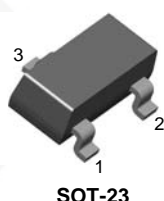


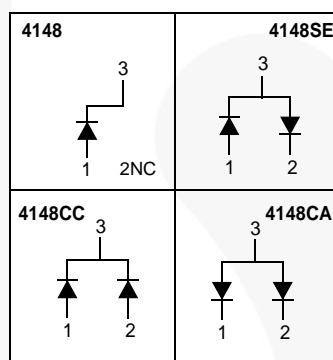


November 2014

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	$^\circ\text{C/W}$

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

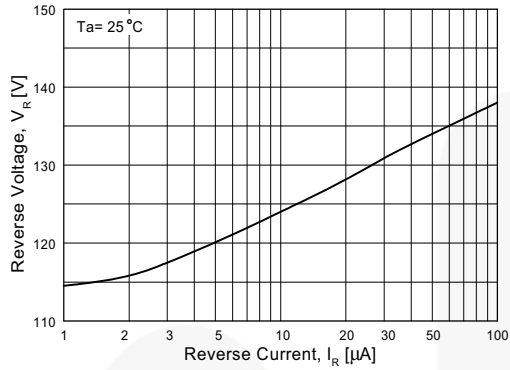


Figure 1. Reverse Voltage vs. Reverse Current
BV - 1.0 to 100 μ A

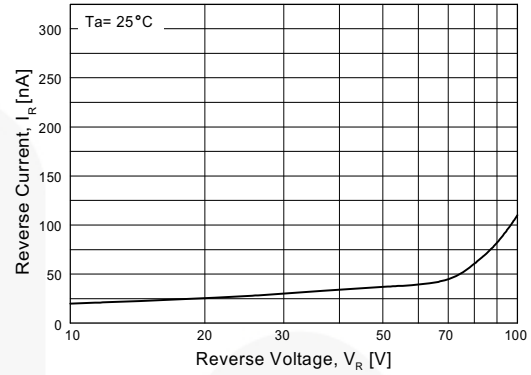


Figure 2. Reverse Current vs. Reverse Voltage
IR - 10 to 100 V

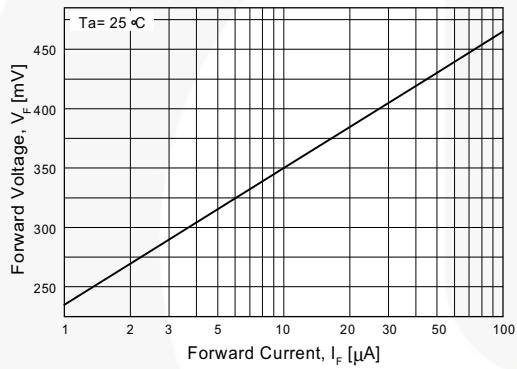


Figure 3. Forward Voltage vs. Forward Current
VF - 1.0 to 100 μ A

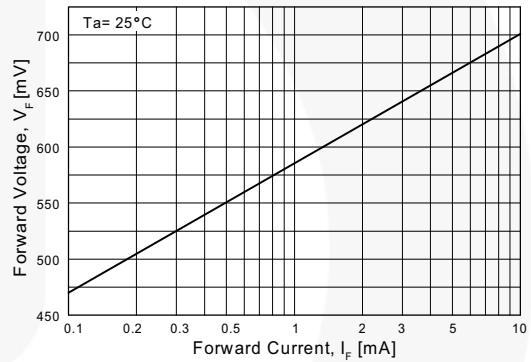


