

MBR3035CT THRU MBR30150CT

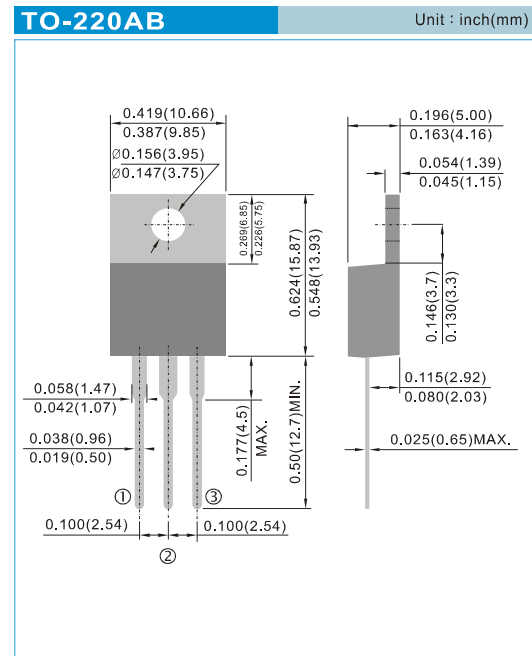
20 AMPERES SCHOTTKY BARRIER RECTIFIERS

Features

- ✧ Plastic material used carriers Underwriters Laboratory Classification 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
- ✧ Guard-ring 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

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: 1.90 grams



Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbol	MBR	MBR	MBR	MBR	MBR	MBR	MBR	Units	
		3035	3045	3050	3060	3090	30100	30150		
		CT	CT	CT	CT	CT	CT	CT		
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	$I_{F(AV)}$	30							A	
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20KHz)	I_{FRM}	30							A	
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	200							A	
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1.0			0.5				A	
Maximum Instantaneous Forward Voltage at (Note 2) IF=15A, $T_A=25^\circ C$ IF=15A, $T_A=125^\circ C$ IF=30A, $T_A=25^\circ C$ IF=30A, $T_A=125^\circ C$	V_F	0.7 0.6 0.82 0.73		0.77 0.67 - -		0.84 0.70 0.94 0.82		0.95 0.92 1.02 0.98	V	
Maximum Instantaneous Reverse Current @ $T_A=25^\circ C$ at Rated DC Blocking Voltage Per Leg @ $T_A=125^\circ C$	I_R	0.2 15		0.2 10		0.2 7.5		0.1 5	mA mA	
Voltage Rate of Change, (Rated V_R)	dV/dt	10,000							V/us	
Typical Junction Capacitance @4V 1.0MHz	C_j	600		460		320			pF	
Maximum Thermal Resistance Per Leg	$R_{\theta JC}$	1.0				1.5				$^\circ C/W$
Operating Junction Temperature Range	T_J	- 65 to + 150							$^\circ C$	
Storage Temperature Range	T_{STG}	- 65 to + 175							$^\circ C$	

Note 1: 2.0uS Pulse Width, f=1.0KHz

Note 2: Pulse Test : 300us Pulse Width, 1% Duty Cycle



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FIG. 1- FORWARD CURRENT DERATING CURVE

