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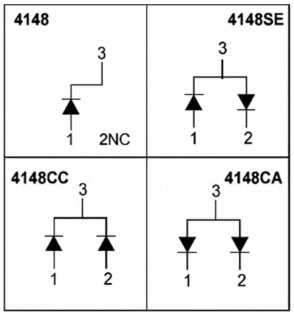
MMBD4148 / MMBD4148SE / MMBD4148CC / MMBD4148CA
Small Signal Diode



SOT-23

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°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

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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 Leakage 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 V, f = 1.0 MHz		4.0	pF
t_{rr}	Reverse Recovery Time	I_F = 10 mA, V_R = 6.0 V, I_{RR} = 1.0 mA, R_L = 100 Ω		4.0	ns

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Typical Performance Characteristics

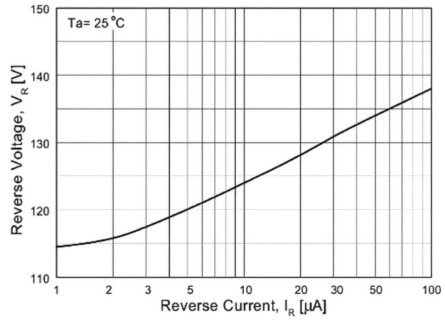

Figure 1. Reverse Voltage vs. Reverse Current BV - 1.0 to 100 μA

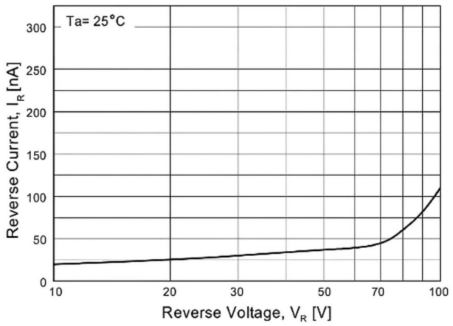

Figure 2. Reverse Current vs. Reverse Voltage IR - 10 to 100 V

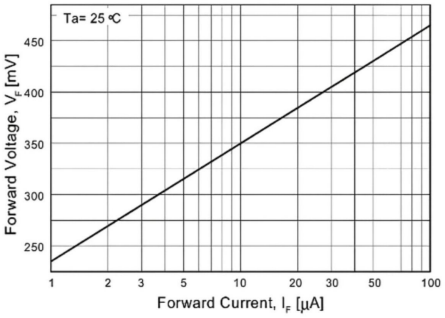

Figure 3. Forward Voltage vs. Forward Current VF - 1.0 to 100 μA

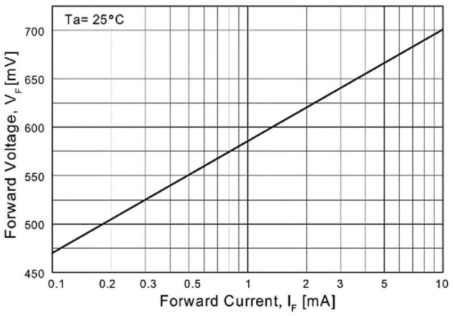

Figure 4. Forward Voltage vs. Forward Current VF - 0.1 to 10 mA

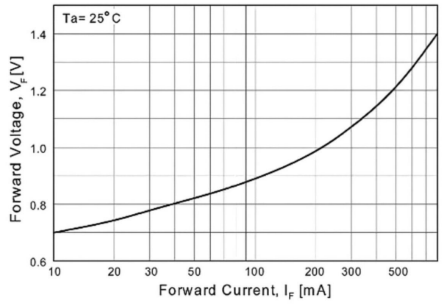

Figure 5. Forward Voltage vs. Forward Current VF - 10 to 800 mA

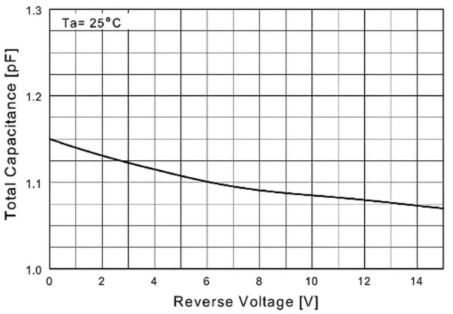

Figure 6. Total Capacitance vs. Reverse Voltage

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Typical Performance Characteristics (Continued)

