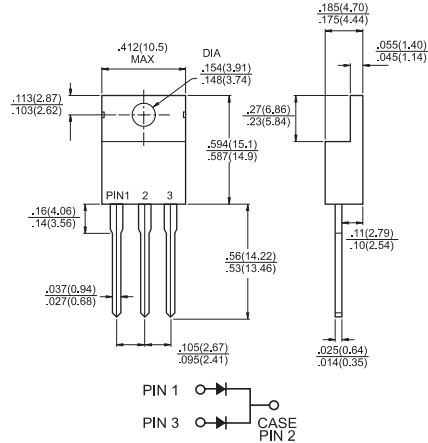


### TO-220AB



### 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-220AB molded plastic
- ✧ Polarity: As marked
- ✧ Mounting position: Any
- ✧ Mounting torque: 5 in. - lbs. max
- ✧ Weight: 0.08 ounce, 2.24 grams

### 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	MBR 2035 CT	MBR 2045 CT	MBR 2050 CT	MBR 2060 CT	MBR 2090 CT	MBR 20100 CT	MBR 20150 CT	Units			
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	90	100	150	V			
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	63	70	105	V			
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	90	100	150	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) IF=10A, TC=25°C IF=10A, TC=125°C IF=20A, TC=25°C IF=20A, TC=125°C	$V_F$	-	0.57	0.84	0.70	0.95	0.85	0.99	0.87	1.23	1.10	V
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		0.1				mA				
		15		10				5.0	mA			
Voltage Rate of Change, (Rated $V_R$ )	$dV/dt$	10,000							V/uS			
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 MBR20150CT)

FIG.1- FORWARD CURRENT DERATING CURVE

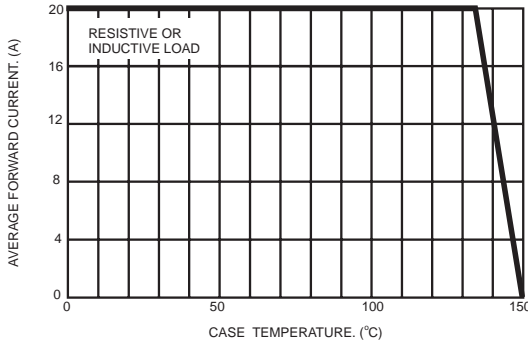


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

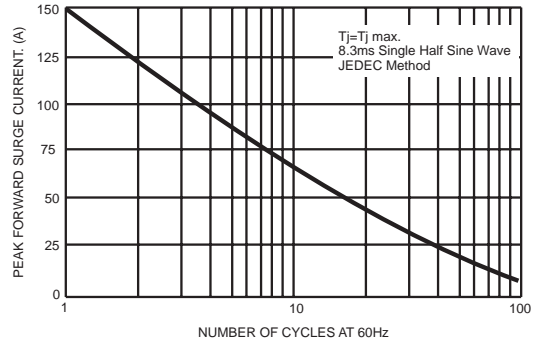


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

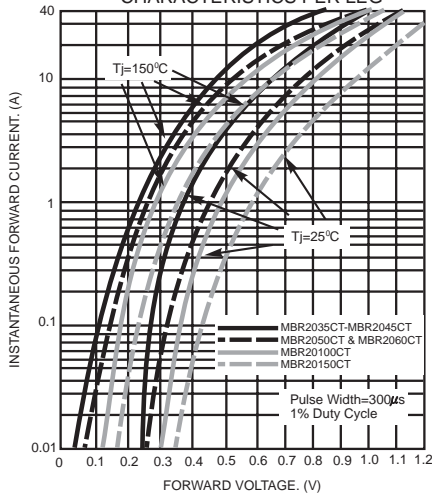


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

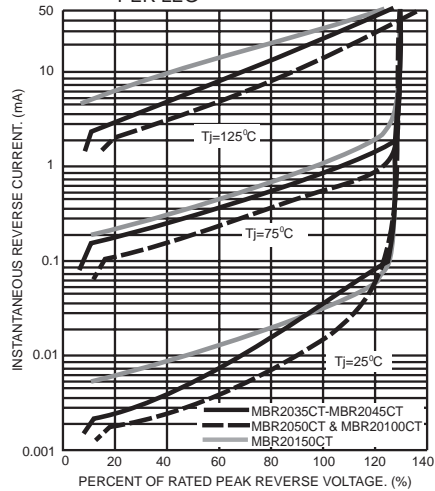


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

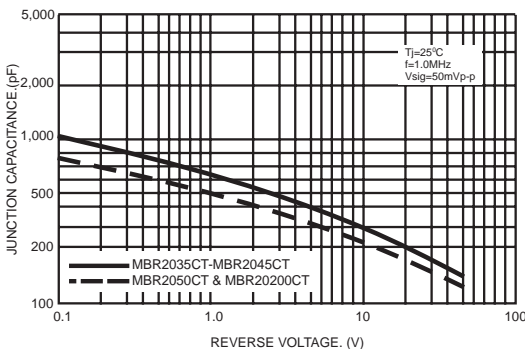


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

