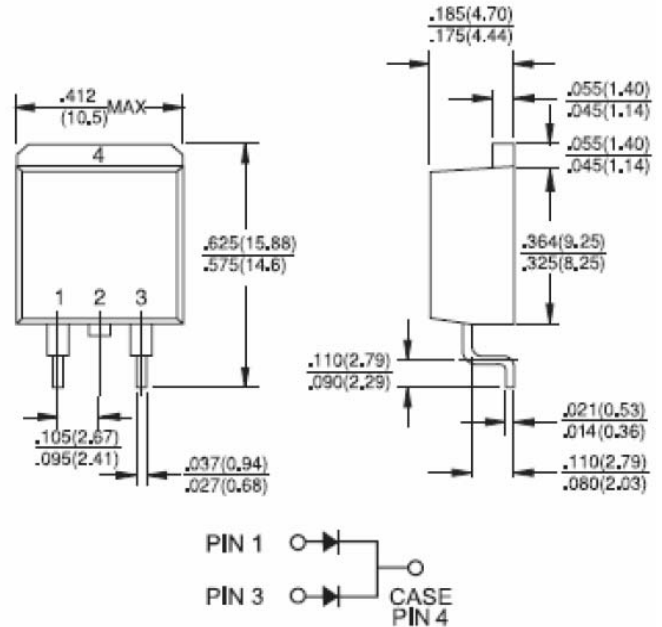




Features

- ✧ 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 °C / 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



MBRS30H45CT = Specific Device Code
 G = Green Compound
 Y = Year
 WW = Work Week

Maximum Ratings and Electrical Characteristic

Rating at 25 °C 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	MBRS30H45CT	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 @ $T_c = 155^\circ\text{C}$ (Total Device)	$I_{(AV)}$	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) $I_F = 15\text{A}, T_a = 25^\circ\text{C}$ $I_F = 15\text{A}, T_a = 125^\circ\text{C}$ $I_F = 30\text{A}, T_a = 25^\circ\text{C}$ $I_F = 30\text{A}, T_a = 125^\circ\text{C}$	V_F	0.70 0.60 0.90 0.75	V
Maximum Reverse Current $T_a = 25^\circ\text{C}$ $T_a = 125^\circ\text{C}$	I_R	0.2 15	mA mA
Voltage rate of change (Rated V_R)	dV/dt	10,000	V/ μS
Maximum Thermal Resistance Per Leg (Note 2)	$R_{\theta JC}$ $R_{\theta JA}$	1.5 50	$^\circ\text{C}/\text{W}$
Operating Temperature Range	T_J	-65 to + 175	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to + 175	$^\circ\text{C}$

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

Note2: Thermal Resistance from Junction to Case Per Leg

RATINGS AND CHARACTERISTIC CURVES (MBRS30H45CT)

