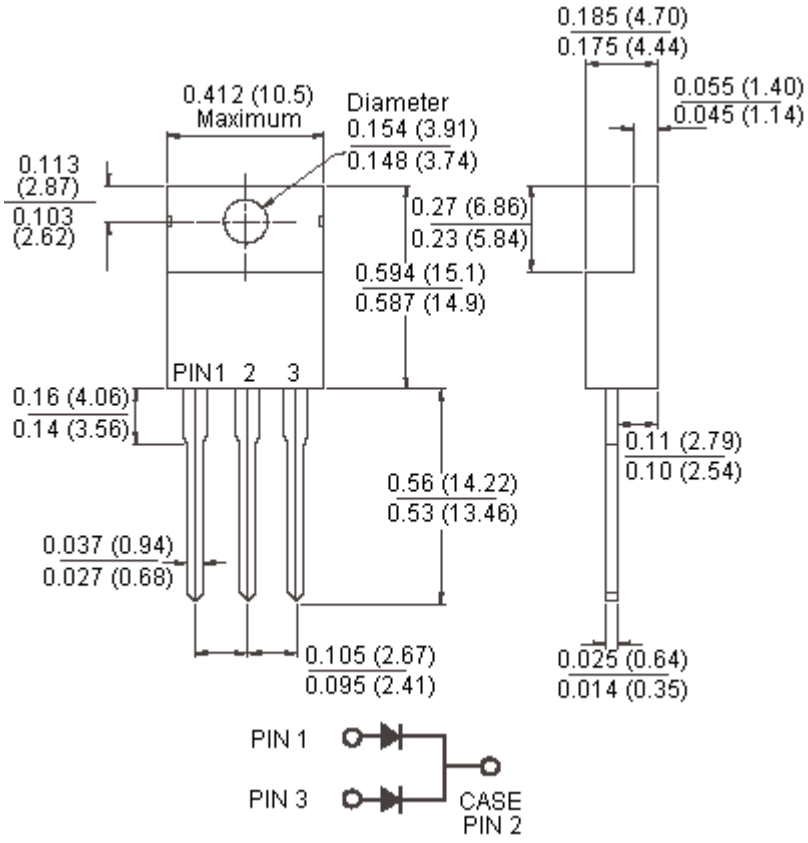
MBR30xCT Series

RoHS Compliant

Features:

- Plastic material.
- Metal silicon junction, majority carrier conduction.
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.
- Guardring for over voltage protection.
- High temperature soldering guaranteed: 260°C/10 seconds, 0.25 inch (6.35mm) from case.

TO-220AB



Dimensions : Inches (Millimetres)

Mechanical Data:

Cases	: JEDEC TO-220AB moulded plastic.
Terminals	: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026.
Polarity	: As marked.
Mounting position	: Any.
Mounting torque	: 5in. - lbs. maximum.
Weight	: 0.08 ounce, 2.24 grams.

Maximum Ratings and Electrical Characteristics

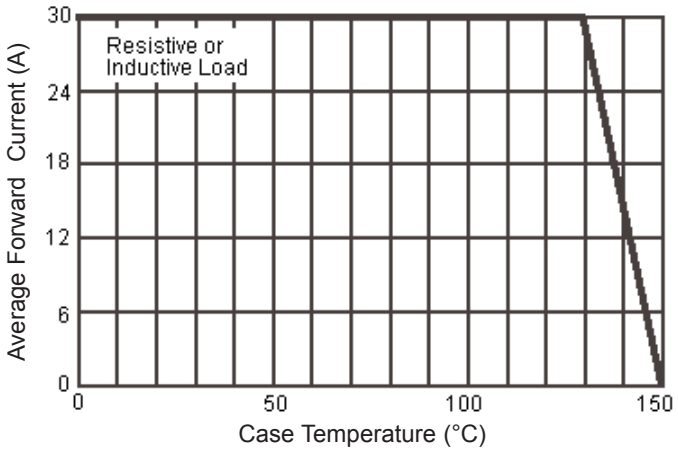
Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Type Number	Symbol	MBR 3035 CT	MBR 3045 CT	MBR 3050 CT	MBR 3060 CT	MBR 3090 CT	MBR 30100 CT	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	35	45	50	60	90	100	V
Maximum RMS Voltage	V_{RMS}	24	31	35	42	63	70	
Maximum DC Blocking Voltage	V_{DC}	35	45	50	60	90	100	
Maximum Average Forward Rectified Current at T_C = 130°C	$I_{(AV)}$	30						A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20KHz) at T_C = 130°C	I_{FRM}	30						
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	200						
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1.0			0.5			
Maximum Instantaneous Forward Voltage at (Note 2) I_F = 15A, T_C = 25°C I_F = 15A, T_C = 125°C I_F = 30A, T_C = 25°C I_F = 30A, T_C = 125°C	V_F	0.7 0.6 0.82 0.73		0.77 0.67 - -		0.84 0.70 0.94 0.82		V
Maximum Instantaneous Reverse Current at T_C = 25°C at Rated DC Blocking Voltage Per Leg at T_C = 125°C (Note 2)	I_R	0.2 15		0.2 10		0.2 7.5		µA µA
Voltage Rate of Change (Rated V_R)	dV/dt	10,000						V/µS
Typical Junction Capacitance	C_j	600		460		320		pF
Maximum Thermal Resistance Per Leg (Note 3)	$R_{\theta JC}$	1.0				1.5		°C/W
Operating Junction Temperature Range	T_J	-65 to +150						°C
Storage Temperature Range	T_{STG}	-65 to +175						

