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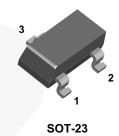
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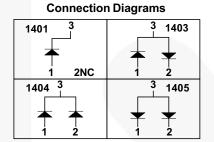
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November 2014

MMBD1401 / MMBD1403 / MMBD1404 / MMBD1405 Small Signal Diodes





Ordering Information

Part Number	Top Mark	Package	Packing Method
MMBD1401	29	SOT-23 3L	Tape and Reel
MMBD1403	32	SOT-23 3L	Tape and Reel
MMBD1404	33	SOT-23 3L	Tape and Reel
MMBD1405	34	SOT-23 3L	Tape and Reel

Absolute Maximum Ratings(1), (2)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^{\circ}\text{C}$ unless otherwise noted.

Symbol	Parameter		Value	Unit
V_{RRM}	Maximum Repetitive Reverse Voltage		200	V
I _{F(AV)}	Average Rectified Forward Current		200	mA
ı	Non-Repetitive Peak Forward	Pulse Width = 1.0 second	1.0	Α
IFSM (Surge Current	Pulse Width = 1.0 microsecond	2.0	A
T _{STG}	Storage Temperature Range		-55 to +150	°C
TJ	Operating Junction Temperature		150	°C

Notes:

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

Thermal Characteristics

Values are at $T_A = 25$ °C unless otherwise noted.

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

Electrical Characteristics

Values are at $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
B _V	Breakdown Voltage	I _R = 100 μA	200		V
V _F	Forward Voltage	I _F = 10 mA		800	mV
		I _F = 50 mA	760	920	mV
		I _F = 200 mA		1.0	V
		I _F = 300 mA		1.1	V
I _R	Reverse Current	V _R = 120 V		40	nA
		V _R = 175 V		100	nA
C_{T}	Total Capacitance	$V_R = 0$, $f = 1.0 \text{ MHz}$		2.0	pF
t _{rr}	Reverse Recovery Time	$I_F = I_R = 30$ mA, $I_{RR} = 3.0$ mA, $R_L = 100 \Omega$		50	nS

Typical Performance Characteristics

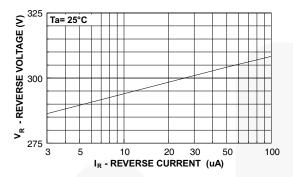
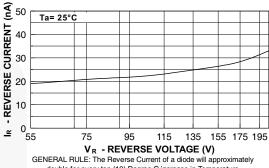


Figure 1. Reverse Voltage vs. Reverse Current BV - 1.0 to 100 μA



double for every ten (10) Degree C increase in Temperature

Figure 2. Reverse Current vs. Reverse Voltage

I_R - 55 to 205 V

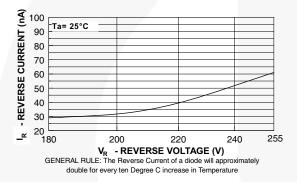


Figure 3. Reverse Current vs. Reverse Voltage I_R - 180 to 255 V

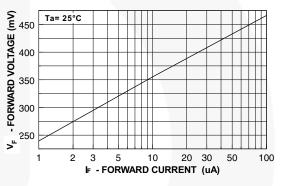


Figure 4. Forward Voltage vs. Forward Current $$V_{F}$$ - 1.0 to 100 μA

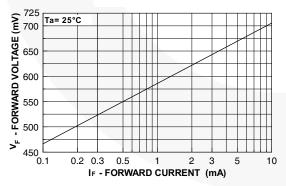


Figure 5. Forward Voltage vs. Forward Current V_F - 0.1 to 10 mA

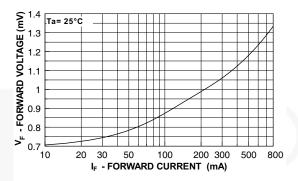


Figure 6. Forward Voltage vs. Forward Current V_F - 10 to 800 mA

Typical Performance Characteristics (Continued)

