

# MBR6035PT - MBR60150PT

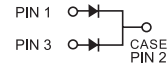
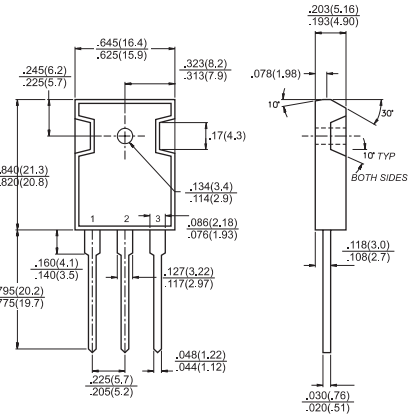
## 60 AMPS. Schottky Barrier Rectifiers

### TO-3P/TO-247AD



## Features

- ❖ Plastic material used carries Underwriters Laboratory Classifications 94V-0
- ❖ Metal silicon rectifier, 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
- ❖ Guarding 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 6035 PT	MBR 6045 PT	MBR 6050 PT	MBR 6060 PT	MBR 6090 PT	MBR 60100 PT	MBR 60150 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 at $T_c=125^\circ\text{C}$	$I_{(AV)}$	60							A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_c=120^\circ\text{C}$	$I_{FRM}$	60							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	420							A
Peak Repetitive Reverse Surge Current (Note 1)	$I_{RRM}$	1.0							A
Maximum Instantaneous Forward Voltage at (Note 2) $I_F=30\text{A}, T_c=25^\circ\text{C}$ $I_F=30\text{A}, T_c=125^\circ\text{C}$ $I_F=60\text{A}, T_c=25^\circ\text{C}$	$V_F$	0.70 0.60 0.82	0.75 0.65 0.93		0.84 — 0.98		0.92 1.02 0.98		V
Maximum Instantaneous Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage Per Leg @ $T_c=125^\circ\text{C}$ (Note 1)	$I_R$	1.0 30	1.0 20		10		0.1 5.0		mA mA
Voltage Rate of Change at (Rated $V_R$ )	$dV/dt$	1,000							V/ $\mu\text{S}$
Typical Thermal Resistance Per Leg (Note 3)	$R_{\theta JC}$	1.2							$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	-65 to +150							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to +175							$^\circ\text{C}$

- Notes:
- 2.0 $\mu\text{s}$  Pulse Width,  $f=1.0\text{ KHz}$
  - Pulse Test: 300 $\mu\text{s}$  Pulse Width, 1% Duty Cycle
  - Thermal Resistance from Junction to Case Per Leg

## RATINGS AND CHARACTERISTIC CURVES (MBR6035PT THRU MBR60150PT)

FIG.1- FORWARD CURRENT DERATING CURVE

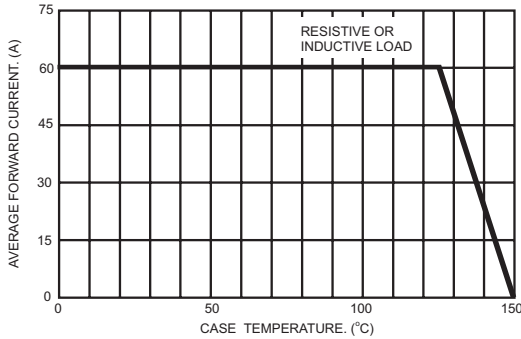


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

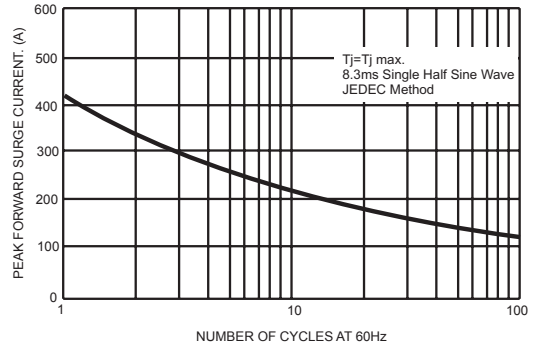


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

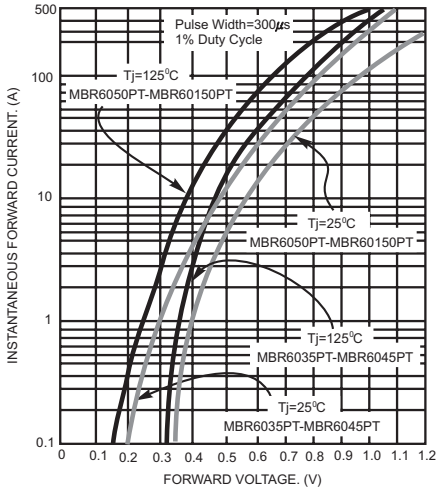


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

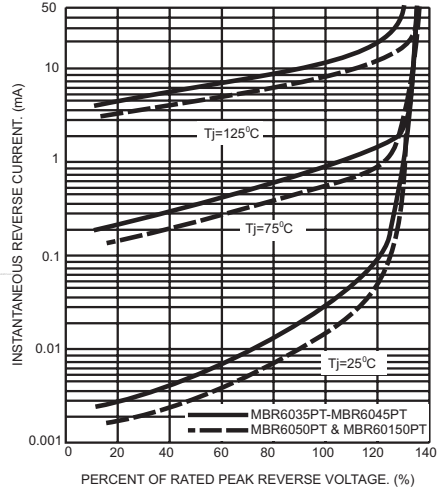


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

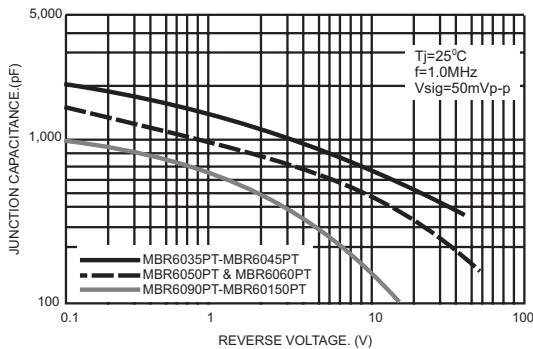


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

