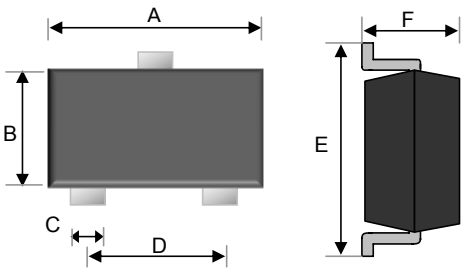
TAIWAN SEMICONDUCTOR

MMBD4148/SE/CC/CA
350mW SMD Switching Diode

Small Signal Diode

SOT-23



Features

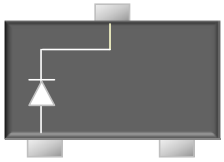
- ✧Fast switching speed
- ✧Surface device type mounting
- ✧Moisture sensitivity level 1
- ✧Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ✧Pb free version and RoHS compliant
- ✧Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.80	3.00	0.110	0.118
B	1.20	1.40	0.047	0.055
C	0.30	0.50	0.012	0.020
D	1.80	2.00	0.071	0.079
E	2.25	2.55	0.089	0.100
F	0.90	1.20	0.035	0.047

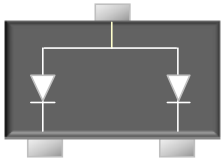
Mechanical Data

- ✧Case :SOT-23 small outline plastic package
- ✧Terminal: Matte tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ✧High temperature soldering guaranteed: 260°C/10s
- ✧Weight : 0.008gram (approximately)
- ✧Marking Code: 5D.A7.A4.A1

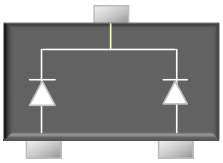
Pin Configuration



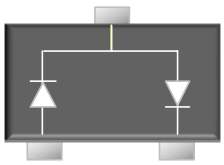
MMBD4148



MMBD4148CA



MMBD4148CC

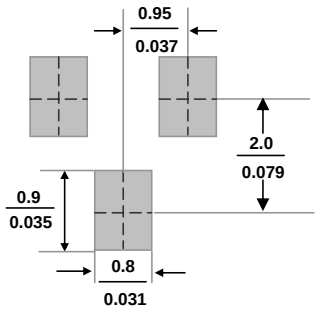


MMBD4148SE

Ordering Information

Part No.	Package	Packing Code	Packing	Marking
MMBD4148	SOT-23	RF	3K / 7" Reel	5D
MMBD4148CC	SOT-23	RF	3K / 7" Reel	A4
MMBD4148CA	SOT-23	RF	3K / 7" Reel	A1
MMBD4148SE	SOT-23	RF	3K / 7" Reel	A7
MMBD4148	SOT-23	RFG	3K / 7" Reel	5D
MMBD4148CC	SOT-23	RFG	3K / 7" Reel	A4
MMBD4148CA	SOT-23	RFG	3K / 7" Reel	A1
MMBD4148SE	SOT-23	RFG	3K / 7" Reel	A7

Suggested PAD Layout



Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Type Number		Symbol	Value	Units
Power Dissipation		P_D	350	mW
Repetitive Peak Reverse Voltage		V_{RRM}	100	V
Reverse Voltage		V_R	75	V
Average Rectified Forward Current		$I_{F(AV)}$	200	mA
Repetitive Peak Forward Current		I_{FRM}	700	mA
Non-Repetitive Peak Forward Surge Current	at t=1μs at t=1s	I_{FSM}	2 1	A
Thermal Resistance (Junction to Ambient)		RθJA	357	°C/W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to + 150	°C

Note1. The suggested land pattern dimensions have been provided for reference only, as actual pad layouts may vary despending on application.

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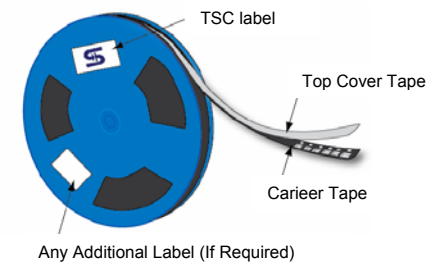
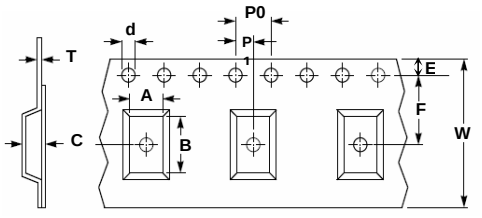
Electrical Characteristics

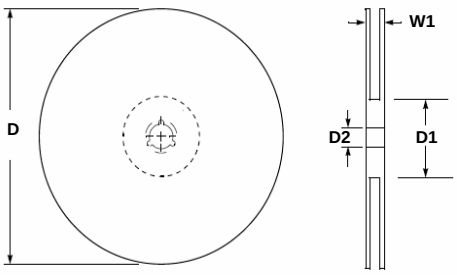
Type Number		Symbol	Min	Max	Units
Reverse Breakdown Voltage	I_R= 100μA I_R= 5μA	$V_{(BR)}$	100 75	- -	V
Forward Voltage	I_F= 10mA	V_F	-	1.0	V
Reverse Leakage Current	V_R= 20V V_R= 75V V_R= 20V, Ta= 150 ℃	I_R	- - -	25.0 5.0 50.0	nA μA μA
Junction Capacitance	V_R=0V, f=1 MHz	C_J	-	4.0	pF
Reverse Recovery Time	I_F=10mA,V_R=6V,I_{RR}=1mA,R_L=100Ω	Trr	-	4.0	ns

