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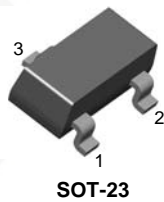
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

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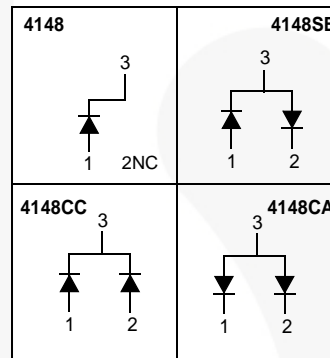


November 2014

MMBD4148 / MMBD4148SE / MMBD4148CC / MMBD4148CA Small Signal Diode



Connection Diagram



Ordering Information

Part Number	Top Mark	Package	Packing Method
MMBD4148	5H	SOT-23 3L	Tape and Reel
MMBD4148_D87Z	5H	SOT-23 3L	Tape and Reel
MMBD4148SE	D4	SOT-23 3L	Tape and Reel
MMBD4148CC	D5	SOT-23 3L	Tape and Reel
MMBD4148CA	D6	SOT-23 3L	Tape and Reel

Absolute Maximum Ratings

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		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	$^\circ\text{C}$
T_J	Operating Junction Temperature		150	$^\circ\text{C}$

MMBD4148 / MMBD4148SE / MMBD4148CC / MMBD4148CA — Small Signal Diode

Thermal Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

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

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
V_R	Breakdown Voltage	$I_R = 5.0 \mu\text{A}$	75		V
		$I_R = 100 \mu\text{A}$	100		
V_F	Forward Voltage	$I_F = 10 \text{ mA}$		1.0	V
I_R	Reverse Leakage Current	$V_R = 20 \text{ V}$		25	nA
		$V_R = 20 \text{ V}, T_A = 150^\circ\text{C}$		50	μA
		$V_R = 75 \text{ V}$		5.0	μA
C_T	Total Capacitance	$V_R = 0 \text{ V}, f = 1.0 \text{ MHz}$		4.0	pF
t_{rr}	Reverse Recovery Time	$I_F = 10 \text{ mA}, V_R = 6.0 \text{ V}, I_{RR} = 1.0 \text{ mA}, R_L = 100 \Omega$		4.0	ns