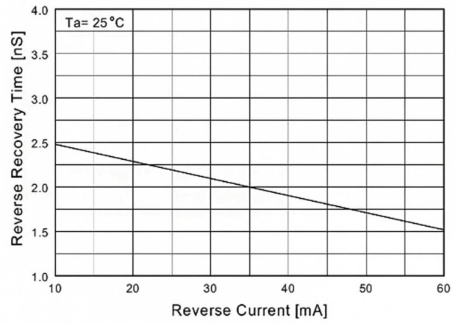

Figure 7. Reverse Recovery Time vs. Reverse Current TRR - IR 10 mA to 60 mA

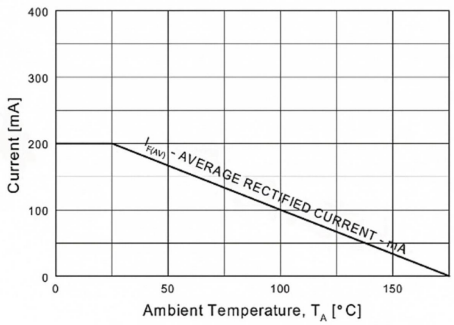

Figure 8. Average Rectified Current ($I_{F(AV)}$) vs. Ambient Temperature (T_A)

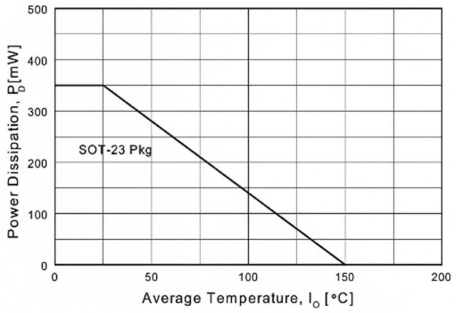

Figure 9. Power Derating Curve

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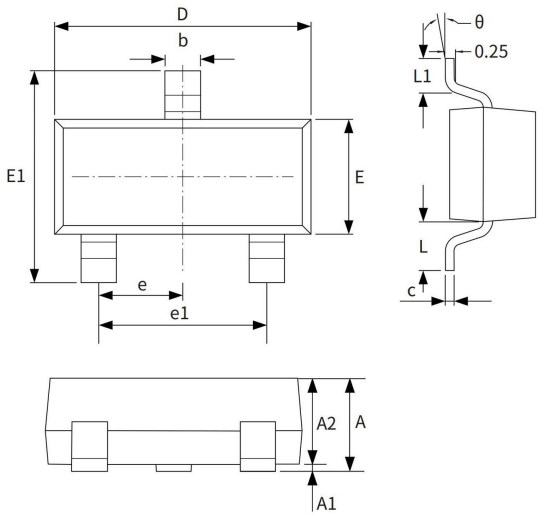
Ordering Information

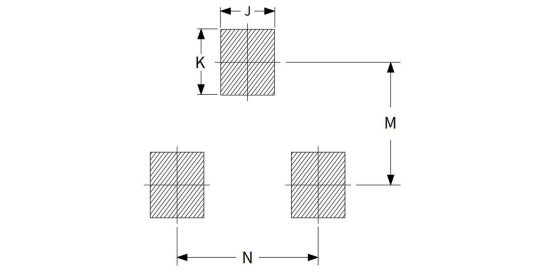
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	30000	240000	7''

Package Outline Dimensions (SOT-23)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.75	0.85	0.030	0.033
K	0.85	0.95	0.033	0.037
M	1.95	2.05	0.077	0.081
N	1.85	1.95	0.073	0.077