

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 ($T_A = 25^\circ\text{C}$ 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

THERMAL PERFORMANCE

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

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

PARAMETER	CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 10\text{mA}$, $T_J = 25^\circ\text{C}$	V_F	-	1.0	V
Reverse current @ rated V_R per diode ⁽²⁾	$V_R = 20\text{V}$, $T_J = 25^\circ\text{C}$	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 $PW = 30\text{ ms}$

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
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".

EXAMPLE

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

CHARACTERISTICS CURVES

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

Fig. 1 Power Derating Curve

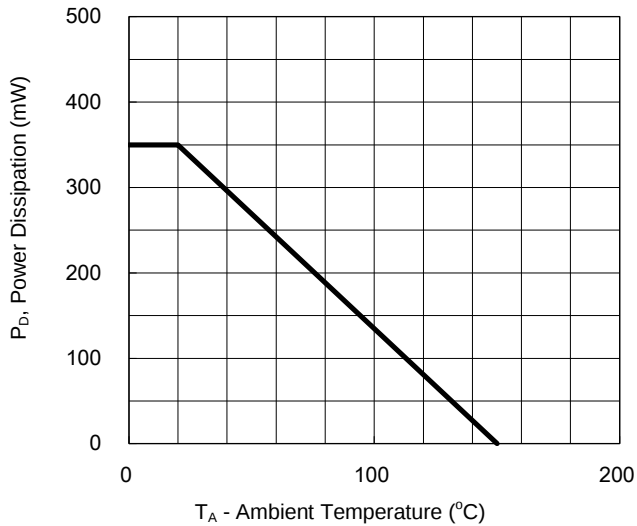


