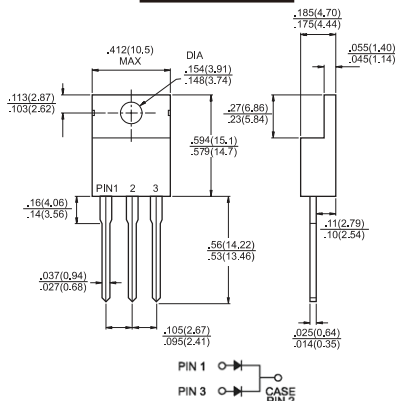




### Features

- ✦ 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
- ✦ High surge capability
- ✦ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ✦ Guardring for overvoltage protection
- ✦ High temperature soldering guaranteed: 260°C/10 seconds, 0.25" (6.35mm) from case
- ✦ Green compound with suffix "G" on packing code & prefix "G" on datecode.



Dimensions in inches and (millimeters)

### Marking Diagram



- MBR20XXCT = Specific Device Code
- G = Green Compound
- Y = Year
- WW = Work Week

### Mechanical Data

- ✦ Cases: JEDEC TO-220AB molded plastic
- ✦ Terminals: Pure tin plated, lead free. solderable per MIL-STD-750, Method 2026
- ✦ Polarity: As marked
- ✦ Mounting position: Any
- ✦ Mounting torque: 5 in. - lbs. max
- ✦ 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, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	MBR 2035	MBR 2045	MBR 2050	MBR 2060	MBR 2090	MBR 20100	MBR 20150	MBR 20200	Units
		CT	CT	CT	CT	CT	CT	CT	CT	
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	90	100	150	200	V
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	63	70	105	140	V
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	90	100	150	200	V
Maximum Average Forward Rectified Current at $T_c=135^\circ\text{C}$	$I_{(AV)}$	20								A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_c=135^\circ\text{C}$	$I_{FRM}$	20								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	150								A
Peak Repetitive Reverse Surge Current (Note 1)	$I_{RRM}$	1.0		0.5					A	
Maximum Instantaneous Forward Voltage at (Note 2)	$V_F$	—		0.80	0.85		0.99		V	
IF=10A, TC=25°C		—		0.70	0.75		0.87			
IF=10A, TC=125°C		—		0.84	0.95		1.23			
IF=20A, TC=25°C		—		0.72	0.85		1.10			
Maximum Instantaneous Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_c=125^\circ\text{C}$	$I_R$	0.1								mA mA
		15		10		5.0		0.15		
Voltage Rate of Change, (Rated $V_R$ )	$dV/dt$	10,000								V/ $\mu\text{S}$
Typical Junction Capacitance	$C_j$	400				320				pF
Typical Thermal Resistance Per Leg (Note 3)	$R_{\theta JC}$	1.0				2.0				°C/W
Operating Junction Temperature Range	$T_J$	-65 to +150								°C
Storage Temperature Range	$T_{STG}$	-65 to +175								°C

- Notes:
1. 2.0us Pulse Width, f=1.0 KHz
  2. Pulse Test: 300us Pulse Width, 1% Duty Cycle
  3. Thermal Resistance from Junction to Case Per Leg, with Heatsink Size (4"x6"x0.25") Al-Plate.

## RATINGS AND CHARACTERISTIC CURVES (MBR2035CT THRU MBR20200CT)

FIG.1- FORWARD CURRENT DERATING CURVE

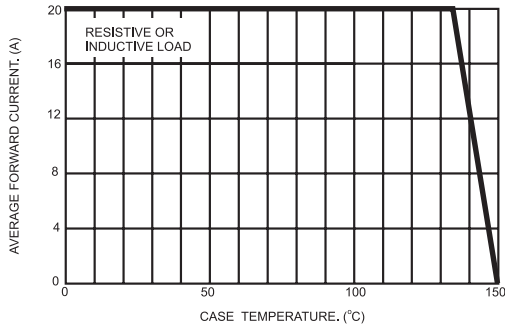


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

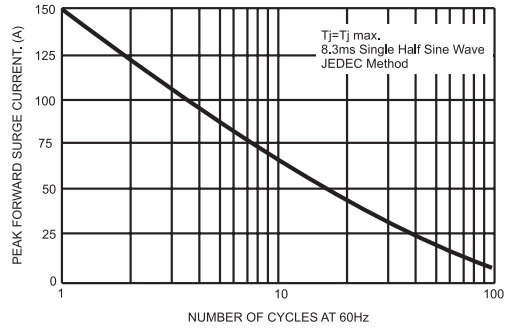


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

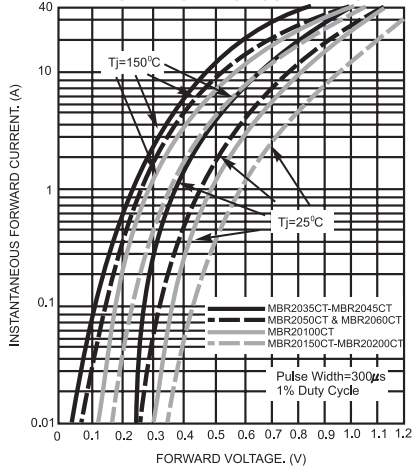


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

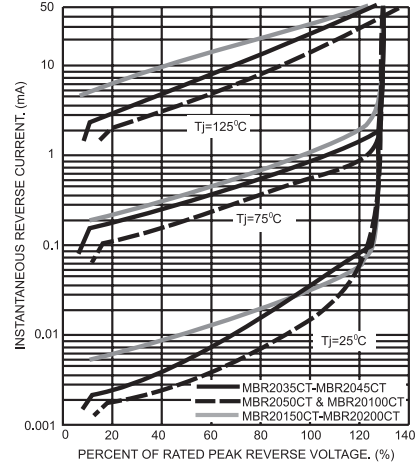


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

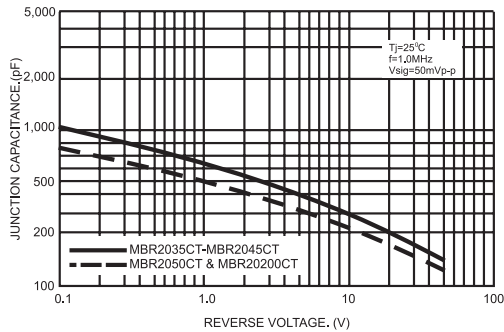


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

