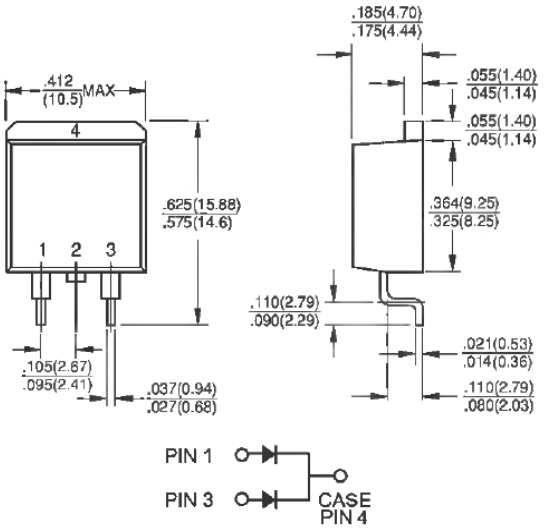
TAIWAN SEMICONDUCTOR

MBRS15H45CT

15.0AMPS Surface Mount Schottky Barrier Rectifiers

D²PAK



Features

- ✧ UL Recognized File # E-326854
- ✧ Low forward voltage drop, Low power loss
- ✧ High efficiency
- ✧ Meet MSL level 1, per J-STD-020D, Lead free maximum peak of 245℃
- ✧ Solder dip 265℃ max, 10s, per JESD 22-A111
- ✧ Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- ✧ Case: D²PAK
- ✧ Molding Compound meet UL 94V-0 flammability rating
- ✧ Terminals: Pure tin plated, lead free, solderable per J-STD-002B, and JESD22-B102D
- ✧ Polarity: As marked
- ✧ Weight: 1.35 grams

Dimensions in inches and (millimeters)

Marking Diagram

MBRS15HXXC = Specific Device Code
G = Green Compound
Y = Year
WW = Work Week

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Type Number	Symbol	MBRS 15H45CT		Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	45		V
Maximum RMS Voltage	V_{RMS}	31		V
Maximum DC Blocking Voltage	V_{DC}	45		V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	15		A
Peak Repetitive Surge Current (Rated V_R, Square Wave, 20KHz)	$I_{F(RMS)}$	15		A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load	I_{FSM}	150		A
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1		A
Maximum Instantaneous Forward Voltage (Note 2)	V_F	TYP	MAX	V
IF=7.5A, T_A=25℃		0.64	0.68	
IF=7.5A, T_A=125℃		0.55	0.6	
IF=15A, T_A=25℃		0.76	0.8	
IF=15A, T_A=125℃		0.67	0.7	
Maximum Reverse Current @ Rated V_R	I_R	TYP	MAX	
T_A=25 ℃		0.3	30	uA
T_A=125 ℃		0.62	10	mA
Voltage Rate of Change,(Rated V_R)	dV/dt	10000		V/us
Typical Junction Capacitance (Note 3)	Cj	290		pF
Typical Thermal Resistance (Note 4)	$R_{\theta jC}$	2		°C/W
Operating Temperature Range	T_J	- 65 to + 175		°C
Storage Temperature Range	T_{STG}	- 65 to + 175		°C

Note 1: Pulse Test : 300uS Pulse Width, 1% Duty Cycle

Note 2: 2.0uS Pulse Width, F=1.0KHz, Continues 10 Cycles

Note 3: Measure at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.

Note 4: Mount on Heatsink Size of 4" x 6" x 0.25" Al-Plate

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RATINGS AND CHARACTERISTIC CURVES (MBRS15H45CT)

FIG.1 FORWARD CURRENT DERATING CURVE

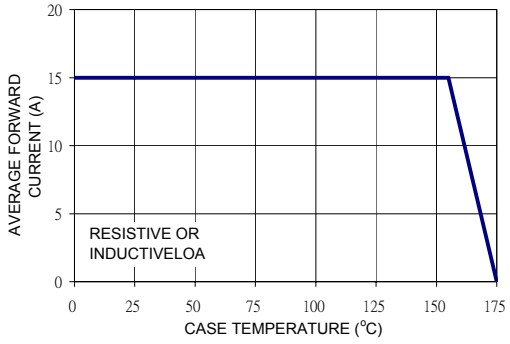


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

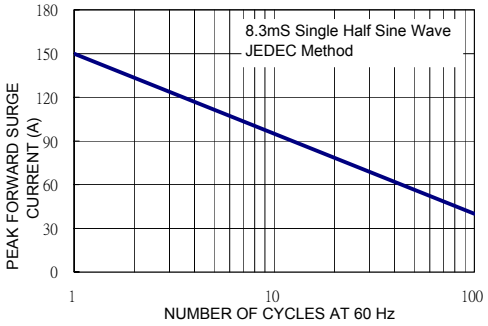


FIG. 3 TYPICAL FORWARD CHARACTERISRICS

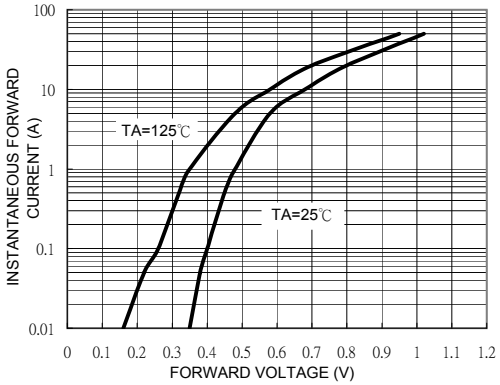


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

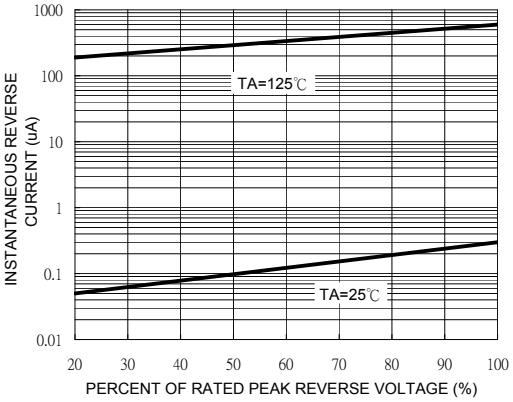


FIG. 5 TYPICAL JUNCTION CAPACITANCE

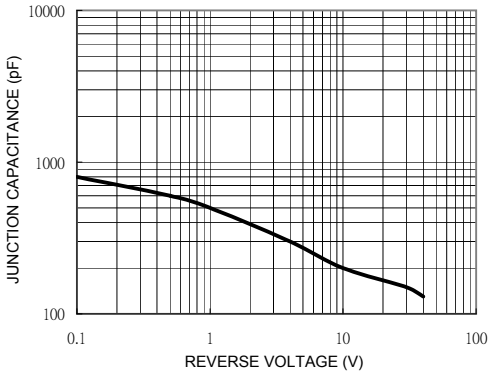
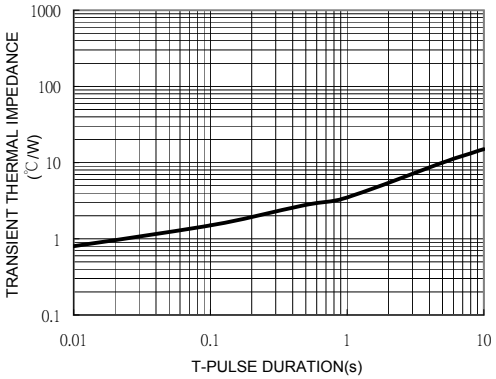


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



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