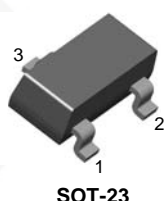


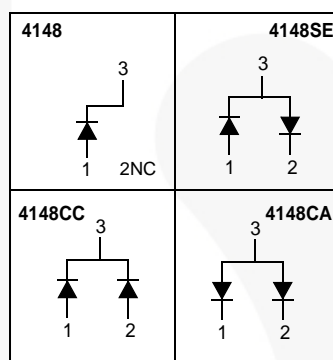


November 2014

# 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	$\mu\text{A}$
		$V_R = 75\ \text{V}$		5.0	$\mu\text{A}$
$C_T$	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

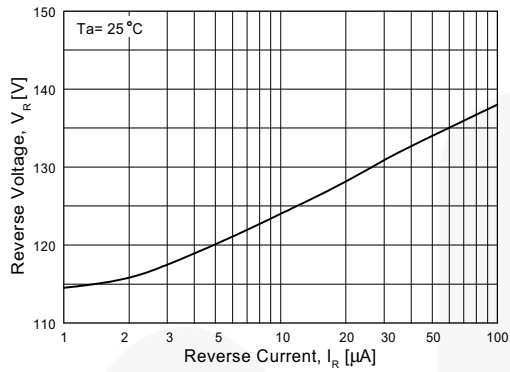


Figure 1. Reverse Voltage vs. Reverse Current  
BV - 1.0 to 100  $\mu$ A

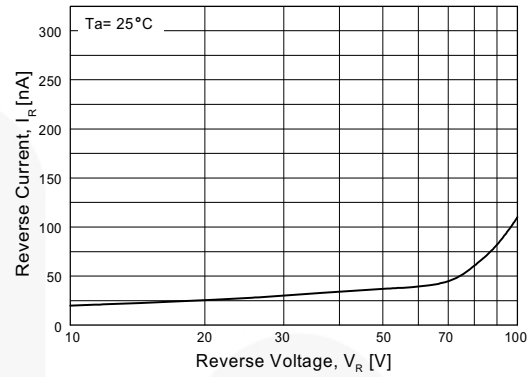


Figure 2. Reverse Current vs. Reverse Voltage  
IR - 10 to 100 V

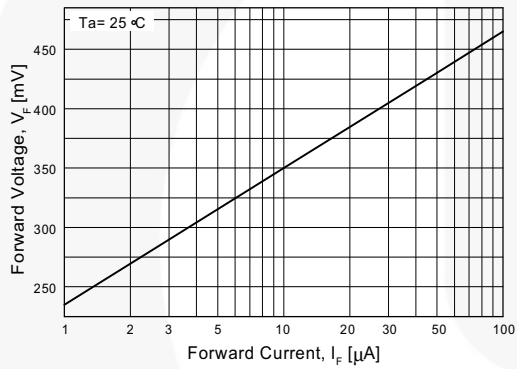