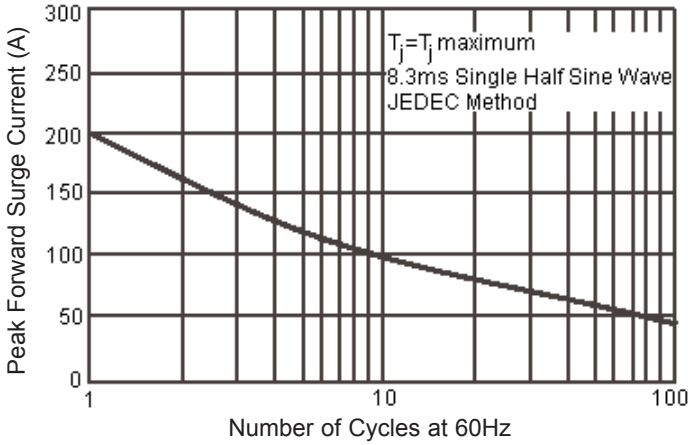
Notes: 1. 2.0µs Pulse Width, f = 1.0KHz
2. Pulse Test: 300µs Pulse Width, 1% Duty Cycle
3. Thermal Resistance from Junction to Case Per Leg, with Heatsink Size (4 x 6 x 0.25 inches) Al-Plate.

Ratings and Characteristic Curves (MBR30100CT, 3035CT, 3045CT, 3050CT, 3060CT, 3090CT)

