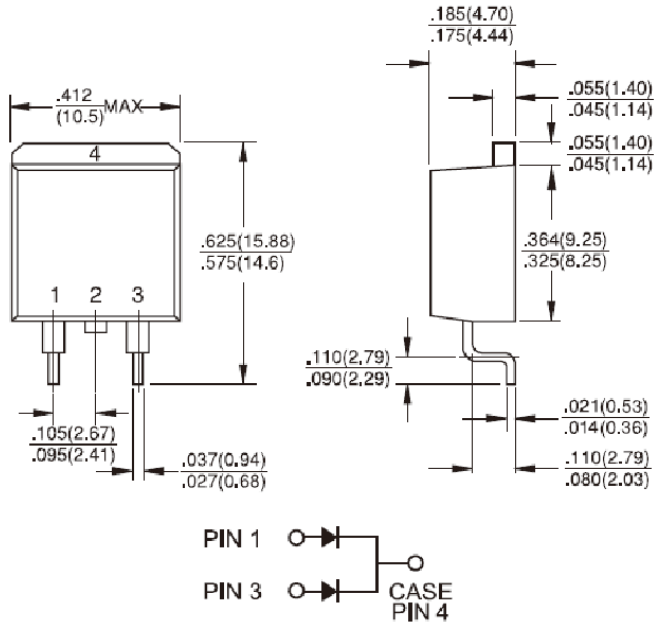
TAIWAN SEMICONDUCTOR

MBRS3045CT

30.0AMPS Surface Mount Schottky Barrier Rectifier

D²PAK

RoHS COMPLIANCE



Features

- ✧ Plastic material used carries Underwriters Laboratory Classifications 94V-0
- ✧ Metal silicon junction, majority carrier conduction
- ✧ Low power loss, high efficiency
- ✧ High current capability, low forward voltage drop
- ✧ Qualified as per AEC-Q101
- ✧ High Surge capability
- ✧ For use in low voltage, high frequency inverters, , free wheeling, and polarity protection applications
- ✧ Guarding for over voltage protection
- ✧ High temperature soldering guaranteed: 260℃/ 10 seconds at terminals

Mechanical Data

- ✧ Case: JEDEC D²PAK molded plastic
- ✧ Terminals: Leads solderable per MIL-STD-750, Method 2026
- ✧ Polarity: As marked
- ✧ Mounting position: Any
- ✧ Weight: 1.41 grams

Dimensions in inches and (millimeters)

Marking Diagram

MBRS3045CT = Specific Device Code
G = Green Compound
Y = Year
WW = Work Week

Maximum Ratings and Electrical Characteristic

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	MBRS3045CT	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 @Tc = 130℃(Total Device)	$I_{F(AV)}$	30	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	220	A
Maximum Instantaneous Forward Voltage at (Note 1) IF = 15A, T_A=25℃ IF = 15A, T_A=125℃ IF = 30A, T_A=25℃ IF = 30A, T_A=125℃	V_F	 0.70 0.60 0.90 0.75	V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A=25 ℃ T_A=125 ℃	I_R	 0.2 15	 mA mA
Voltage rate of change (Rated V_R)	dV/dt	10,000	V/uS
Maximum Thermal Resistance Per Leg (Note 2)	$R_{\theta JC}$ $R_{\theta JA}$	1.5 50	^{O}C/W
Operating Temperature Range	T_J	-65 to + 150	^{O}C
Storage Temperature Range	T_{STG}	-65 to + 150	^{O}C

Note1: Pulse Test : 300us Pulse Width, 1% Duty cycle

Note2: Thermal Resistance from Junction to Case Per Leg

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RATINGS AND CHARACTERISTIC CURVES (MBRS3045CT)

