

## 350mW, SMD Switching Diode

### FEATURES

- Designed for mounting on small surface
- Low Capacitance
- Low forward voltage drop
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

### MECHANICAL DATA

- Case: SOT-23
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 8 mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	200	mA
$V_{RRM}$	100	V
$I_{FSM}$	2	A
$V_F$ at $I_F=10mA$	1	V
$T_J$ Max.	150	°C
Package	SOT-23	
Configuration	Single dice	



ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}C$ unless otherwise noted)				
PARAMETER		SYMBOL	PART NUMBER	UNIT
Marking code on the device	MMBD4148		5D	
	MMBD4148CA		A1	
	MMBD4148CC		A4	
	MMBD4148SE		A7	
Repetitive peak reverse voltage		$V_{RRM}$	75	V
Forward current		$I_{F(AV)}$	200	mA
Repetitive peak forward surge current		$I_{FRM}$	700	mA
Non-repetitive peak forward surge current	at $t=1\mu s$	$I_{FSM}$	2	A
	at $t=1s$		1	
Junction temperature range		$T_J$	-55 to +150	°C
Storage temperature range		$T_{STG}$	-55 to +150	°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>LIMIT</b>	<b>UNIT</b>
Junction-to-ambient thermal resistance	$R_{\theta JA}$	357	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>MIN</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage per diode <sup>(1)</sup>	$I_F = 10\text{mA}, T_J = 25^\circ\text{C}$	$V_F$	-	1.0	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$V_R = 20\text{V}, T_J = 25^\circ\text{C}$	$I_R$	-	25.0	nA
	$V_R = 75\text{V}, T_J = 25^\circ\text{C}$		-	5.0	μA
	$V_R = 20\text{V}, T_A = 150^\circ\text{C}$		-	50.0	
Reverse breakdown voltage	$I_R = 5\mu\text{A}, T_J = 25^\circ\text{C}$	$V_{(BR)}$	75	-	V
	$I_R = 100\mu\text{A}, T_J = 25^\circ\text{C}$		100	-	
Junction capacitance	1 MHz, $V_R = 0\text{V}$	$C_J$	-	4.0	pF
Reverse recovery time	$I_F = 10\text{mA}, I_R = 1\text{mA}, R_L = 100\Omega, V_R = 6\text{V}$	$t_{rr}$	-	4.0	ns

**Notes:**

1. Pulse test with  $PW = 0.3\text{ ms}$
2. Pulse test with  $PW = 30\text{ ms}$

<b>ORDERING INFORMATION</b>				
<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>PACKAGE</b>	<b>PACKING</b>
MMBD414X (Note 1&2)	RF	G	SOT-23	3K / 7" Reel
	R5			10K / 13" Reel

**Notes:**

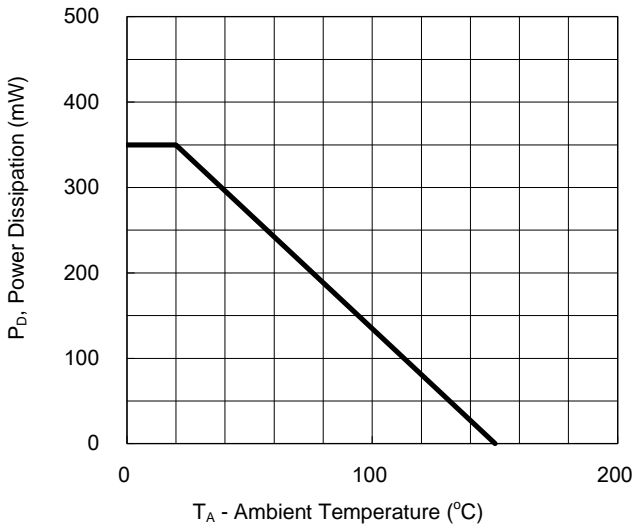
1. Whole series with green compound
2. "XX" is Device code from "8" to "8SE".

<b>EXAMPLE</b>				
<b>EXAMPLE P/N</b>	<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
MMBD4148 RFG	MMBD4148	RF	G	Green compound

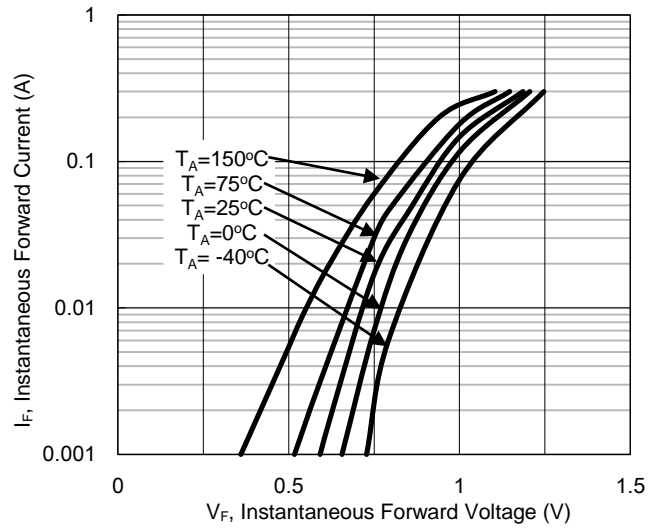
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