Typical Performance Characteristics

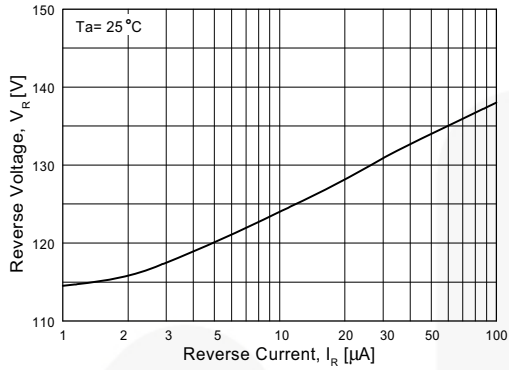


Figure 1. Reverse Voltage vs. Reverse Current
BV - 1.0 to 100 μ A

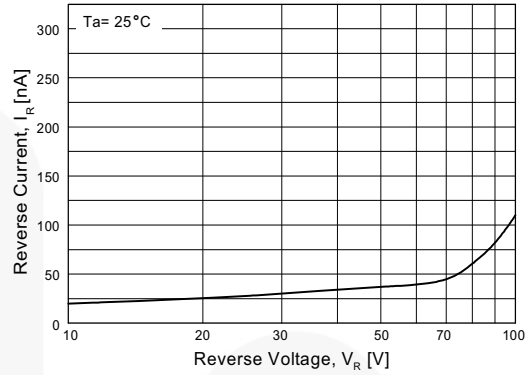


Figure 2. Reverse Current vs. Reverse Voltage
IR - 10 to 100 V

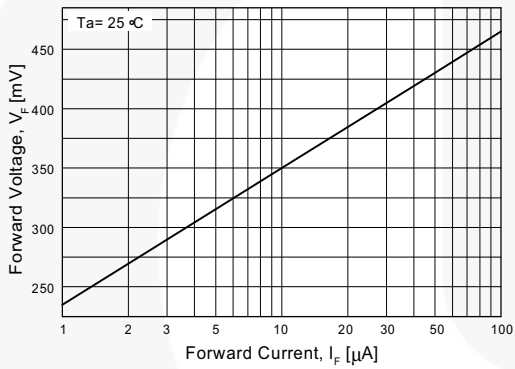


Figure 3. Forward Voltage vs. Forward Current
VF - 1.0 to 100 μ A

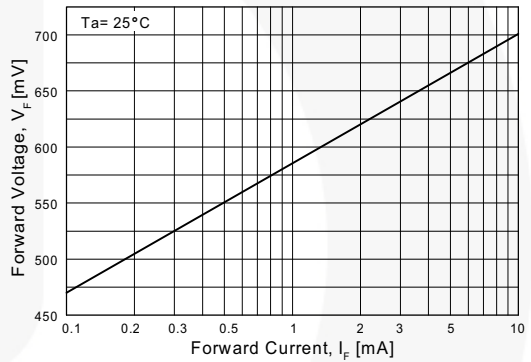


Figure 4. Forward Voltage vs. Forward Current
VF - 0.1 to 10 mA

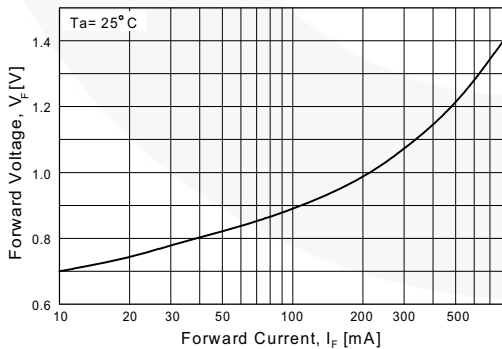


Figure 5. Forward Voltage vs. Forward Current
VF - 10 to 800 mA

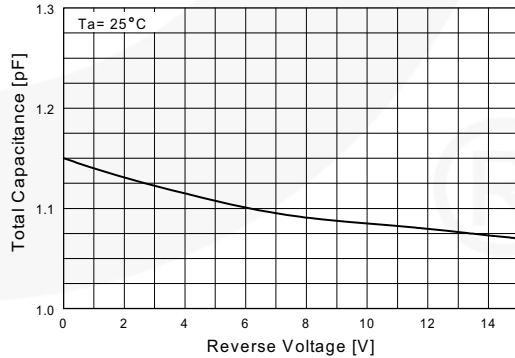


Figure 6. Total Capacitance vs. Reverse Voltage

Typical Performance Characteristics (Continued)

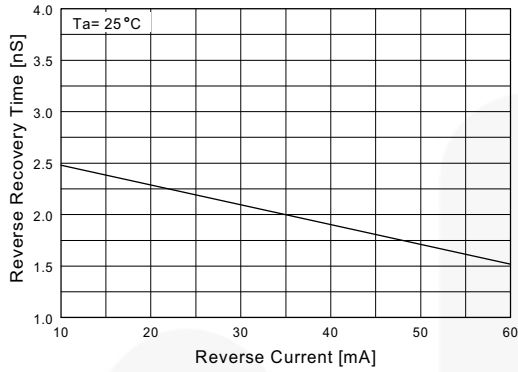


Figure 7. Reverse Recovery Time vs. Reverse Current
TRR - IR 10 mA to 60 mA

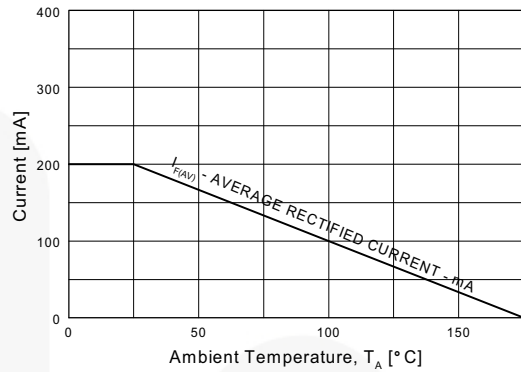


Figure 8. Average Rectified Current ($I_{F(AV)}$)
vs. Ambient Temperature (T_A)