Fig.2 Forward Characteristics

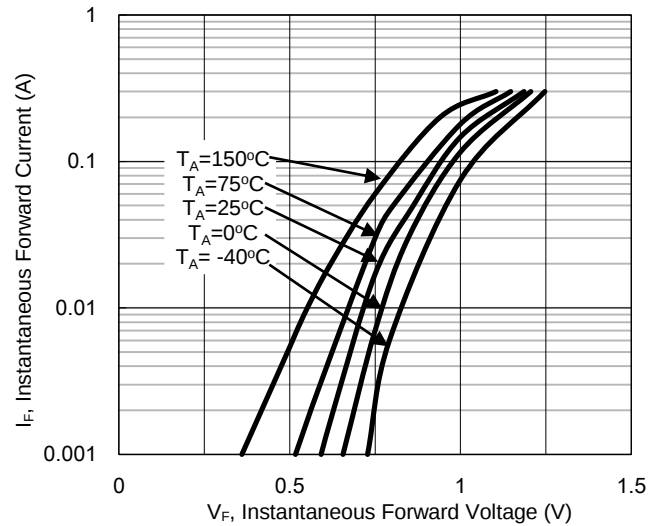


Fig.3 Typical Reverse Characteristics

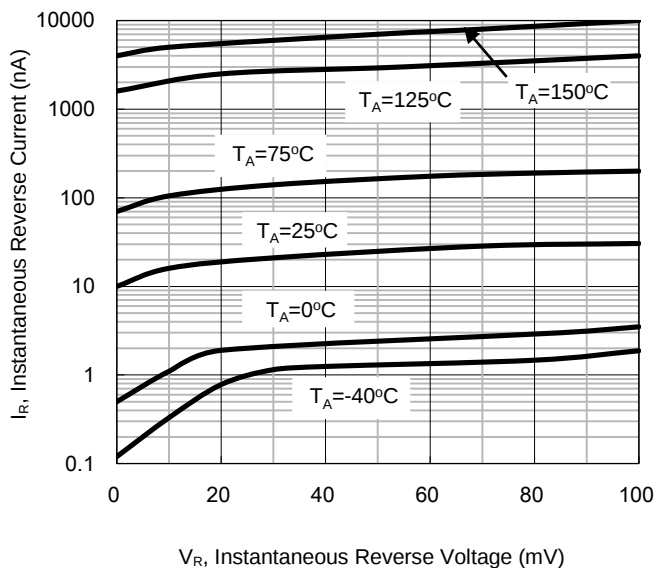
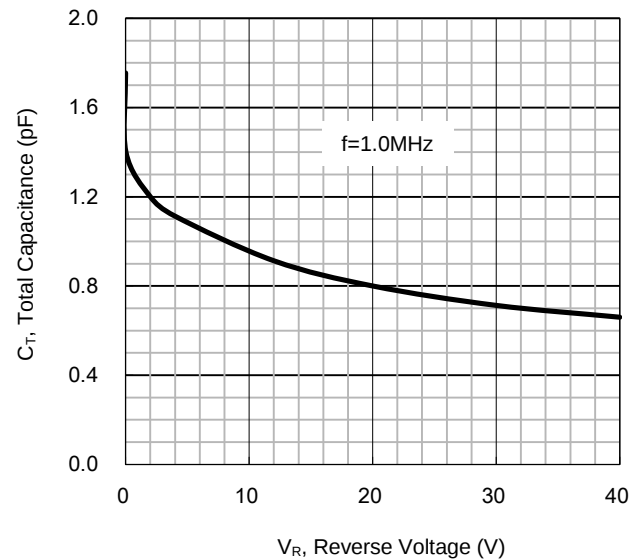
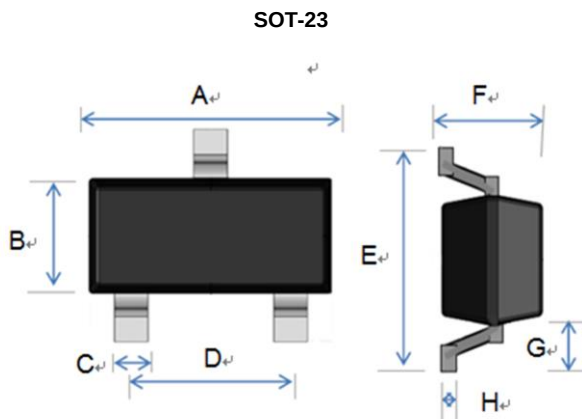


Fig.4 Typical Capacitance vs. Reverse Voltage

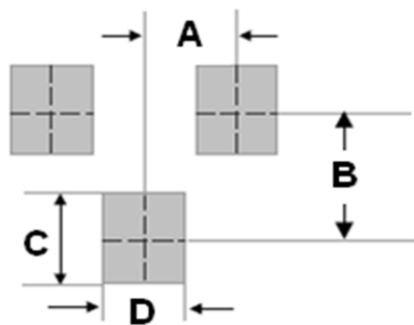


PACKAGE OUTLINE DIMENSION



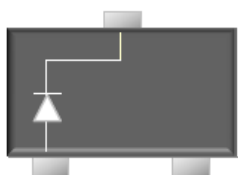
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.10 REF		0.004 REF	

SUGGEST PAD LAYOUT

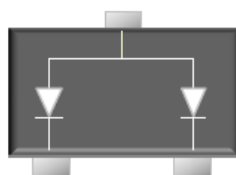


DIM.	Unit(mm)	Unit(inch)
	TYP	TYP
A	0.95	0.037
B	2.00	0.079
C	0.90	0.035
D	0.80	0.031

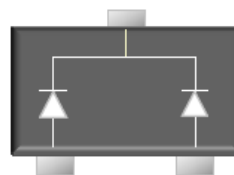
PIN CONFIGURATION



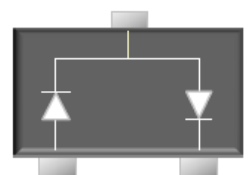
MMBD4148



MMBD4148CA



MMBD4148CC



MMBD4148SE

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