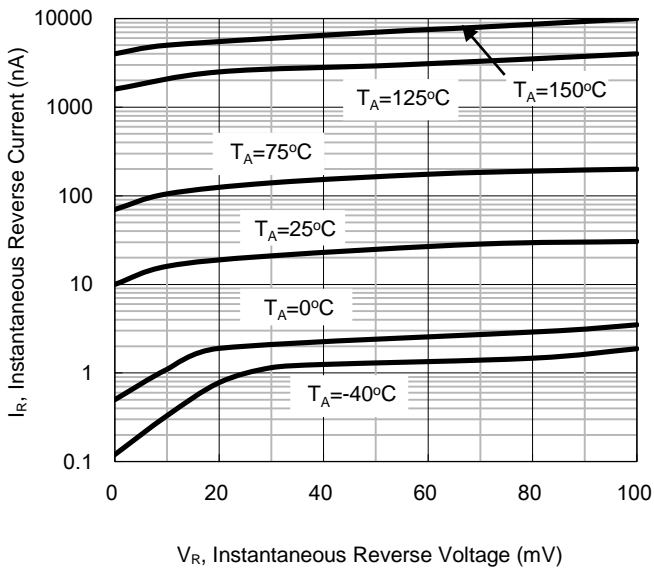
**Fig. 1 Power Derating Curve**



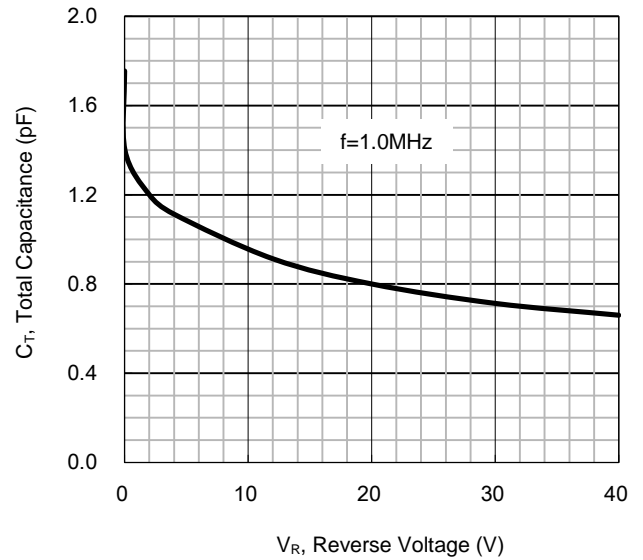
**Fig.2 Forward Characteristics**



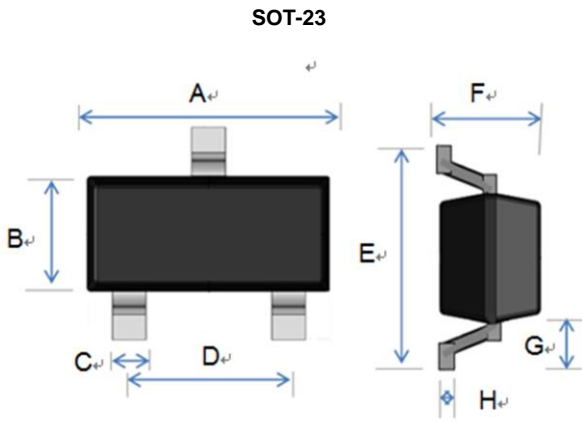
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Capacitance vs. Reverse Voltage**

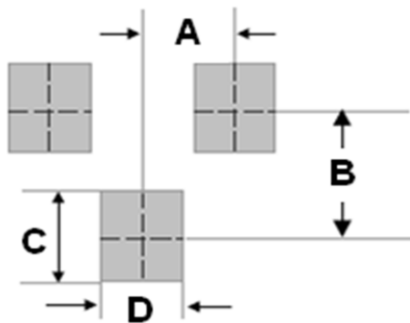


**PACKAGE OUTLINE DIMENSION**



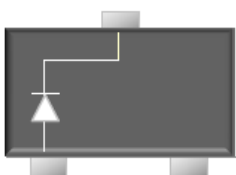
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.10 REF		0.004 REF	

**SUGGEST PAD LAYOUT**

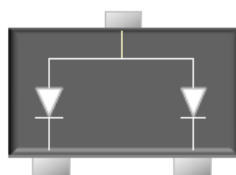


DIM.	Unit(mm)	Unit(inch)
	TYP	TYP
A	0.95	0.037
B	2.00	0.079
C	0.90	0.035
D	0.80	0.031

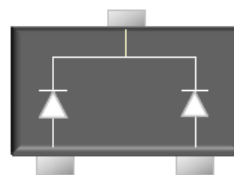
**PIN CONFIGURATION**



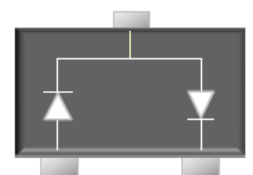
MMBD4148



MMBD4148CA



MMBD4148CC



MMBD4148SE

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