FIG.1 FORWARD CURRENT DERATING CURVE

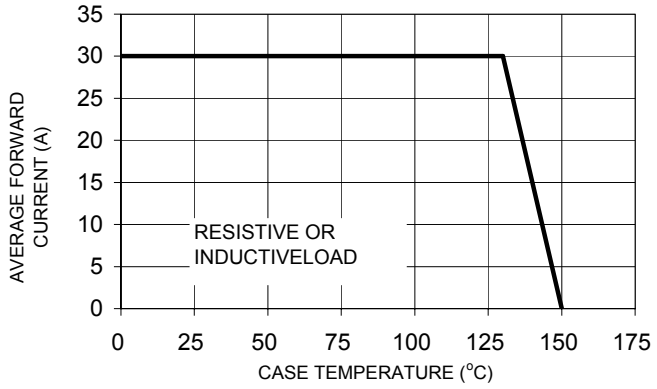


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

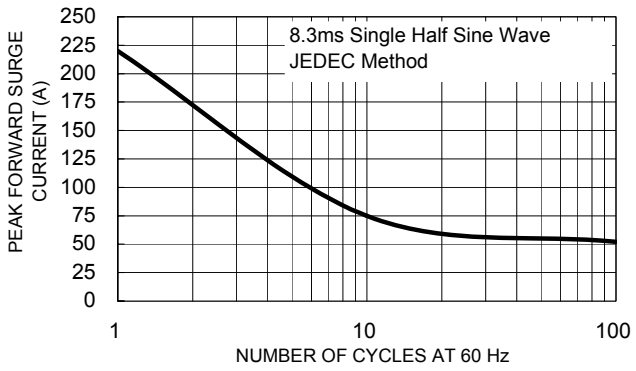


FIG. 3 TYPICAL FORWARD CHARACTERISRICS PER LEG

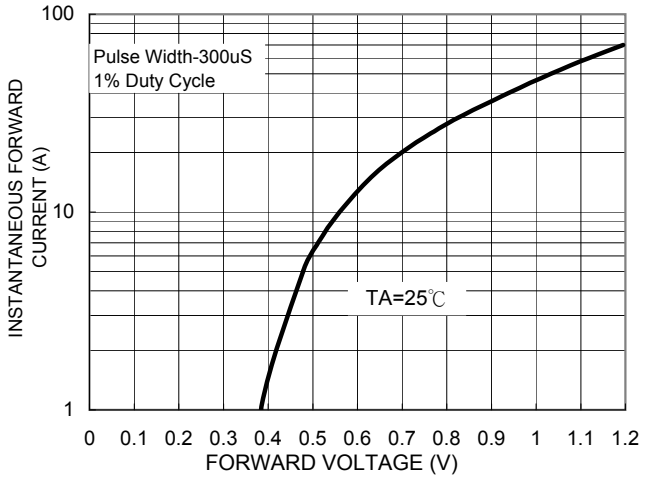


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

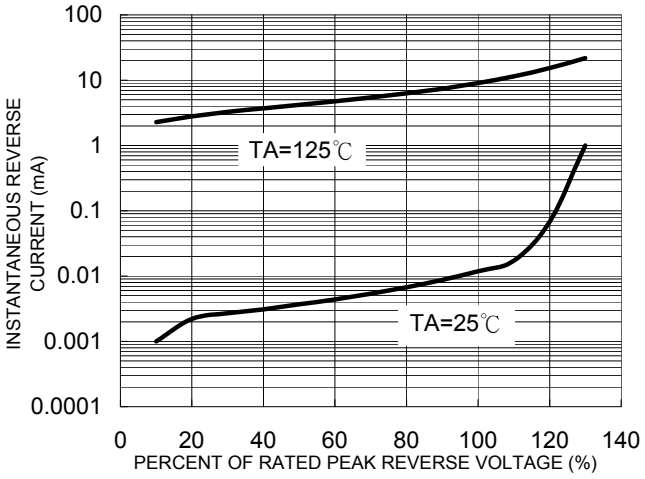


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

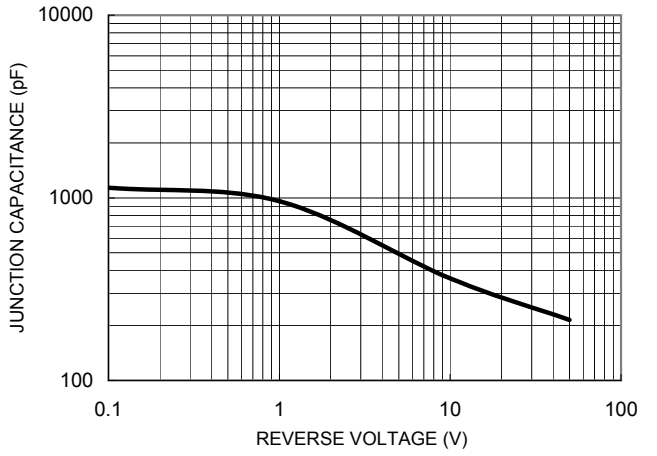
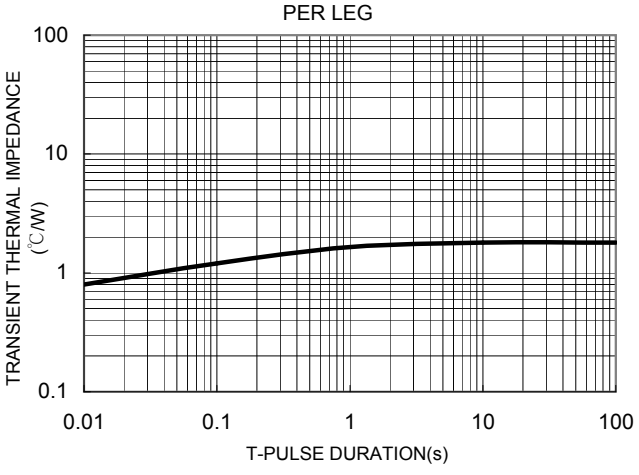


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



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