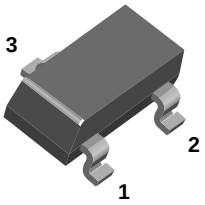
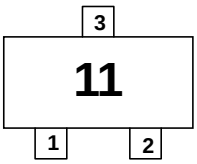
FAIRCHILD SEMICONDUCTOR®

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



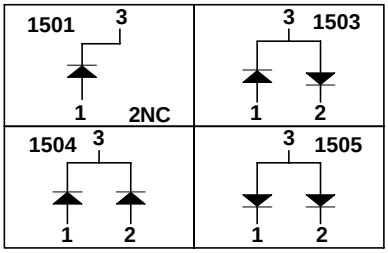
SOT-23



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°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 2.0	 A 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

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

Electrical Characteristics

T_A = 25°C unless otherwise noted

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

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Small Signal Diode
(continued)

Typical Characteristics

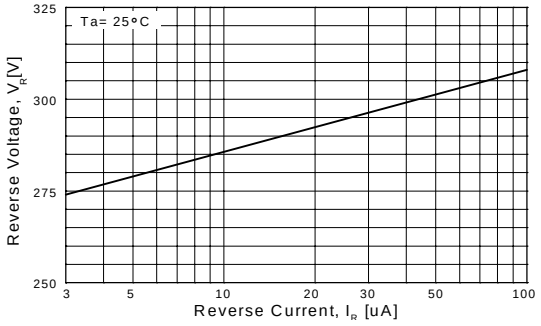

Figure 1. Reverse Voltage vs Reverse Current
BV - 3.0 to 100 uA

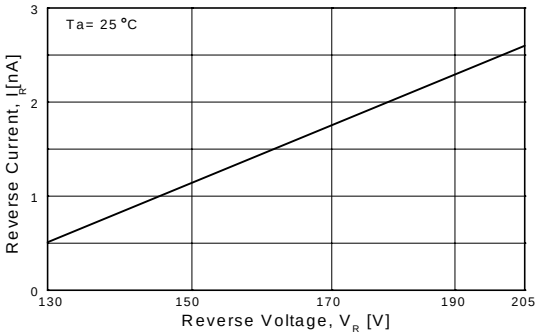

Figure 2. Reverse Current vs Reverse Voltage
IR - 130 - 250 Volts

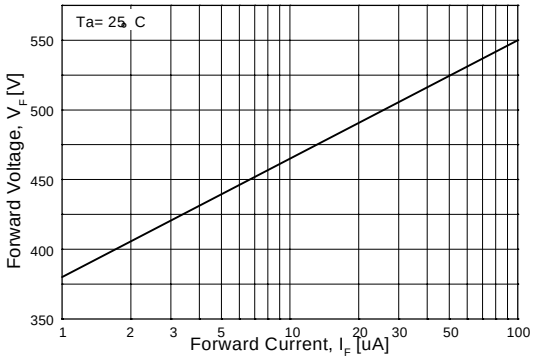

Figure 3. Forward Voltage vs Forward Current
VF - 1 to 100 uA

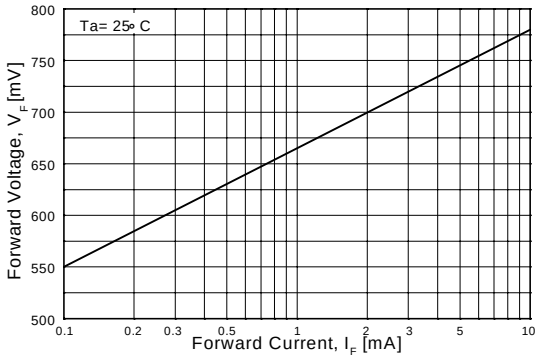

Figure 4. Forward Roltage vs Forwad Current
VF - 0.1 to 10 mA

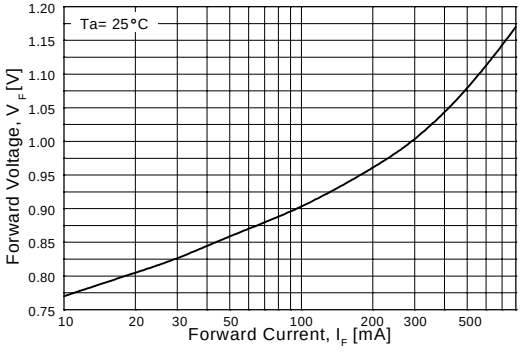

Figure 5. Forward Voltage vs Forward Current
VF - 10 to 800 mA

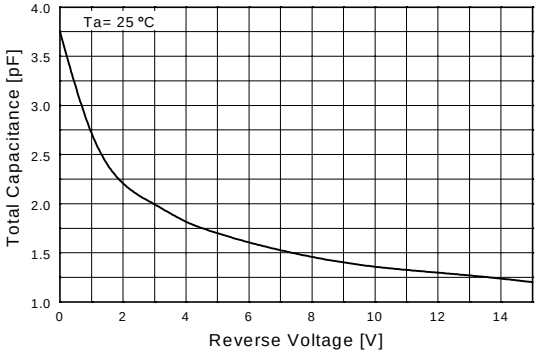

Figure 6. Total Capacitance vs Reverse Voltage
VR - 0 to 15 V

Typical Characteristics (continued)

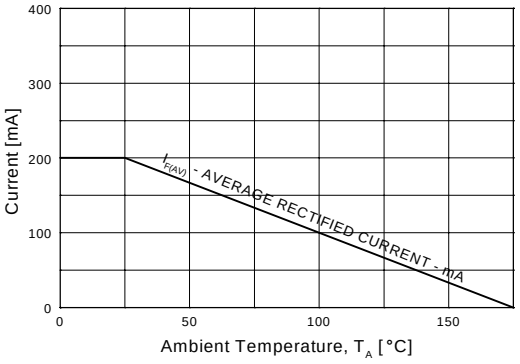

Figure 7. Average Rectified Current ($I_{F(AV)}$) versus Ambient Temperature (T_A)

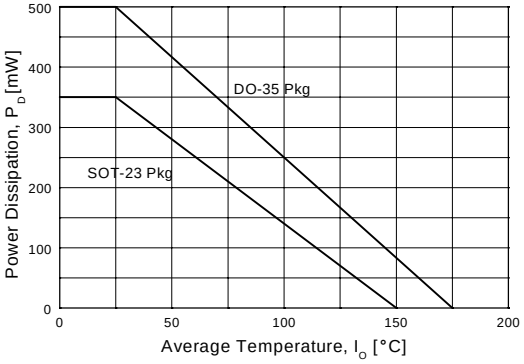

Figure 8. Power Derating Curve

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DenseTrench™	GTO™	Power247™	SuperSOT™-6	
DOME™	HiSeC™	PowerTrench®	SuperSOT™-8	
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E^2CMOS™	LittleFET™	QS™	TinyLogic™	
EnSigna™	MicroFET™	QT Optoelectronics™	TruTranslation™	
FACT™	MicroPak™	Quiet Series™	UHC™	
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