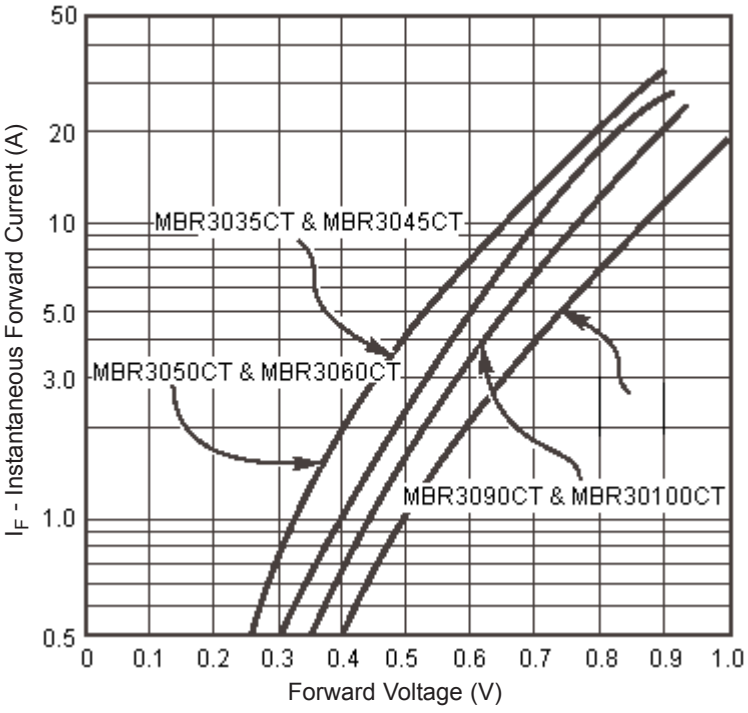
Forward Current Derating Curve



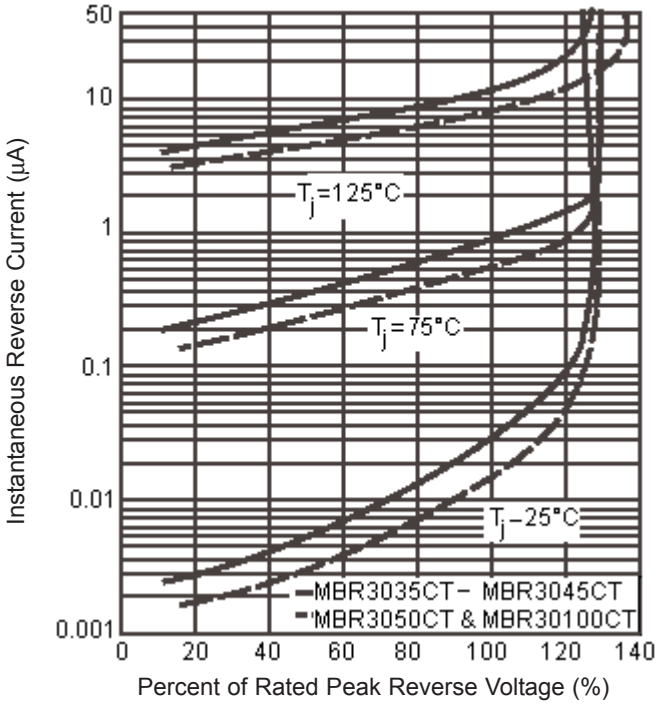
Maximum Non-Repetitive Peak Forward Surge Current Per Leg



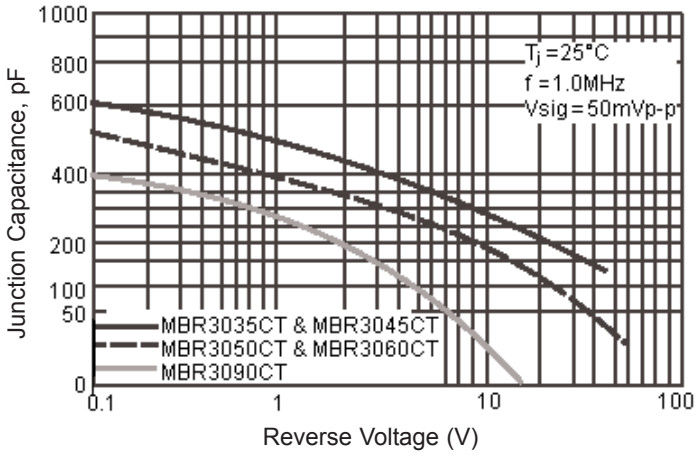
Typical Instantaneous Forward Characteristics Per Leg



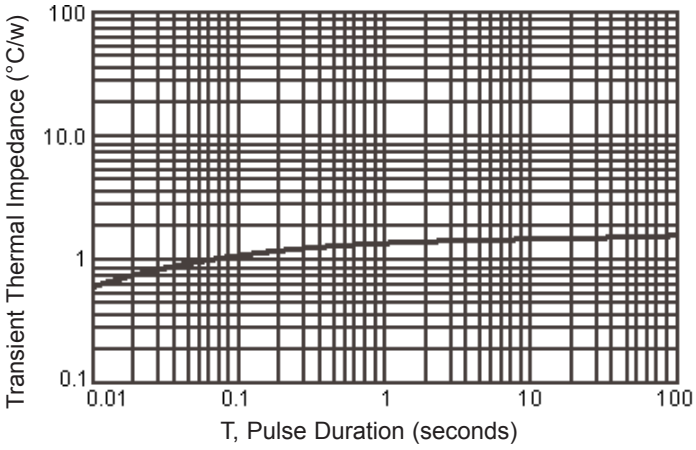
Typical Reverse Characteristics Per Leg



Typical Junction Capacitance Per Leg



Typical Transient Thermal Impedance Per Leg



Part Number Table

Description	Part Number
Diode, Schottky, 30A, 100V	MBR30100CT
Diode, Schottky, 30A, 35V	MBR3035CT
Diode, Schottky, 30A, 45V	MBR3045CT
Diode, Schottky, 30A, 50V	MBR3050CT
Diode, Schottky, 30A, 60V	MBR3060CT
Diode, Schottky, 30A, 90V	MBR3090CT

Notes:

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