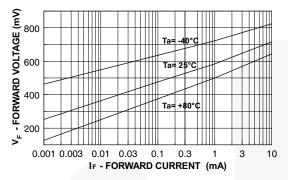


Figure 7. Forward Voltage vs. Ambient Temperature V_F - 1.0 μ A - 10 mA (- 40 to +80°C)

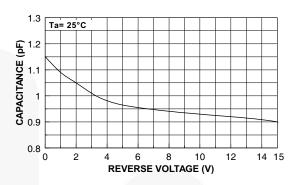


Figure 8. Capacitance vs. Reverse Voltage

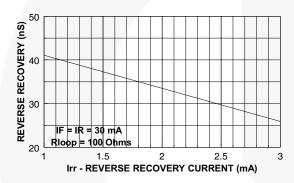


Figure 9. Reverse Recovery Time vs. Reverse Recovery Current (Irr)

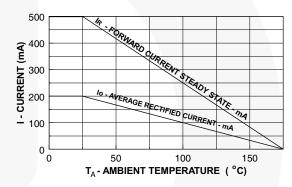


Figure 10. Average Rectified Current(I_O) and Forward Current (I_F) vs. Ambient Temperature(T_A)

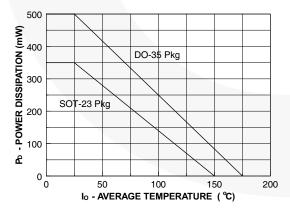
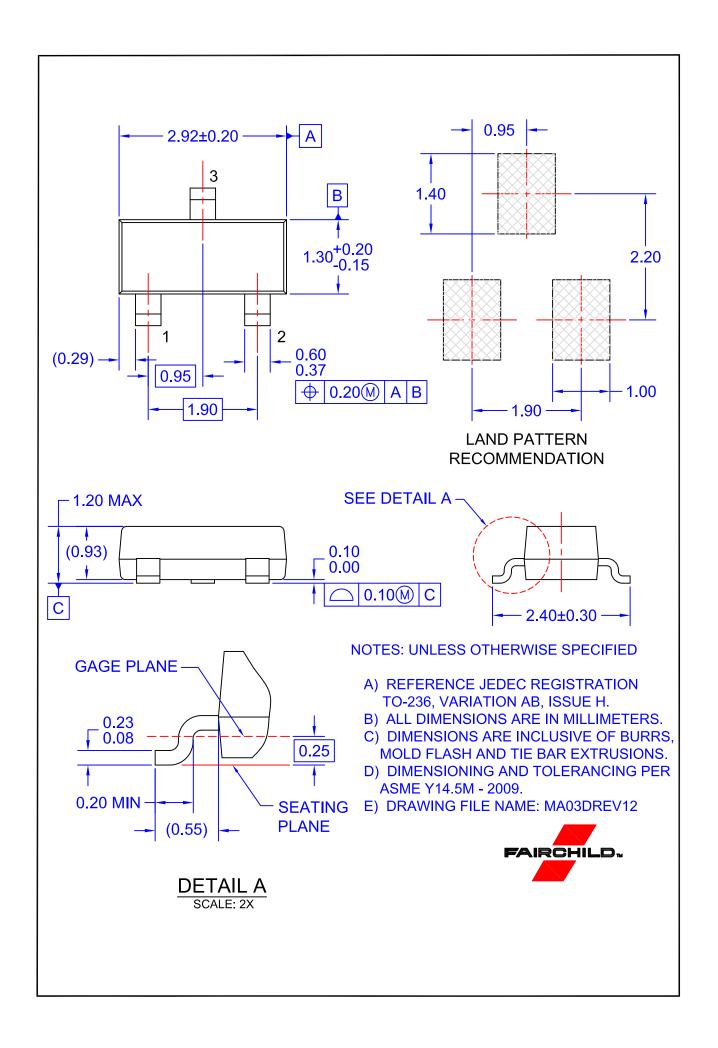


Figure 11. Power Derating Curve



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