



# MBR2035CT THRU MBR20200CT

## 20.0 AMPS. Schottky Barrier Rectifiers



Voltage Range  
35 to 200 Volts  
Current  
20.0 Amperes

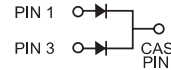
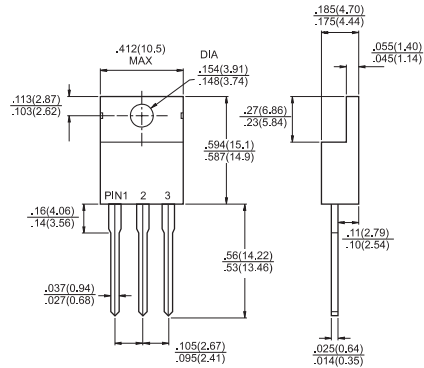
### Features

- ✦ 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

### Mechanical Data

- ✦ Cases: JEDEC TO-220 molded plastic
- ✦ Terminals: Leads 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

### TO-220



Dimensions in inches and (millimeters)

### 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	MBR20 35CT	MBR20 45CT	MBR20 50CT	MBR20 60CT	MBR20 100CT	MBR20 150CT	MBR20 200CT	Units	
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	100	150	200	V	
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	70	105	140	V	
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	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 $T_C=135^\circ\text{C}$	$I_{FRM}$	20.0							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			1.0		A	
Maximum Instantaneous Forward Voltage at (Note 2) IF=10A, $T_C=25^\circ\text{C}$ IF=10A, $T_C=125^\circ\text{C}$ IF=20A, $T_C=25^\circ\text{C}$ IF=20A, $T_C=125^\circ\text{C}$	$V_F$	-		0.80		0.85		0.99	V	
		0.57		0.70		0.75		0.87		
		0.84		0.95		0.95		1.23		
		0.72		0.85		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		0.15			1.0		mA	
		15							20	mA
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				$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	-65 to +150							$^\circ\text{C}$	
Storage Temperature Range	$T_{STG}$	-65 to +175							$^\circ\text{C}$	

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

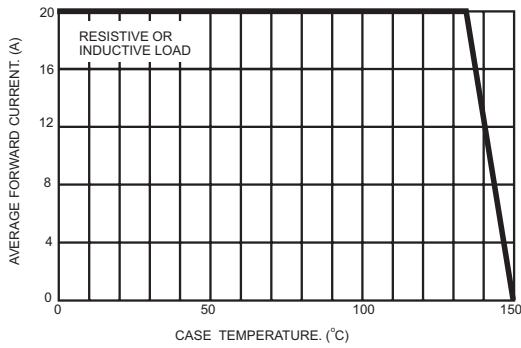


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

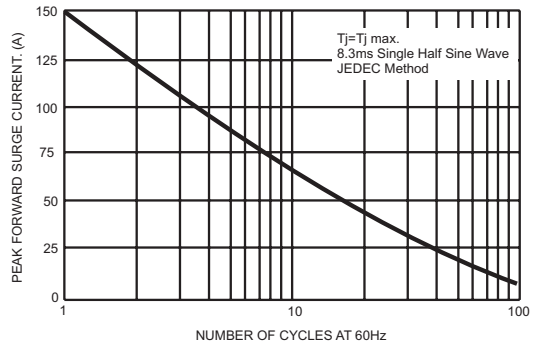


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

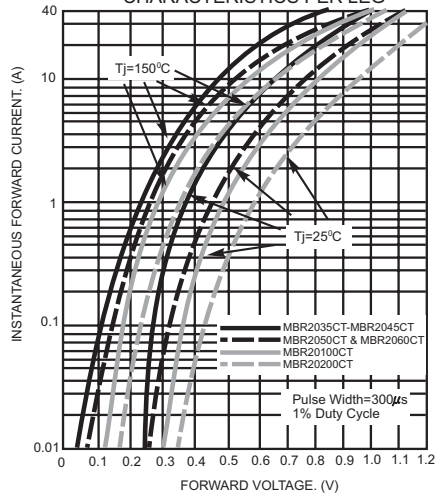


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

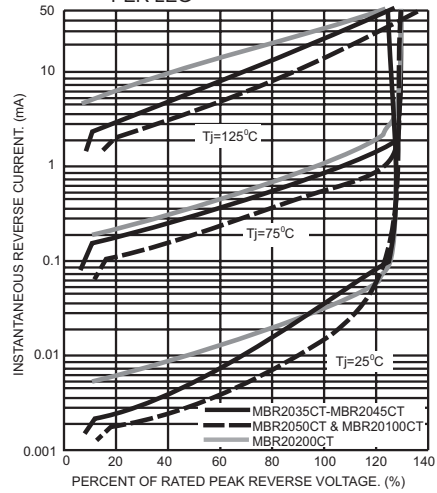


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

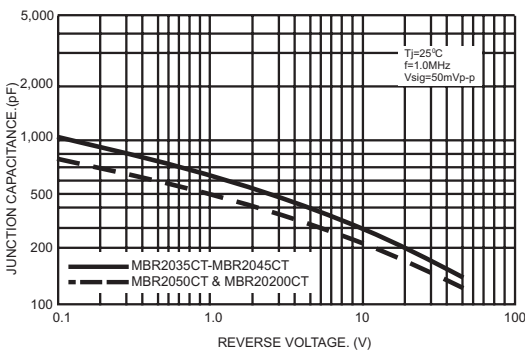


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