Fig.1 Maximum Forward Current Derating Curve

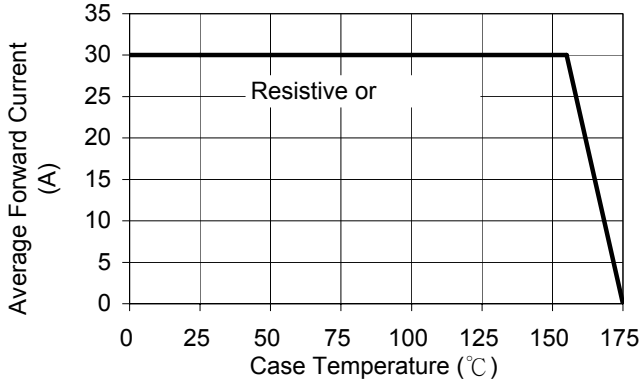


Fig. 2 Maximum Non-Repetitive Forward Surge Current Per Leg

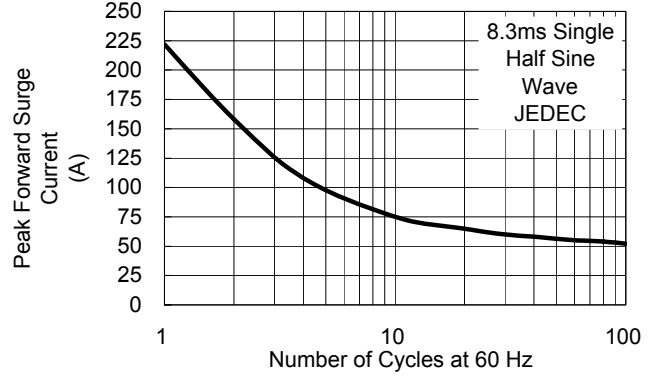


Fig. 3 Typical Forward Characteristics Per Leg

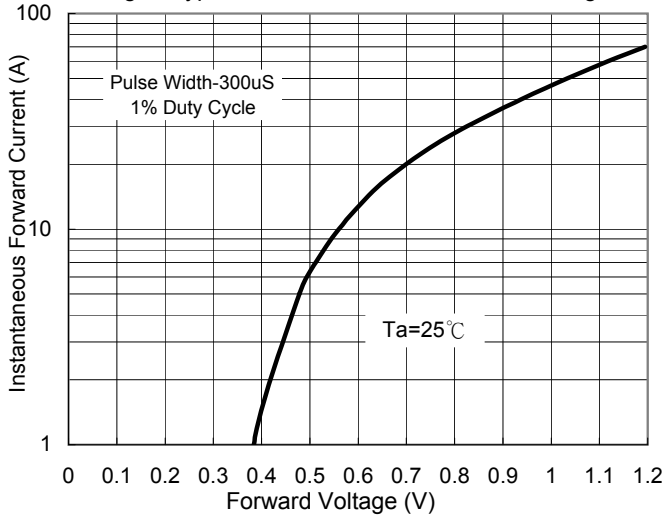


Fig. 4 Typical Reverse Characteristics Per Leg

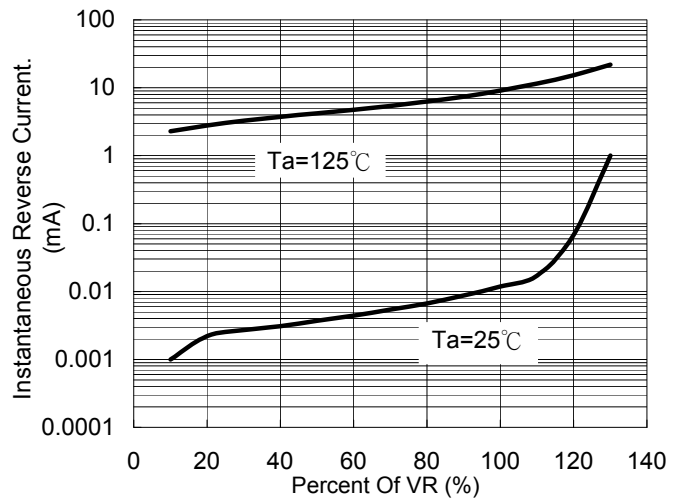


Fig. 5 Typical Junction Capacitance

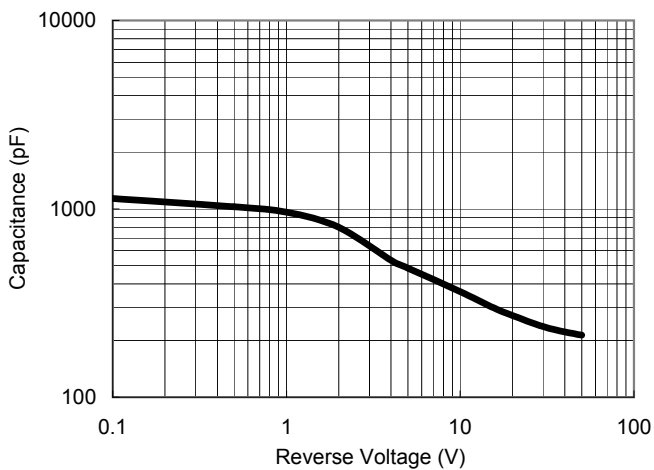


Fig. 6 Typical Transient Thermal Impedance Per Leg

