



# MBR4035PT THRU MBR4060PT

## 40.0 AMPS. Schottky Barrier Rectifiers



Voltage Range  
35 to 60 Volts  
Current  
40.0 Amperes

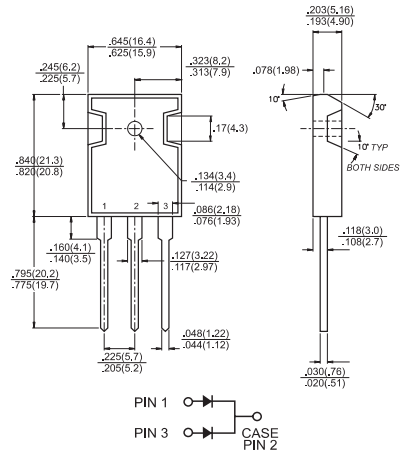
### Features

- ✦ 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
- ✦ 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: Leads 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

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



### 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 4035PT	MBR 4045PT	MBR 4050PT	MBR 4060PT	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	V
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	V
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	V
Maximum Average Forward Rectified Current at $T_C=125^\circ\text{C}$	$I_{(AV)}$	40				A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_C=120^\circ\text{C}$	$I_{FRM}$	40.0				A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	400				A
Peak Repetitive Reverse Surge Current (Note 1)	$I_{RRM}$	2.0		1.0		A
Maximum Instantaneous Forward Voltage at (Note 2) $I_F=20\text{A}, T_C=25^\circ\text{C}$ $I_F=20\text{A}, T_C=125^\circ\text{C}$ $I_F=40\text{A}, T_C=25^\circ\text{C}$ $I_F=40\text{A}, T_C=125^\circ\text{C}$	$V_F$	0.70 0.60 0.80 0.75			0.72 0.62 - -	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)	$I_R$			1.0 100.0		mA mA
Voltage Rate of Change at (Rated $V_R$ )	$dV/dt$	10,000		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: 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" x 6" x 0.25") Al-Plate.



## RATINGS AND CHARACTERISTIC CURVES (MBR4035PT THRU MBR4060PT)

FIG.1- FORWARD CURRENT DERATING CURVE

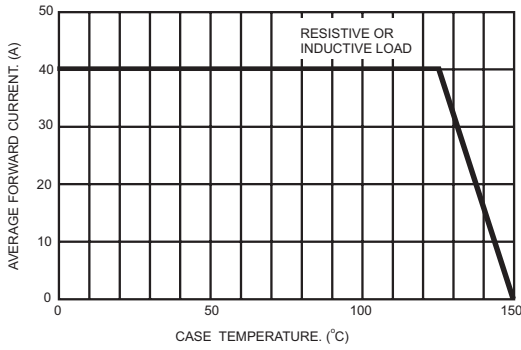


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

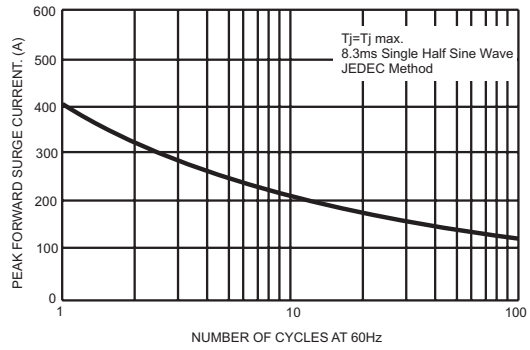


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

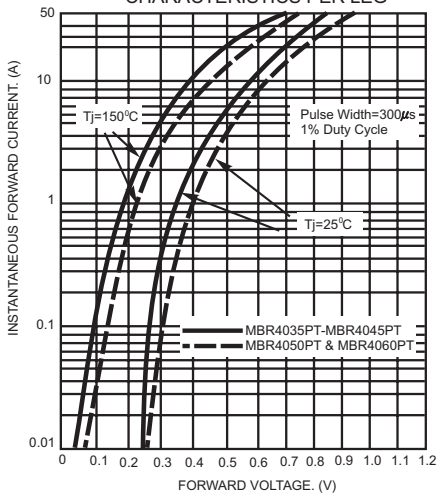


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

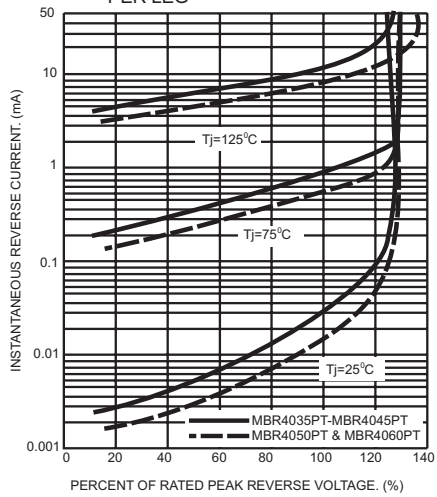


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

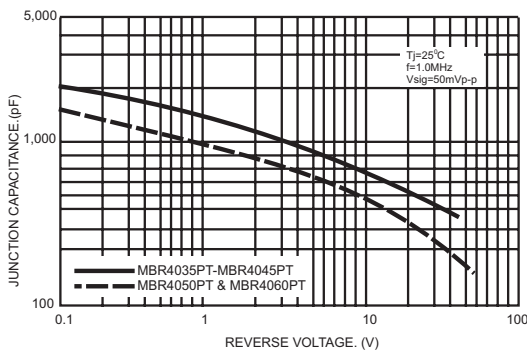
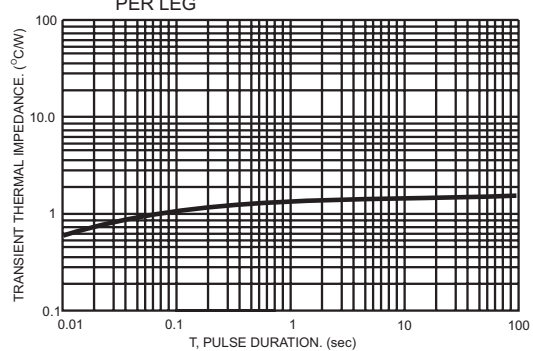


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



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