Figure 4. Forward Voltage vs. Forward Current
VF - 0.1 to 10 mA

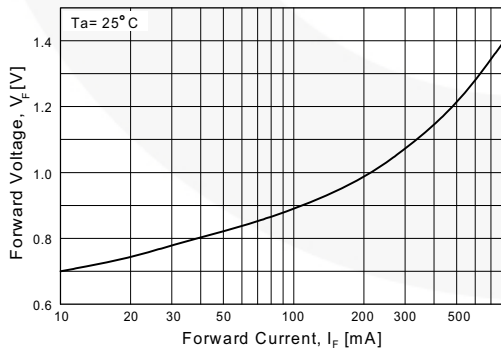


Figure 5. Forward Voltage vs. Forward Current
VF - 10 to 800 mA

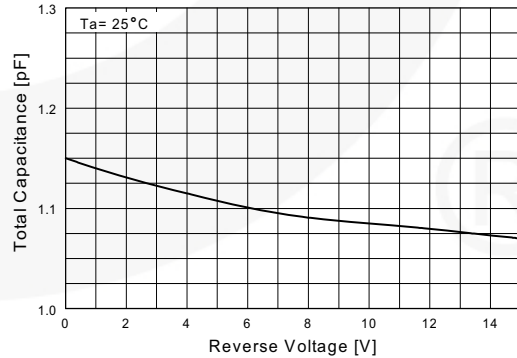


Figure 6. Total Capacitance vs. Reverse Voltage

Typical Performance Characteristics (Continued)

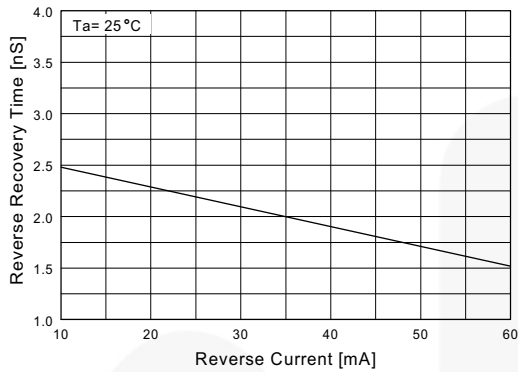


Figure 7. Reverse Recovery Time vs. Reverse Current
TRR - IR 10 mA to 60 mA

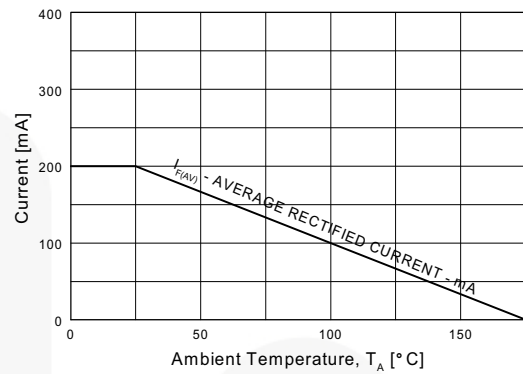


Figure 8. Average Rectified Current ($I_{F(AV)}$) vs. Ambient Temperature (T_A)

