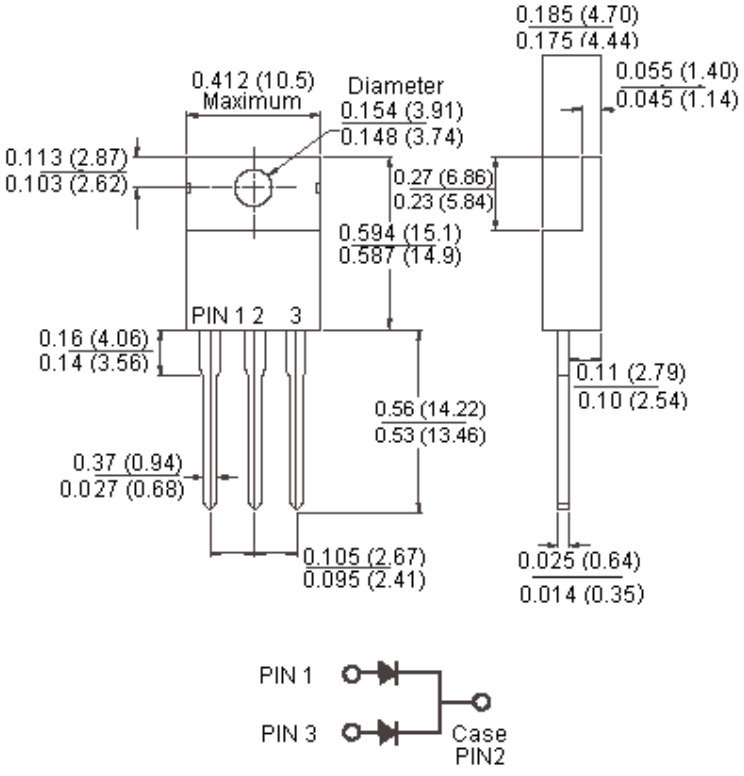
MBR10xCT Series

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

Maximum Ratings and Electrical Characteristics

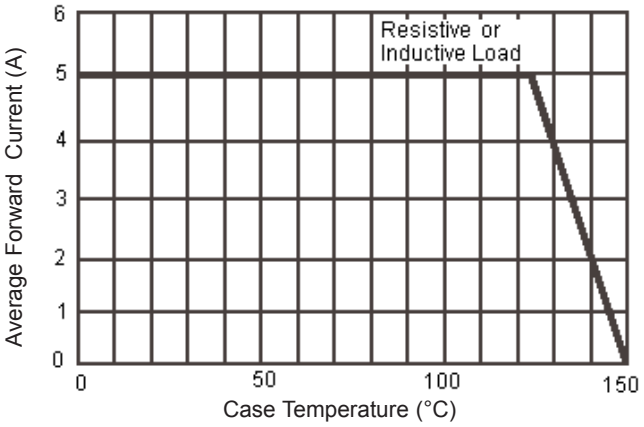
Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Type Number	Symbol	MBR 1045 CT	MBR 1060 CT	MBR 10100 CT	MBR 10150 CT	MBR 10200 CT	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	45	60	100	150	200	V
Maximum RMS Voltage	V_{RMS}	31	42	70	105	140	
Maximum DC Blocking Voltage	V_{DC}	45	60	100	150	200	
Maximum Average Forward Rectified Current at T_C = 125°C	$I_{(AV)}$	10					A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20KHz) at T_C = 125°C	I_{FRM}	32					
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	120					
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1.0				0.5	
Maximum Instantaneous Forward Voltage at: (Note 2) I_F = 5A, T_C = 25°C I_F = 5A, T_C = 125°C I_F = 10A, T_C = 25°C I_F = 10A, T_C = 125°C	V_F	0.70 0.57 0.80 0.67	0.80 0.65 0.90 0.75	0.85 0.75 0.95 0.85	0.88 0.78 0.98 0.88		V
Maximum Instantaneous Reverse Current at T_C = 25°C at Rated DC Blocking Voltage	I_R	0.1					µA
at T_C = 125°C (Note 2)		15	10	2.0			
Voltage Rate of Change (Rated V_R)	dV/dt	10,000					V/µS
Maximum Thermal Resistance, (Note 3)	$R_{\theta JC}$	1.5					°C/W
Operating Junction Temperature Range	T_J	-65 to +150					°C
Storage Temperature Range	T_{STG}	-65 to +175					

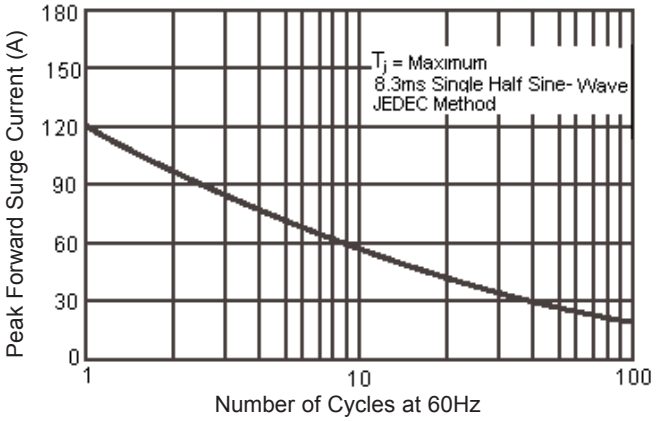
Notes: 1. 2.0µs Pulse Width, f = 1.0KHz.
2. Pulse Test: 300µs Pulse Width, 1% Duty Cycle.
3. Thermal Resistance from Junction to Case Per Leg, Mount on Heatsink Size of 2 in x 3 in x 0.25in Al-Plate.

