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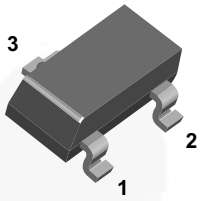
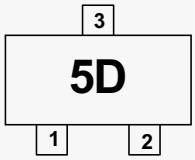
February 2015

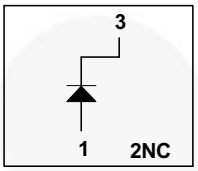
MMBD914
Small Signal Diode



SOT-23



Connection Diagram



Ordering Information

Part Number	Top Mark	Package	Packing Method
MMBD914	5D	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°C unless otherwise noted.

Symbol	Parameter		Value	Unit
V_{RRM}	Maximum Repetitive Reverse Voltage		100	V
$I_{F(AV)}$	Average Rectified Forward Current		200	mA
I_{FSM}	Non-Repetitive Peak Forward Surge Current	Pulse Width = 1.0 second	1.0	A
		Pulse Width = 1.0 microsecond	2.0	
T_{STG}	Storage Temperature Range		-55 to +150	°C
T_J	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.

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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
V_R	Breakdown Voltage	I_R = 5.0 µA	75		V
		I_R = 100 µA	100		
V_F	Forward Voltage	I_F = 10 mA		1.0	V
I_R	Reverse Current	V_R = 20 V		25	nA
		V_R = 20 V, T_A = 150°C		50	µA
		V_R = 75 V		5.0	µA
C_T	Total Capacitance	V_R = 0, f = 1.0 MHz		4.0	pF
t_{rr}	Reverse Recovery Time	I_F = 10 mA, V_R = 6 V, I_{RR} = 1.0 mA, R_L = 100 Ω		4.0	ns
V_{FR}	Peak Forward Recovery Voltage	I_F = 50 mA, PEAK SQUARE WAVE PULSE WIDTH = 0.1 µS 5 kHz – 100 kHz REP RATE		2.5	V

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Typical Performance Characteristics

