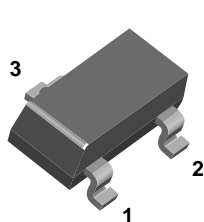


# MMBD1501/A / 1503/A / 1504/A / 1505/A



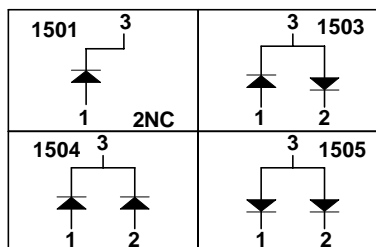
SOT-23



**MARKING**

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

**Connection Diagrams**



## Small Signal Diodes

### Absolute Maximum Ratings\*

$T_A = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Value	Units
$V_{RRM}$	Maximum Repetitive Reverse Voltage	200	V
$I_{F(AV)}$	Average Rectified Forward Current	200	mA
$I_{FSM}$	Non-repetitive Peak Forward Surge Current Pulse Width = 1.0 second Pulse Width = 1.0 microsecond	1.0	A
		2.0	A
$T_{stg}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature	150	$^\circ\text{C}$

\*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

Symbol	Parameter	Value	Units
$P_D$	Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C/W}$

### Electrical Characteristics

$T_A = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
$V_R$	Breakdown Voltage	$I_R = 5.0 \mu\text{A}$	200		V
$V_F$	Forward Voltage	$I_F = 1.0 \text{ mA}$	620	720	mV
		$I_F = 10 \text{ mA}$	720	830	mV
		$I_F = 50 \text{ mA}$	800	890	mV
		$I_F = 100 \text{ mA}$	830	930	mV
		$I_F = 200 \text{ mA}$	0.87	1.1	V
		$I_F = 300 \text{ mA}$	0.90	1.15	V
$I_R$	Reverse Current	$V_R = 125 \text{ V}$		1.0	nA
		$V_R = 125 \text{ V}, T_A = 150^\circ\text{C}$		3.0	$\mu\text{A}$
		$V_R = 180 \text{ V}$		10	nA
		$V_R = 180 \text{ V}, T_A = 150^\circ\text{C}$		5.0	$\mu\text{A}$
$C_T$	Total Capacitance	$V_R = 0, f = 1.0 \text{ MHz}$		4.0	PF