Figure 3. Forward Voltage vs. Forward Current  
VF - 1.0 to 100  $\mu$ A

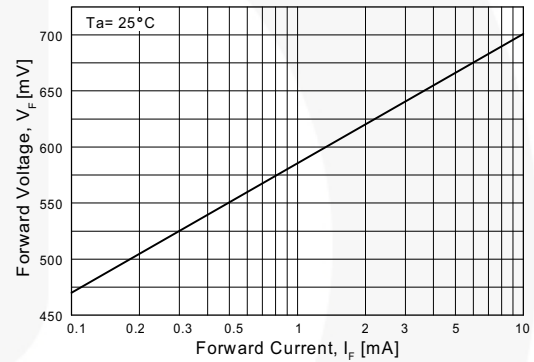


Figure 4. Forward Voltage vs. Forward Current  
VF - 0.1 to 10 mA

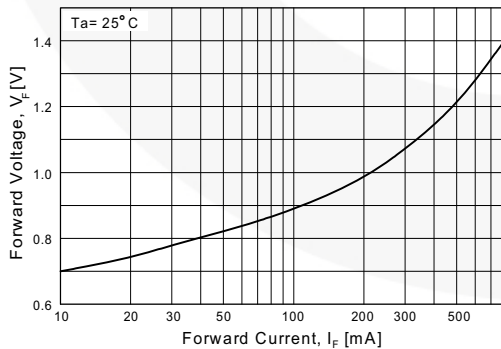


Figure 5. Forward Voltage vs. Forward Current  
VF - 10 to 800 mA

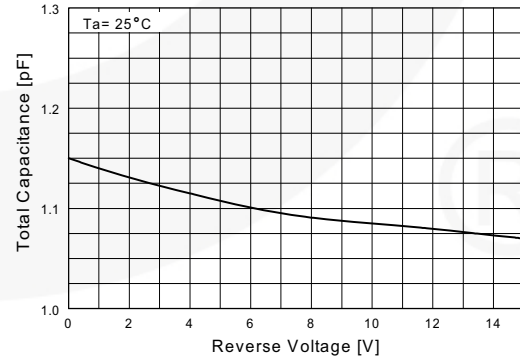
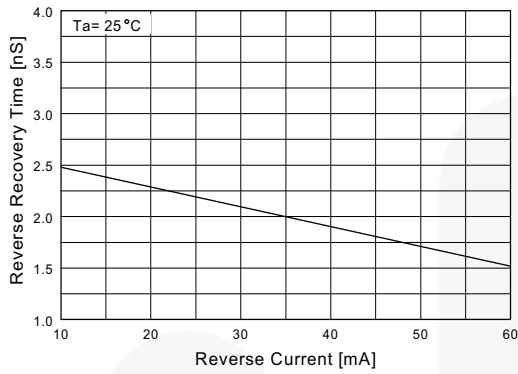
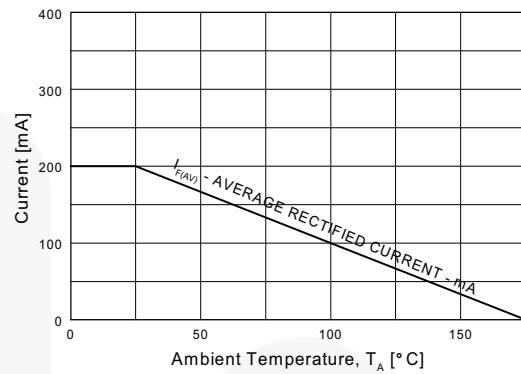


Figure 6. Total Capacitance vs. Reverse Voltage

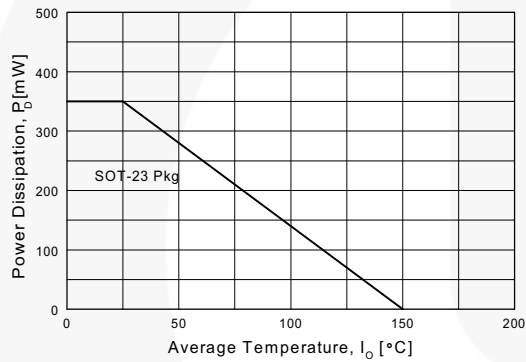
## Typical Performance Characteristics (Continued)