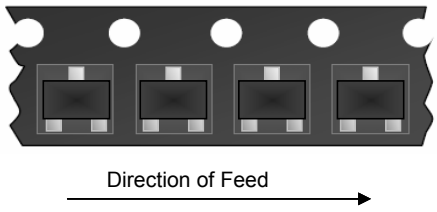
Tape & Reel specification



Item	Symbol	Dimension(mm)
Carrier width	A	3.15 ±0.10
Carrier length	B	2.77 ±0.10
Carrier depth	C	1.22 ±0.10
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178 ± 1
Reel inner diameter	D1	55 Min
Feed hole width	D2	13.0 ± 0.20
Sprocket hole position	E	1.75 ±0.10
Punch hole position	F	3.50 ±0.05
Sprocket hole pitch	P0	4.00 ±0.10
Embossment center	P1	2.00 ±0.05
Overall tape thickness	T	0.229 ±0.013
Tape width	W	8.10 ±0.20
Reel width	W1	12.30 ±0.20







Small Signal Diode

Rating and Sharacteristic Curves

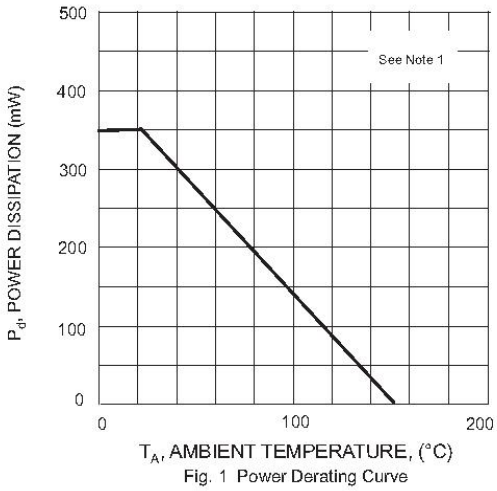


Fig. 1 Power Derating Curve

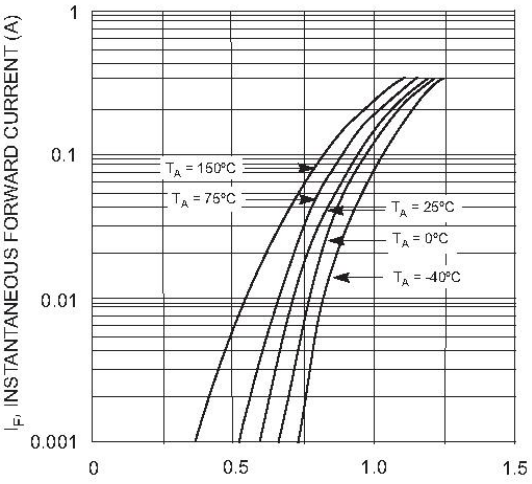


Fig. 2 Forward Characteristics

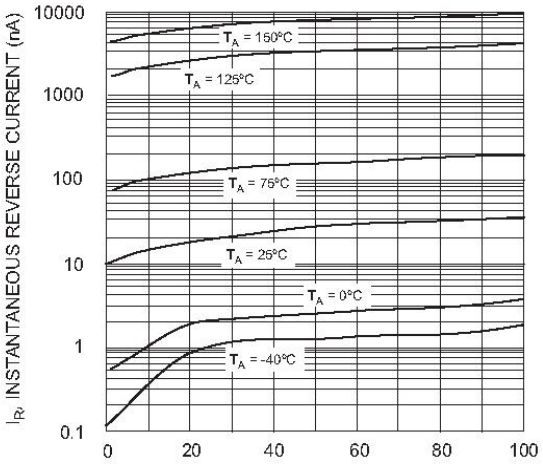


Fig. 3 Typical Reverse Characteristics

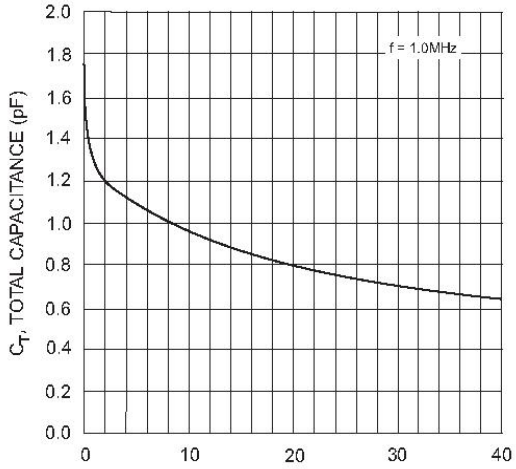


Fig. 4 Typical Capacitance vs. Reverse Voltage