

MBR2035CT - MBR20150CT

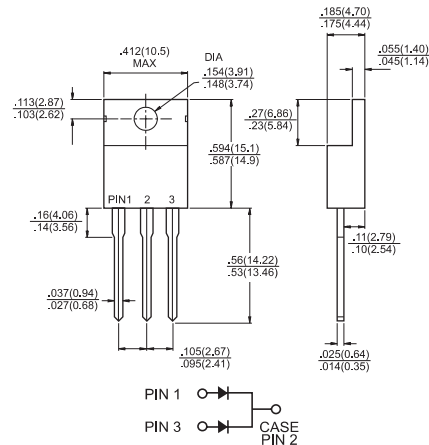
20.0 AMPS. Schottky Barrier Rectifiers

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
- ✧ 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

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°C	I _(AV)	20							A	
Peak Repetitive Forward Current (Rated V _R , Square Wave, 20KHz) at T _c =135°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 0.72		0.80 0.70 0.95 0.85		0.85 0.75 0.95 0.85		0.99 0.87 1.23 1.10	V	
Maximum Instantaneous Reverse Current @ T _c =25°C at Rated DC Blocking Voltage @ T _c =125°C	I _R	0.1 15		0.1 10		5.0			mA 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 _{θJC}	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. 2.0 μs Pulse Width, $f=1.0\text{ KHz}$
 2. Pulse Test: 300 μs 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

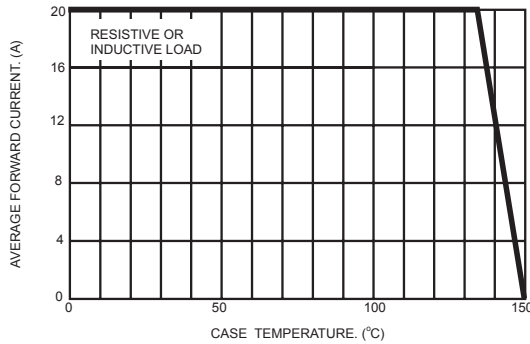


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

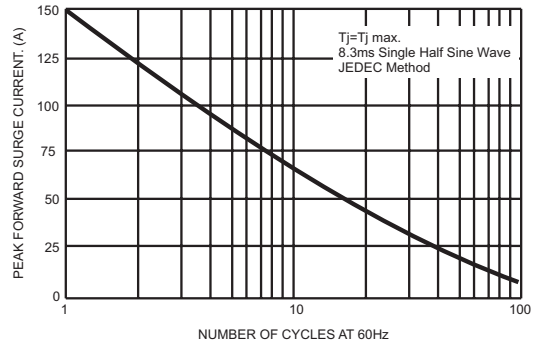


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

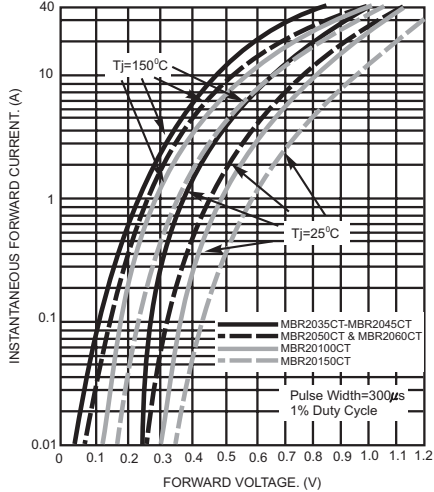


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

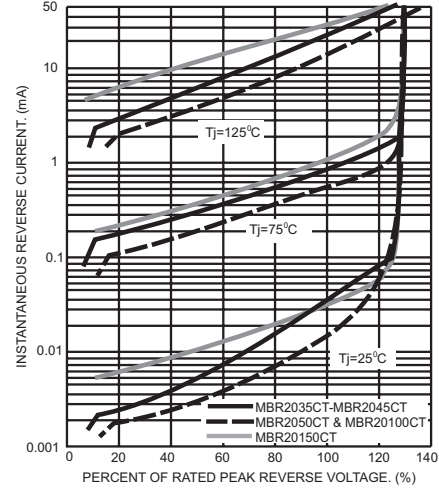


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

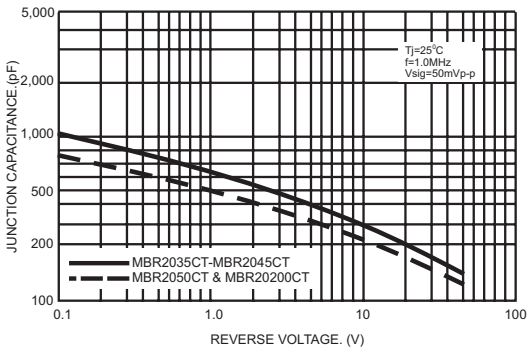


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