Typical Characteristics

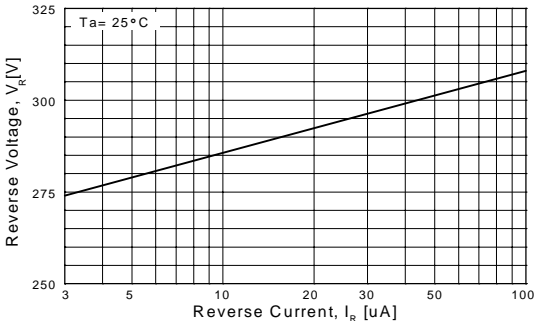


Figure 1. Reverse Voltage vs Reverse Current  
BV - 3.0 to 100 uA

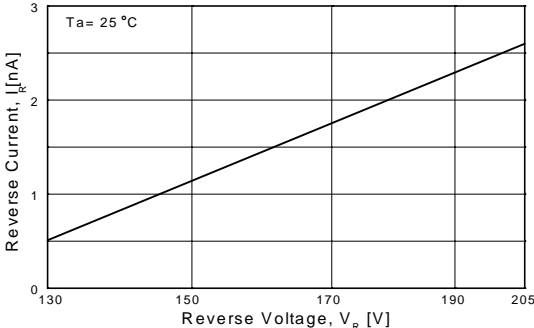


Figure 2. Reverse Current vs Reverse Voltage  
IR - 130 - 250 Volts

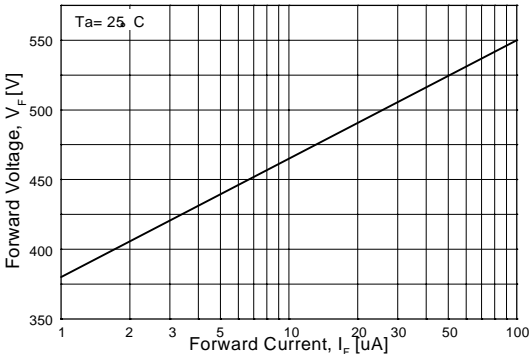


Figure 3. Forward Voltage vs Forward Current  
VF - 1 to 100 uA

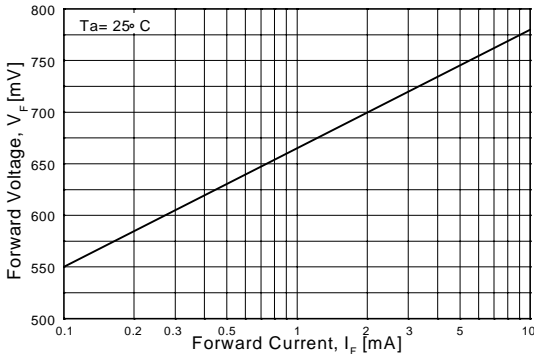


Figure 4. Forward Voltage vs Forward Current  
VF - 0.1 to 10 mA

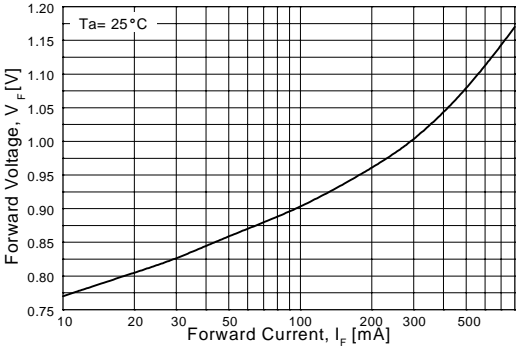


Figure 5. Forward Voltage vs Forward Current  
VF - 10 to 800 mA

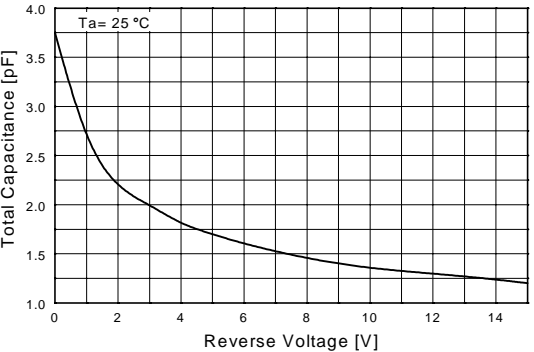


Figure 6. Total Capacitance vs Reverse Voltage  
VR - 0 to 15 V

Typical Characteristics (continued)

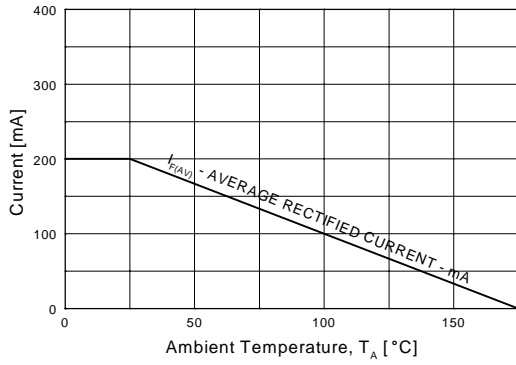


Figure 7. Average Rectified Current ( $I_{F(AV)}$ ) versus Ambient Temperature ( $T_A$ )

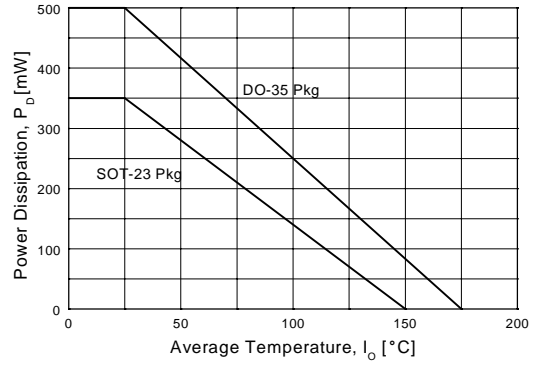


Figure 8. Power Derating Curve

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