

D²PAK



Features

- ✧ Low forward voltage drop. Low power loss.
- ✧ High efficiency
- ✧ Meet MSL level 1, per J-STD-020D , lead free maximum peak of 245°C
- ✧ Solder dip 265°C max. 10 s, 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

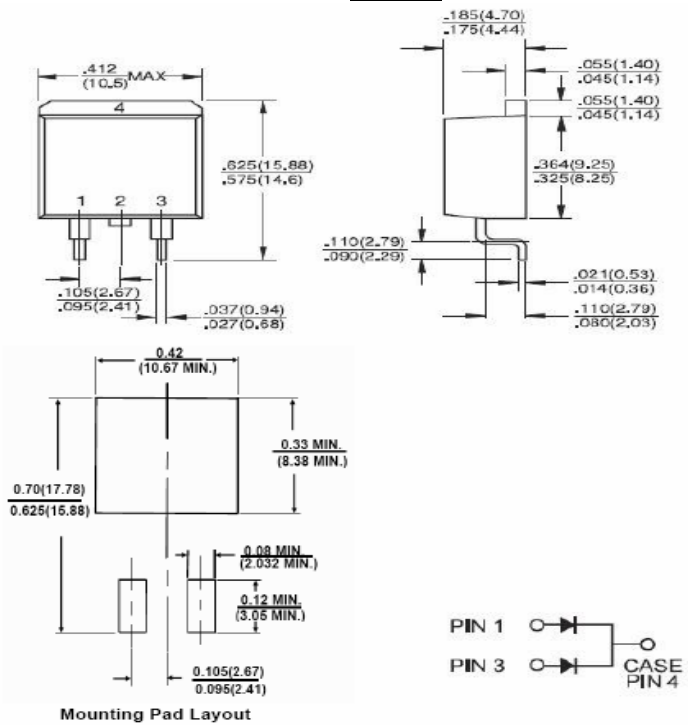
- ✧ Case: D²PAK
- ✧ Molding Compound meet UL 94V-0 flammability rating.
- ✧ Terminals: Matte tin plated leads, solderable per J-STD-002B, and JESD22-B102D
- ✧ Polarity: As marked
- ✧ Weight: 1.35 grams

Maximum Ratings and Electrical Characteristics

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%



Dimensions in inches and (millimeters)

Marking Diagram



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

Parameter	Symbol	MBRS3045CT-01		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	$I_{F(AV)}$	30		A
Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz)	$I_{F(RMS)}$	30		A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load	I_{FSM}	200		A
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1		A
Maximum Instantaneous Forward Voltage @ 15.0A / Ta=25°C @ 15.0A / Ta=125°C @ 30.0A / Ta=25°C @ 30.0A / Ta=125°C	V_F	TYP.	Max.	V
		0.63	0.70	
		0.56	0.60	
		0.75	0.80	
Maximum Reverse Current Ta=25 °C Ta=125 °C	I_R	TYP.	Max.	uA mA
		1.5	150	
		0.2	5.0	
Voltage rate of change (rated V_R)	dV/dt	10,000		V/uS
Typical Junction Capacitance (Note 2)	C_j	600		pF
Typical Thermal Resistance (Note 3)	$R_{\theta JC}$	2.0		°C/W
Operating Temperature Range	T_J	-65 to + 150		°C
Storage Temperature Range	T_{STG}	-65 to + 175		°C

Note1: 2.0uS Pulse Width, F=1.0KHz, Continues 10 cycles

Note2: Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.

Note3: Mount on Heatsink Size of 4" x 6" x 0.25" Al-Plate

RATINGS AND CHARACTERISTIC CURVES (MBRS3045CT-01)