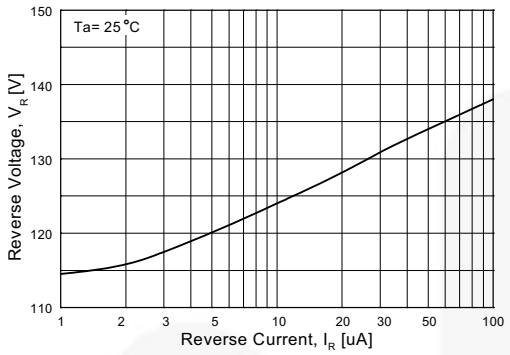

Figure 1. Reverse Voltage vs. Reverse Current
BV - 1.0 to 100 μA

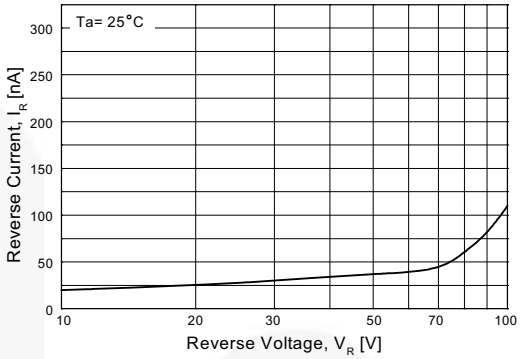

Figure 2. Reverse Current vs. Reverse Voltage
I_R - 10 to 100 V

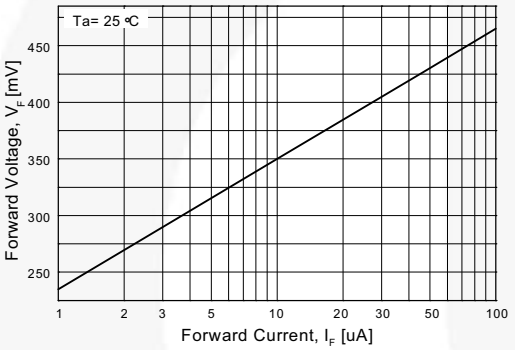

Figure 3. Forward Voltage vs. Forward Current
V_F - 1.0 to 100 μA

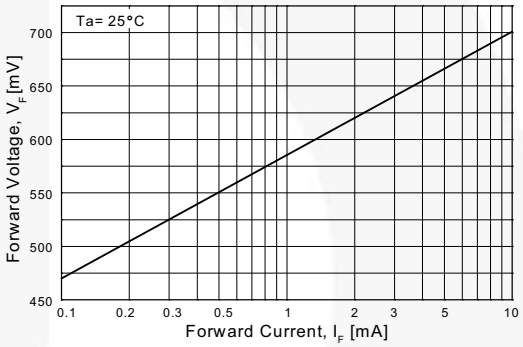

Figure 4. Forward Voltage vs. Forward Current
V_F - 0.1 to 10 mA

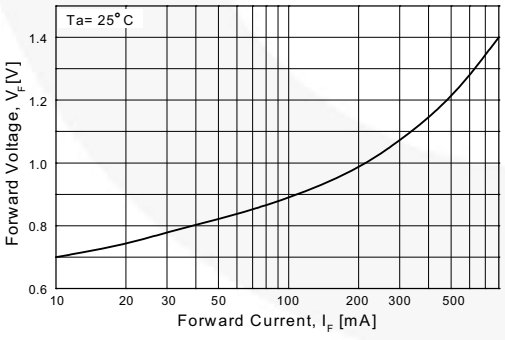

Figure 5. Forward Voltage vs. Forward Current
V_F - 10 to 800 mA

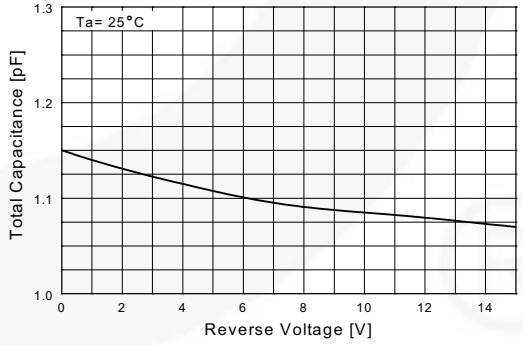

Figure 6. Total Capacitance vs. Reverse Voltage

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Typical Performance Characteristics (Continued)

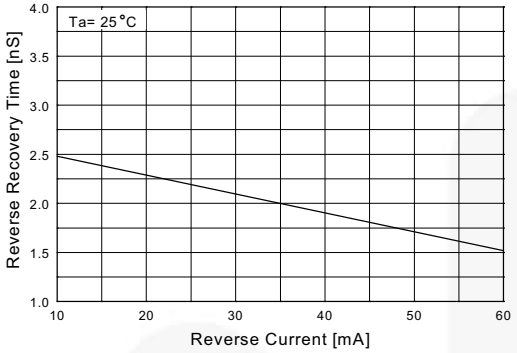

Figure 7. Reverse Recovery Time vs. Reverse Current

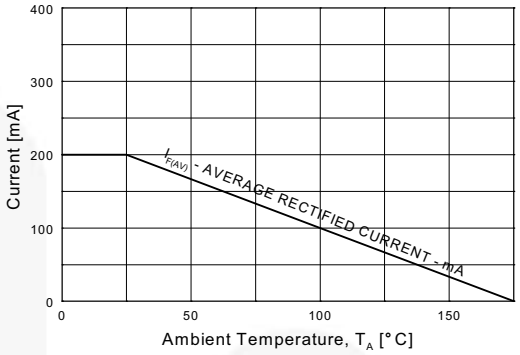

Figure 8. Average Rectified Current($I_{F(AV)}$) vs. Ambient Temperature(T_A)