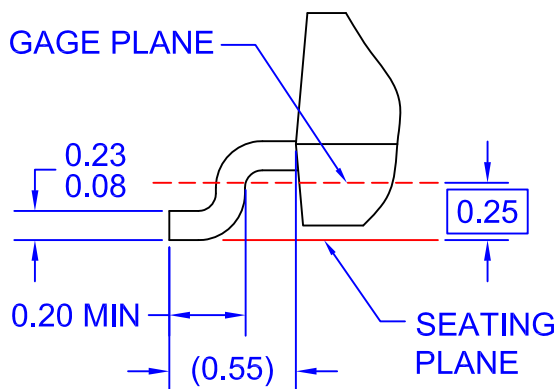
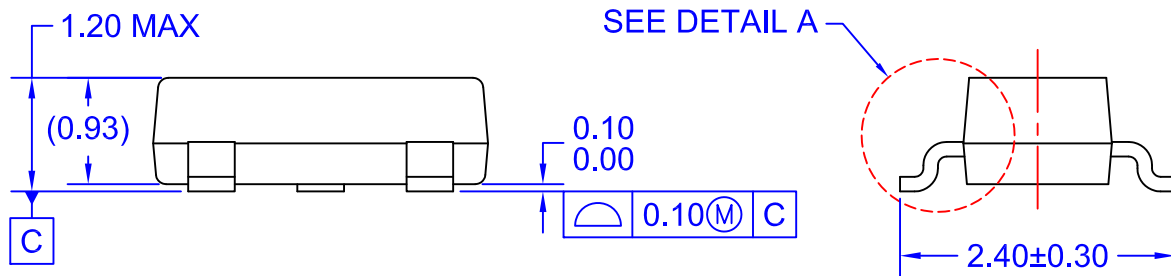
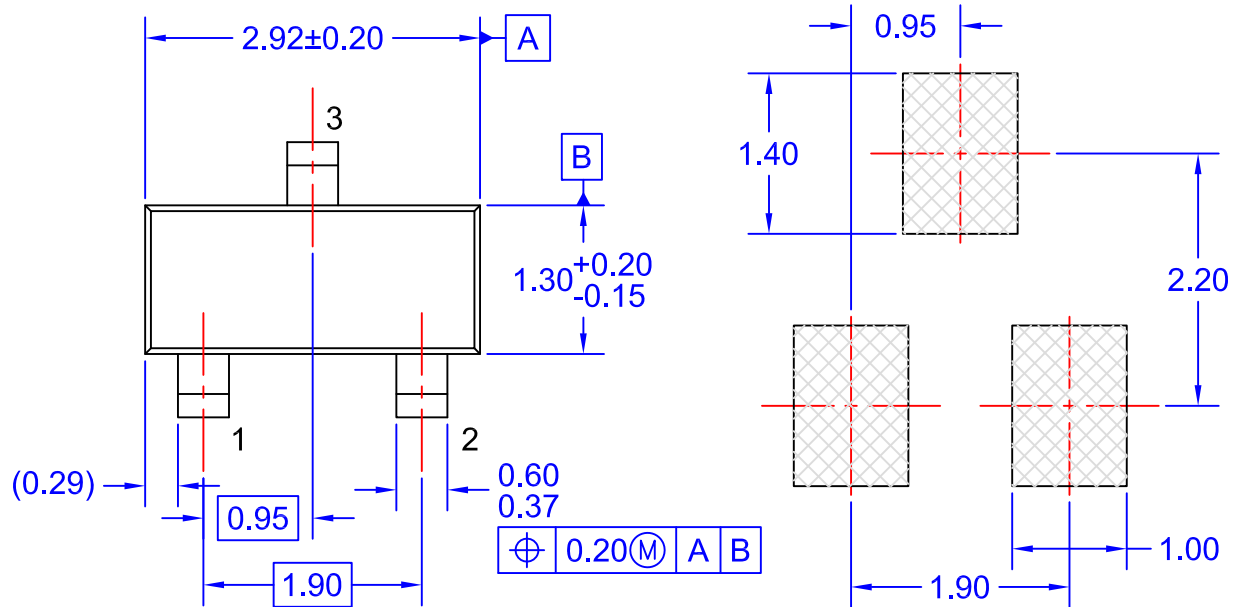
**Figure 7. Reverse Recovery Time vs. Reverse Current**  
TRR - IR 10 mA to 60 mA



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



**Figure 9. Power Derating Curve**



**DETAIL A**  
SCALE: 2X

NOTES: UNLESS OTHERWISE SPECIFIED

- 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





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