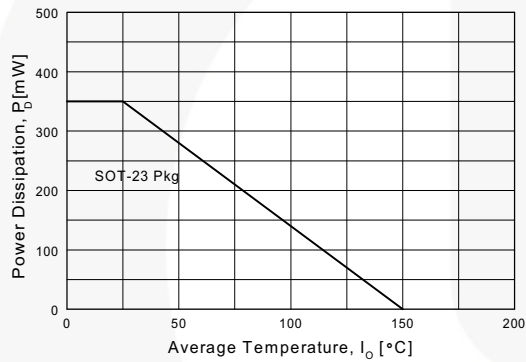
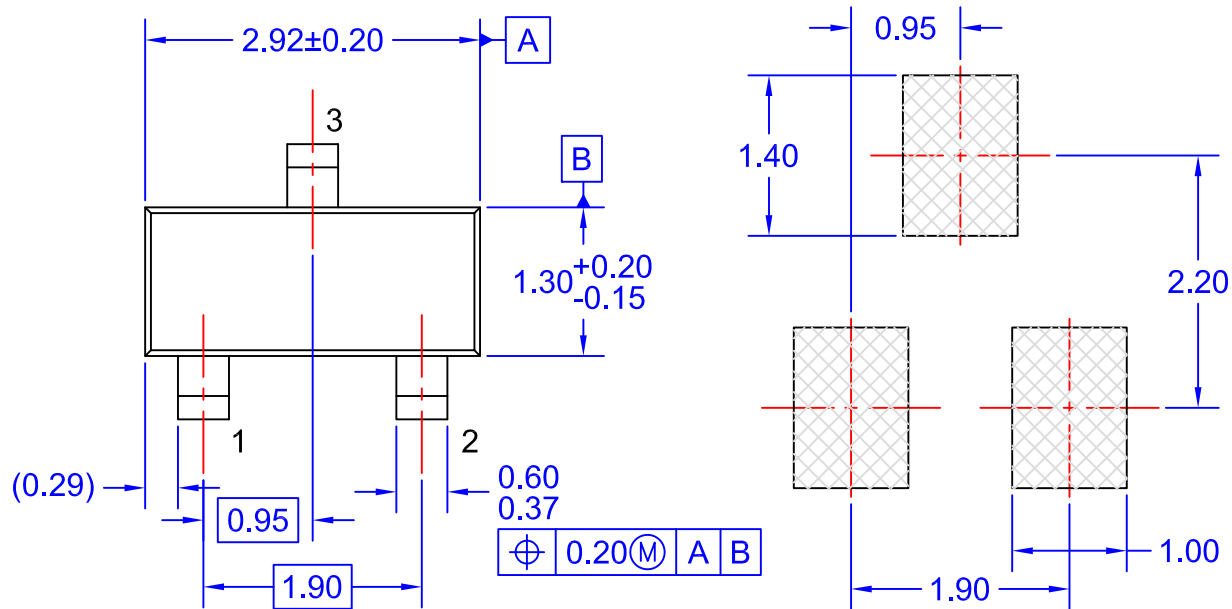
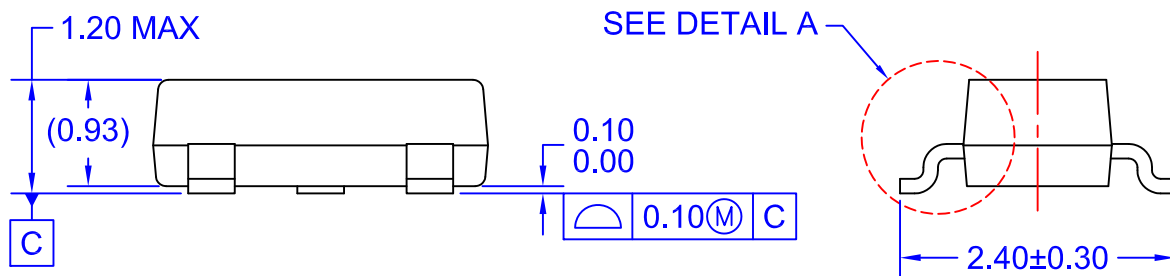


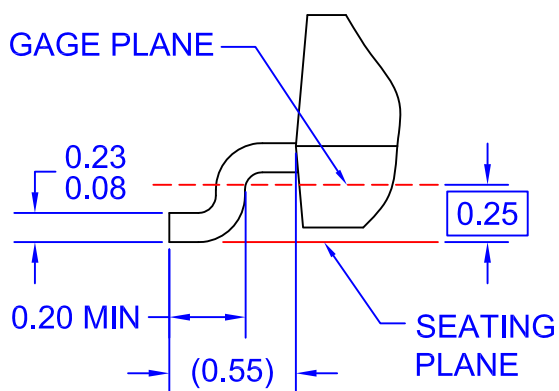
Figure 9. Power Derating Curve



LAND PATTERN
RECOMMENDATION



NOTES: UNLESS OTHERWISE SPECIFIED



DETAIL A
SCALE: 2X

- A) REFERENCE JEDEC REGISTRATION TO-236, VARIATION AB, ISSUE H.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS ARE INCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR EXTRUSIONS.
- D) DIMENSIONING AND TOLERANCING PER ASME Y14.5M - 2009.
- E) DRAWING FILE NAME: MA03DREV12



ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free
USA/Canada

Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910

Japan Customer Focus Center
Phone: 81-3-5817-1050

ON Semiconductor Website: www.onsemi.com

Order Literature: <http://www.onsemi.com/orderlit>

For additional information, please contact your local
Sales Representative