Fig.1 Maximum Forward Current Derating Curve

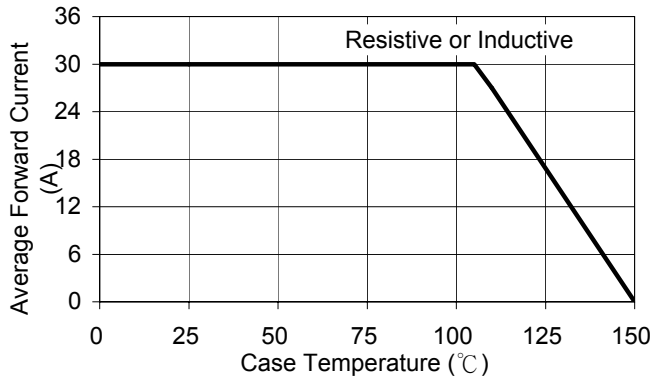


Fig. 2 Maximum Forward Surge Current

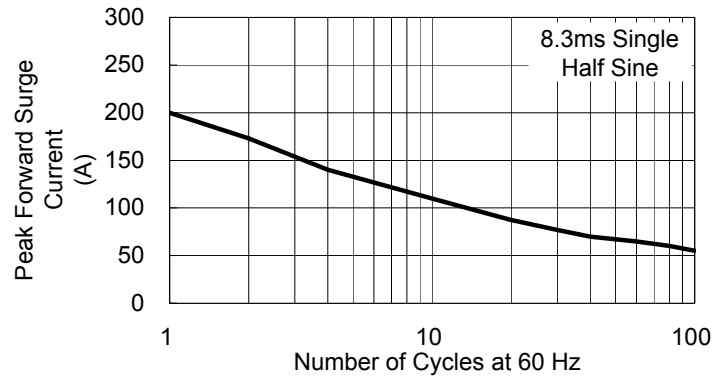


Fig. 3 Typical Forward Characteristics

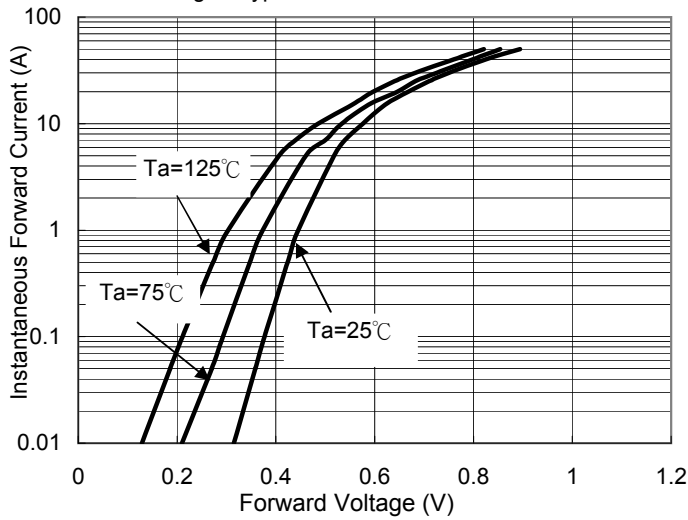


Fig. 4 Typical Reverse Characteristics

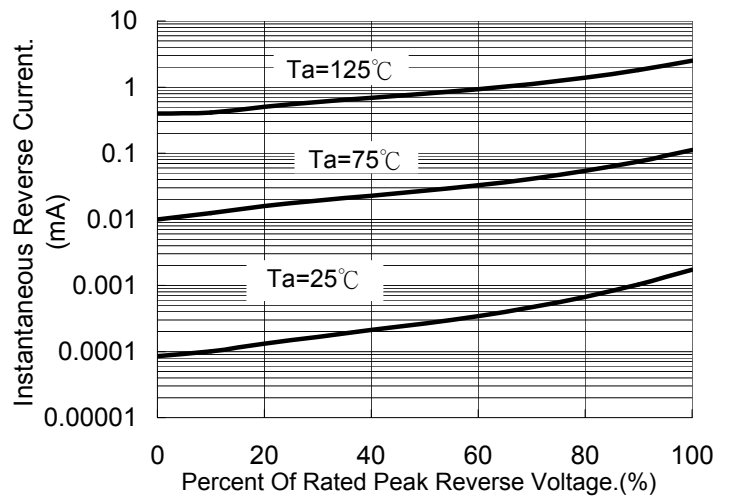


Fig. 5 Typical Junction Capacitance

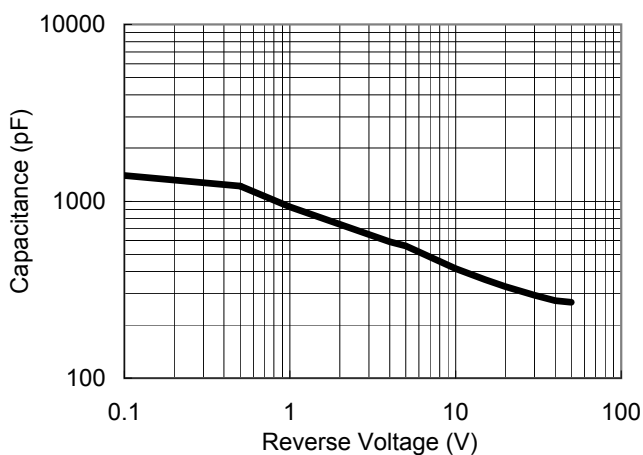


Fig. 6 Typical Transient Thermal Impedance