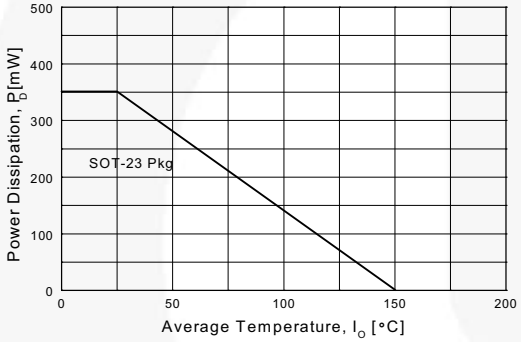

Figure 9. Power Derating Curve

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Physical Dimensions

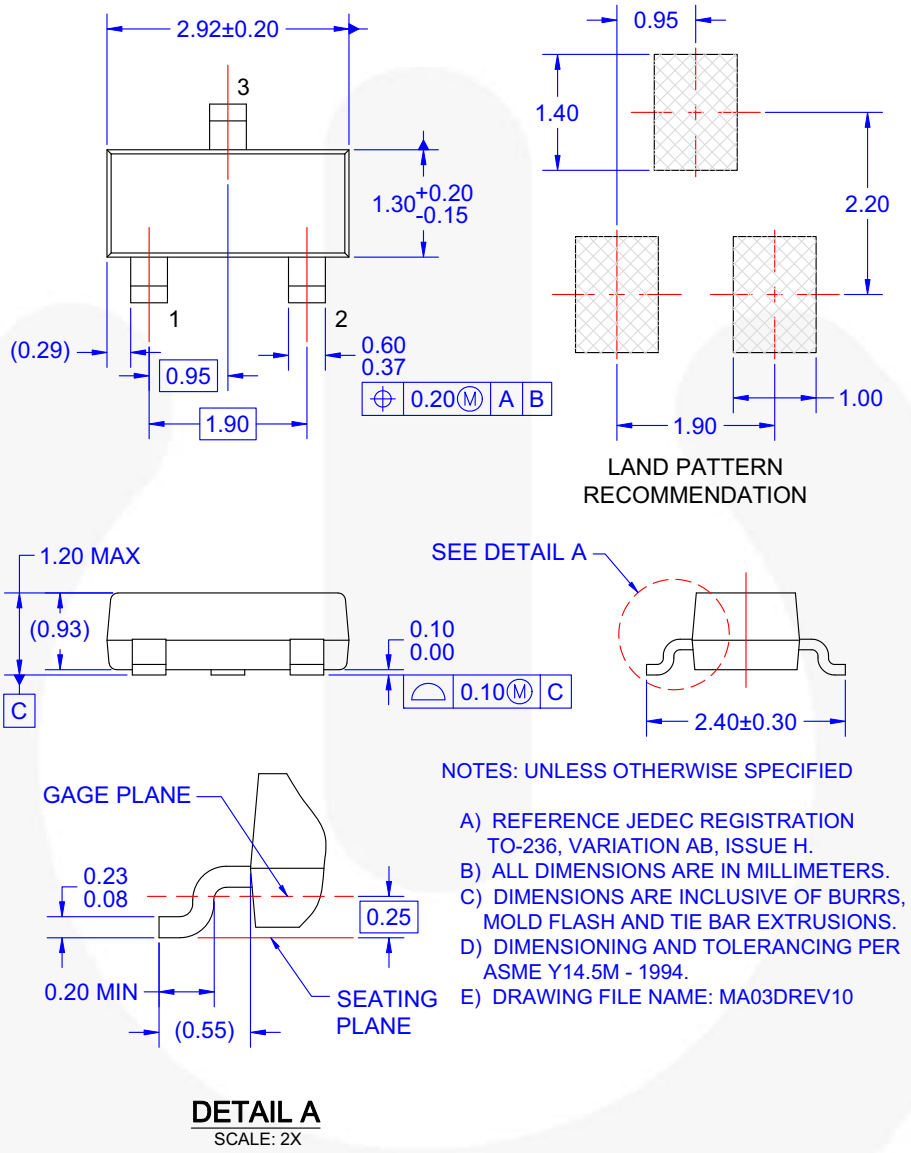

Figure 10. 3-LEAD, SOT23, JEDEC TO-236, LOW PROFILE

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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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