$	620 720 800 830 0.87 0.9	720 830 890 930 1.1 1.15	mV mV mV mV V V
$C_O$	Diode Capacitance	$V_R = 0, f = 1.0 MHz$		4.0	pF

## Typical Characteristics

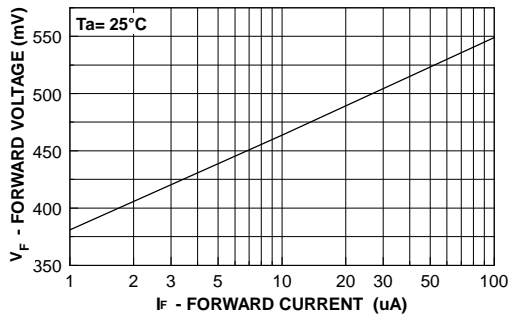
**REVERSE VOLTAGE vs REVERSE CURRENT**  
BV - 3.0 to 100  $\mu A$



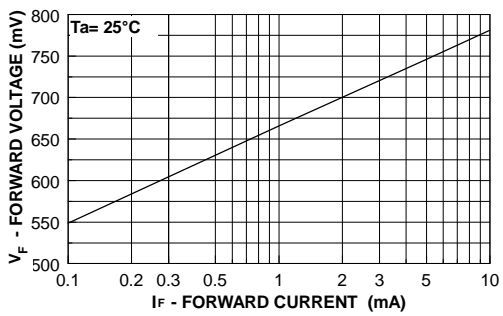
**REVERSE CURRENT vs REVERSE VOLTAGE**  
IR - 130 - 205 Volts



**FORWARD VOLTAGE vs FORWARD CURRENT**  
VF - 1 to 100  $\mu A$



**FORWARD VOLTAGE vs FORWARD CURRENT**  
VF - 0.1 to 10 mA



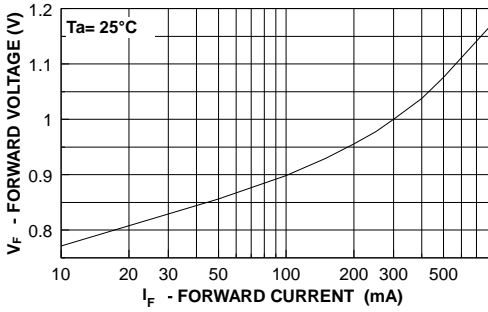
# High Conductance Low Leakage Diode

(continued)

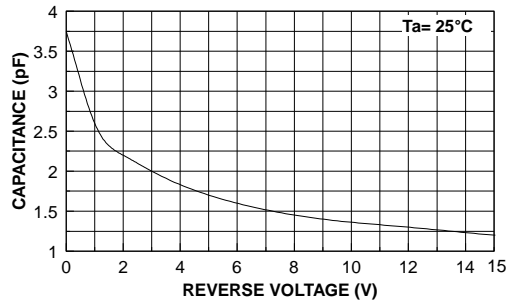
MMBD1501/A / 1503/A / 1504/A / 1505/A

## Typical Characteristics (continued)

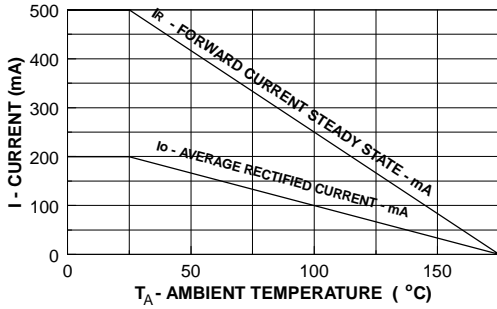
**FORWARD VOLTAGE vs FORWARD CURRENT**  
VF - 10 to 800 mA



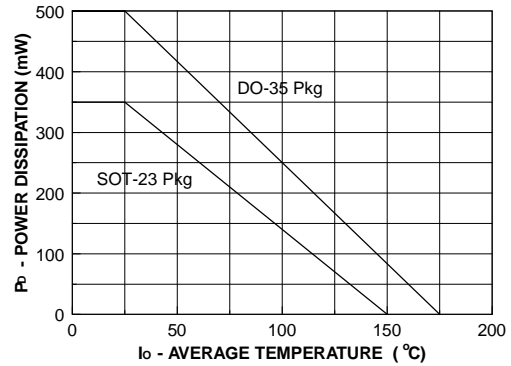
**CAPACITANCE vs REVERSE VOLTAGE**  
VR - 0 to 15 V



**Average Rectified Current (Io) & Forward Current (IF) versus Ambient Temperature (TA)**



**POWER DERATING CURVE**



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FAST®	SuperSOT™-3
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