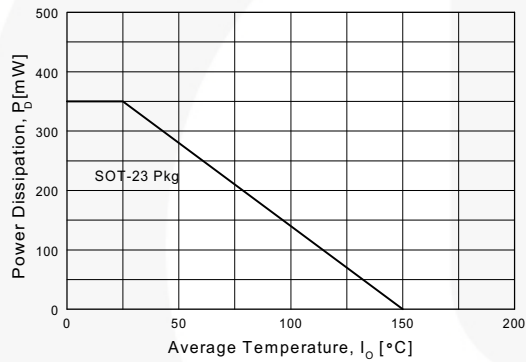
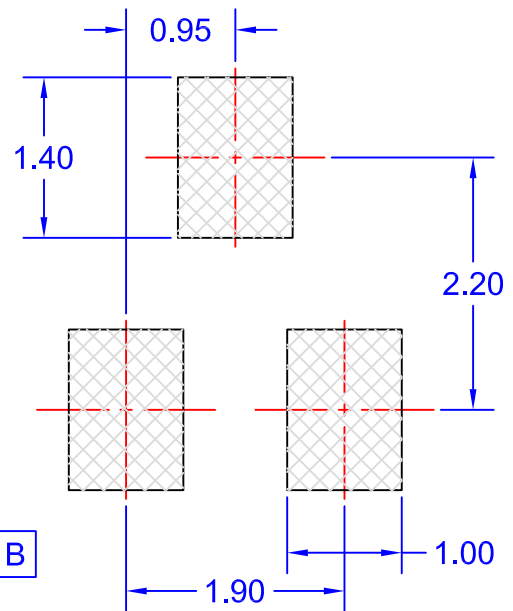
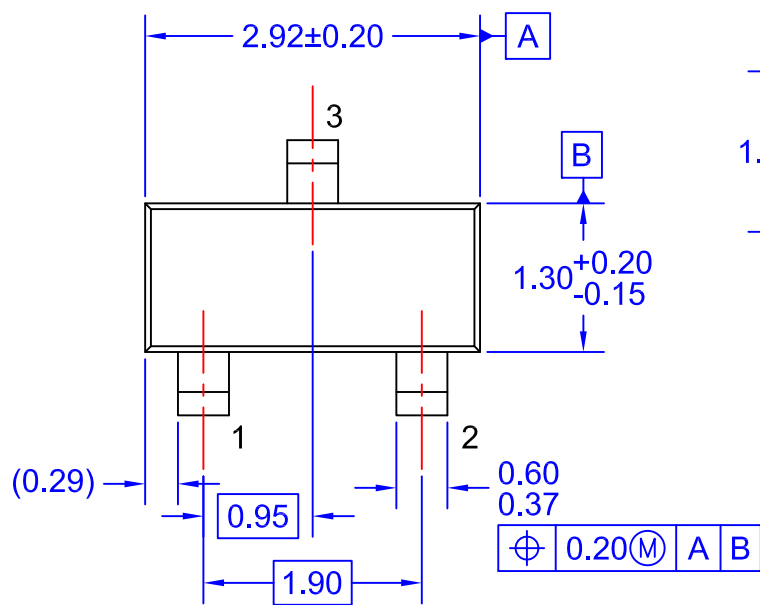
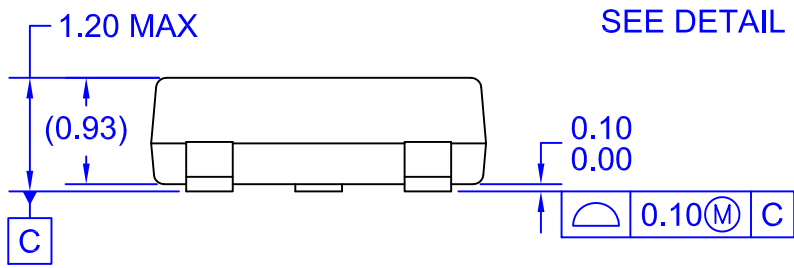


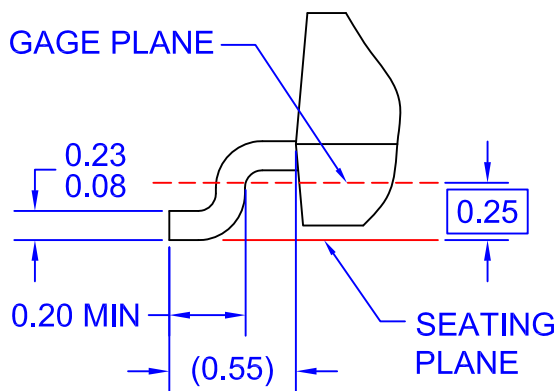
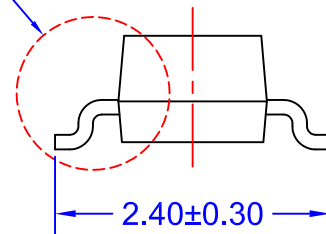
Figure 9. Power Derating Curve



LAND PATTERN
RECOMMENDATION



SEE DETAIL A



DETAIL A
SCALE: 2X

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