

MBR2035PT - MBR20150PT

20.0 AMPS. Schottky Barrier Rectifiers

TO-3P/TO-247AD

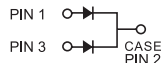
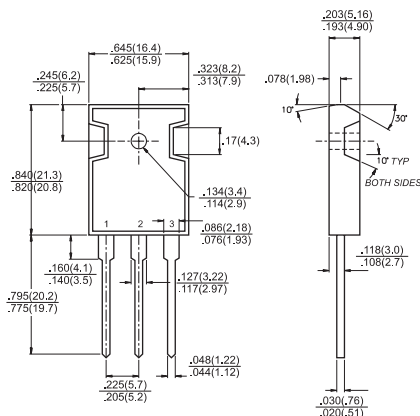


Features

- ◇ 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, 0.17"(4.3mm) from case

Mechanical Data

- ◇ Cases: JEDEC TO-3P/TO-247AD molded plastic body
- ◇ Terminals: Pure tin plated, lead free. solderable per MIL-STD-750, Method 2026
- ◇ Polarity: As marked
- ◇ Mounting position: Any
- ◇ Mounting torque: 10 in. - lbs. max
- ◇ Weight: 0.2 ounce, 5.6 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 PT	MBR 2045 PT	MBR 2050 PT	MBR 2060 PT	MBR 2090 PT	MBR 20100 PT	MBR 20150 PT	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 (SEE FIG. 1)	$I_{(AV)}$				20				A
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20KHz) at $T_c=105^\circ\text{C}$	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 2)	I_{RRM}	1.0			0.5				A
Maximum Instantaneous Forward Voltage at (Note 1) $I_F=10\text{A}, T_c=25^\circ\text{C}$ $I_F=10\text{A}, T_c=125^\circ\text{C}$ $I_F=20\text{A}, T_c=25^\circ\text{C}$ $I_F=20\text{A}, T_c=125^\circ\text{C}$	V_F	-		0.80		0.85	0.95		V
Maximum Instantaneous Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage Per Leg (Note 2) @ $T_c=125^\circ\text{C}$	I_R	0.1			0.1				mA
		15		10		5.0			mA
Voltage Rate of Change at (Rated V_R)	dV/dt				10,000				V/ μS
Maximum Thermal Resistance Per Leg (Note 3)	$R_{\theta JC}$				1.0				$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	T_J				-65 to +150				$^\circ\text{C}$
Storage Temperature Range	T_{STG}				-65 to +175				$^\circ\text{C}$

- Notes:
- 2.0us Pulse Width, $f=1.0\text{ KHz}$
 - Pulse Test: 300us Pulse Width, 1% Duty Cycle
 - Thermal Resistance from Junction to case Per Leg. With Heatsink Size (4" x 6" x 0.25") Al. Plate.

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RATINGS AND CHARACTERISTIC CURVES (MBR2035PT THRU MBR20150PT)

FIG.1- FORWARD CURRENT DERATING CURVE

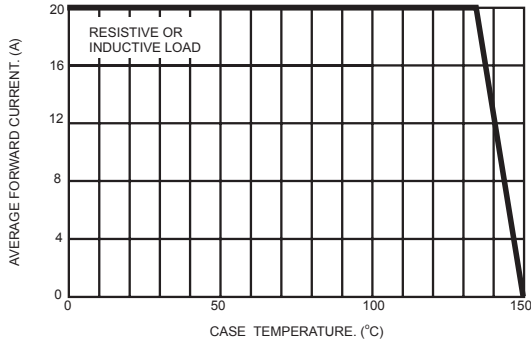


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

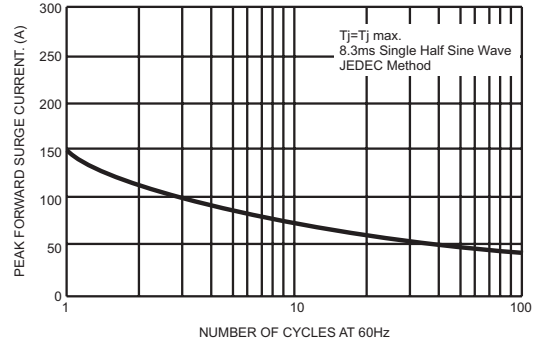


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

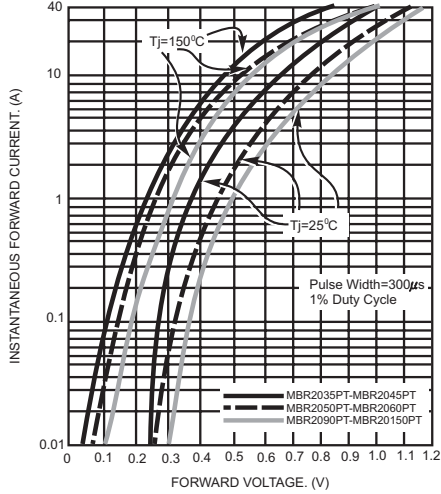


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

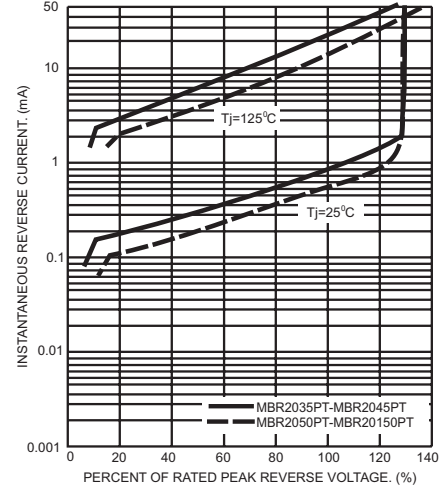


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

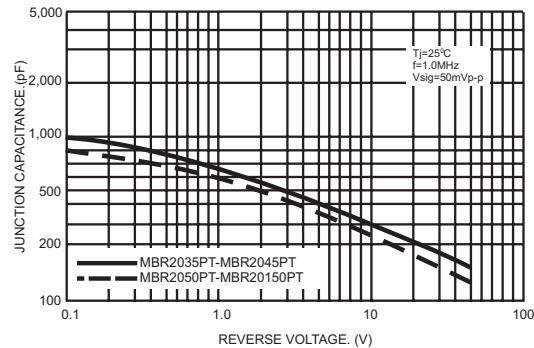


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