Ratings and Characteristic Curves (MBR10100CT, 10150CT, 10200CT, 1045CT, 1060CT)

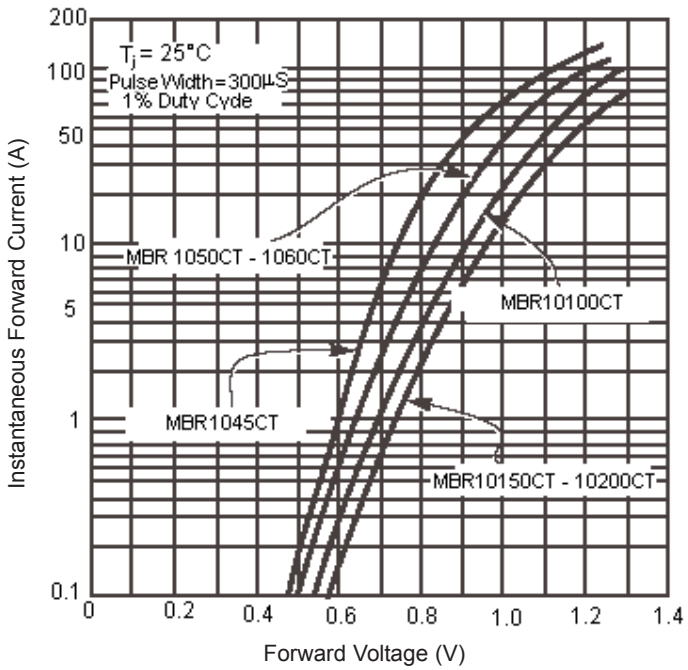
Forward Current Derating Curve



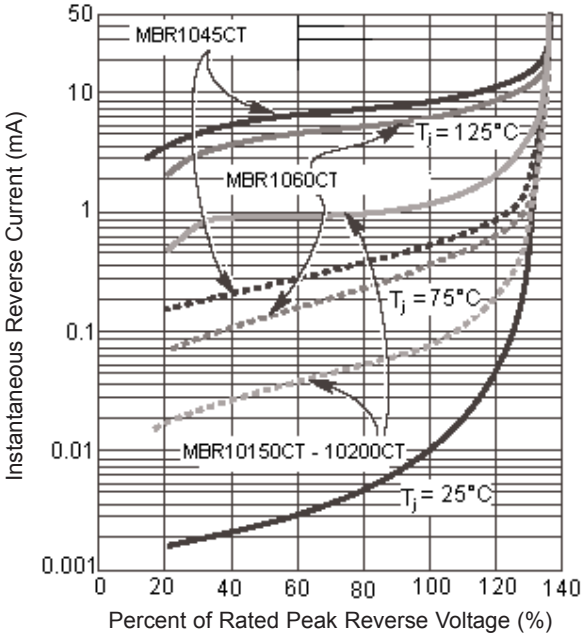
Maximum Non-Repetitive Peak Forward Surge Current



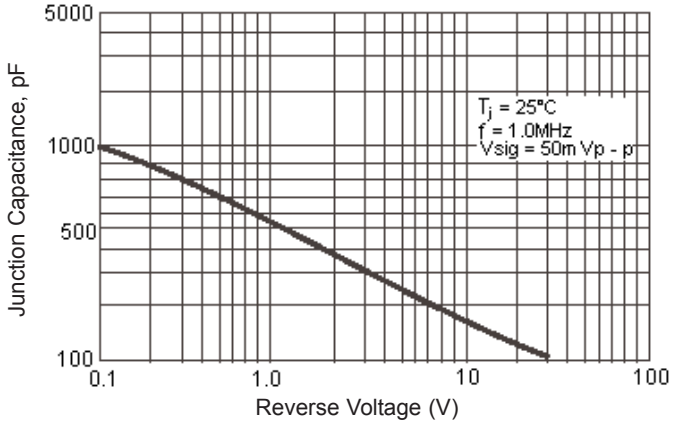
Typical Forward Characteristics



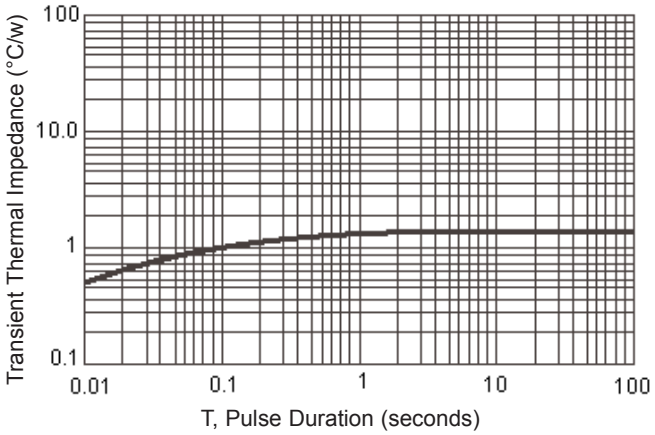
Typical Reverse Characteristics



Typical Junction Capacitance



Typical Transient Thermal Characteristics Per Leg



Part Number Table

Description	Part Number
Diode, Schottky, 10A, 100V	MBR10100CT
Diode, Schottky, 10A, 150V	MBR10150CT
Diode, Schottky, 10A, 200V	MBR10200CT
Diode, Schottky, 10A, 45V	MBR1045CT
Diode, Schottky, 10A, 60V	MBR1060CT

Notes:

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