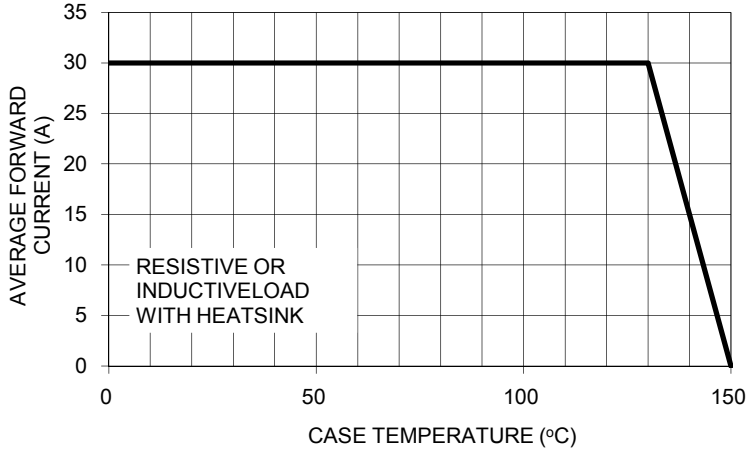


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

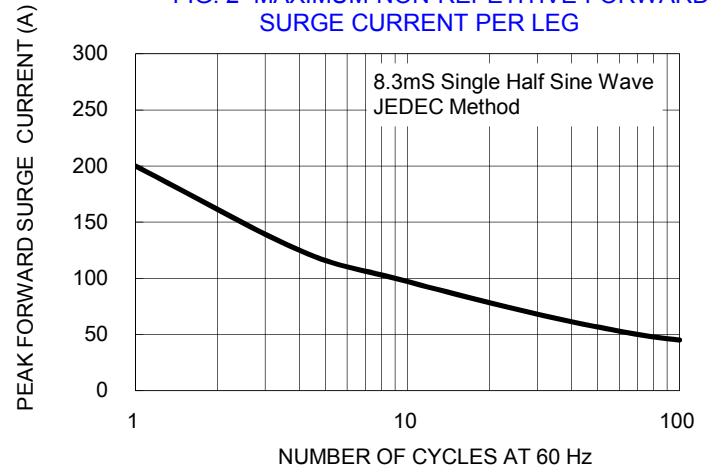


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

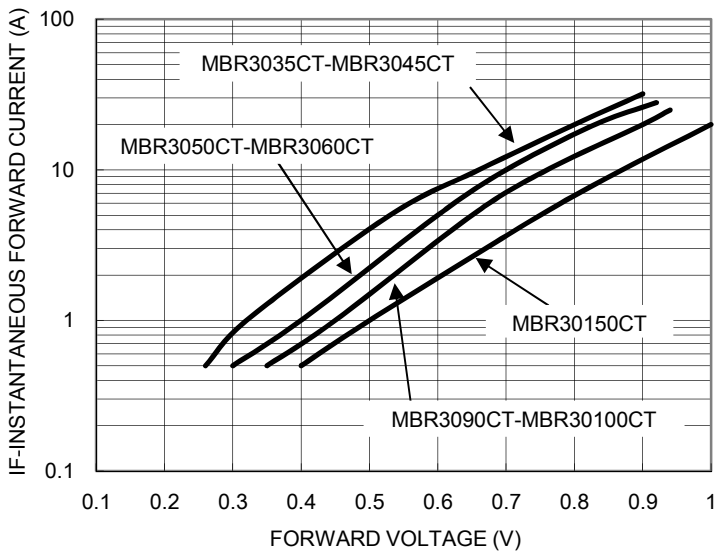


FIG. 4- TYPICAL REVERSE CHARACTERISTICS PER LEG

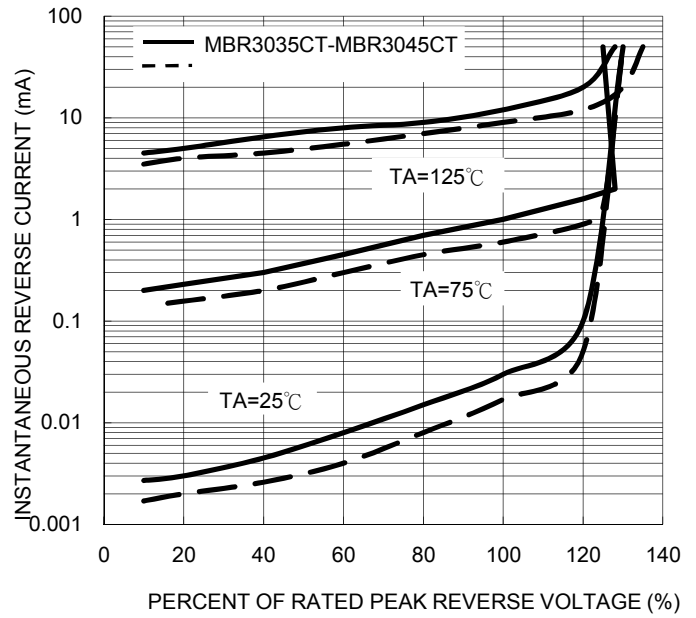


FIG. 5- TYPICAL JUNCTION CAPACITANCE PER LEG

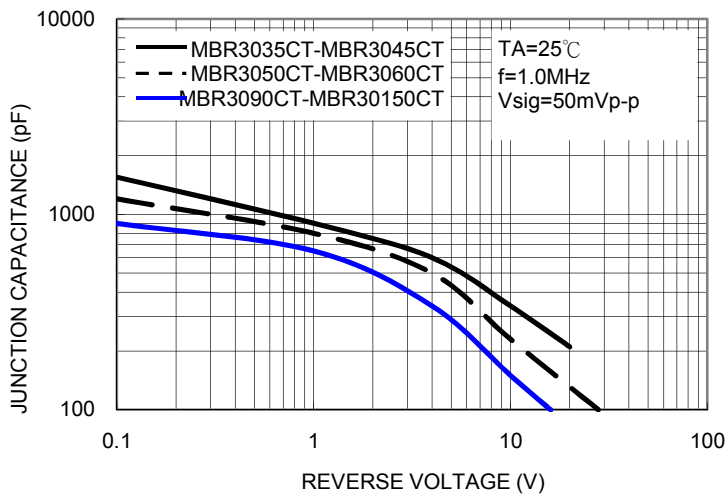


FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

