

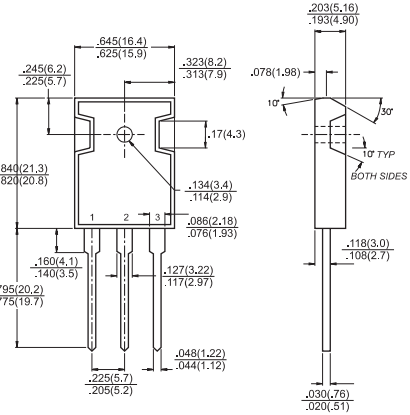


MBR4035 - MBR40150

40.0 AMPS. Schottky Barrier Rectifiers

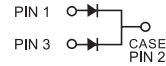
Features

- ✦ 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 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



TO-3P

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 4035	MBR 4045	MBR 4050	MBR 4060	MBR 4090	MBR 40100	MBR 40150	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 $T_c=125^\circ\text{C}$	$I_{(AV)}$	40							A
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20KHz) at $T_c=120^\circ\text{C}$	I_{FRM}	40							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	330							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	0.75 0.65 0.80 0.75		0.77 0.67 -		0.84 0.74 -	0.95 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			0.5			mA mA	
Voltage Rate of Change at (Rated V_R)	dV/dt	10,000		1,000				V/ μs	
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. 2.0 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

RATINGS AND CHARACTERISTIC CURVES

FIG.1- FORWARD CURRENT DERATING CURVE

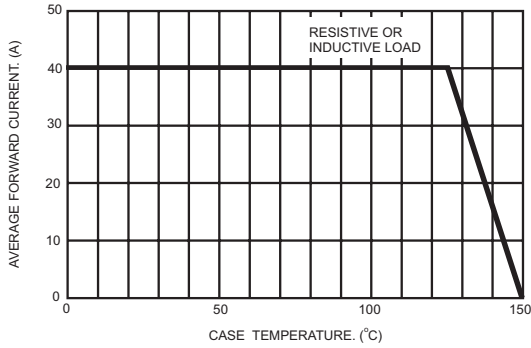


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

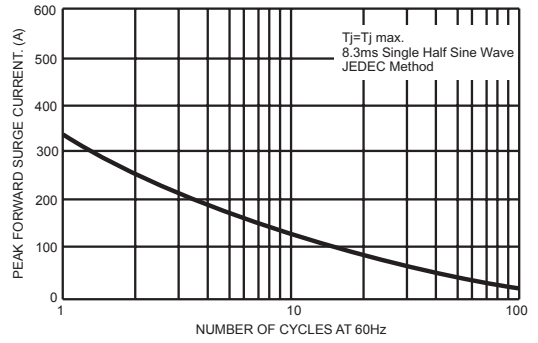


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

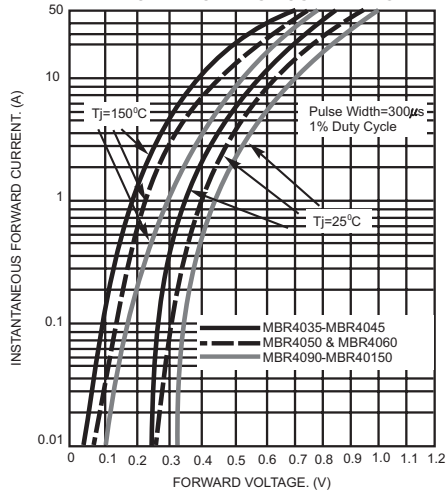


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

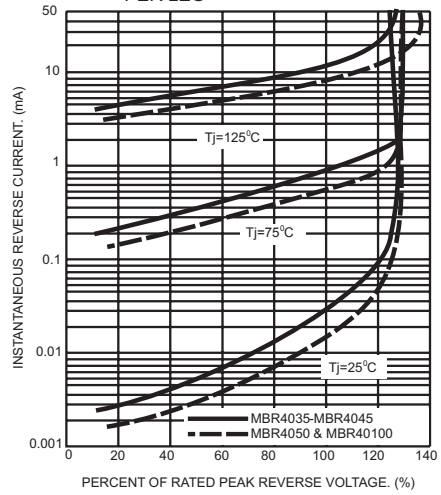


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

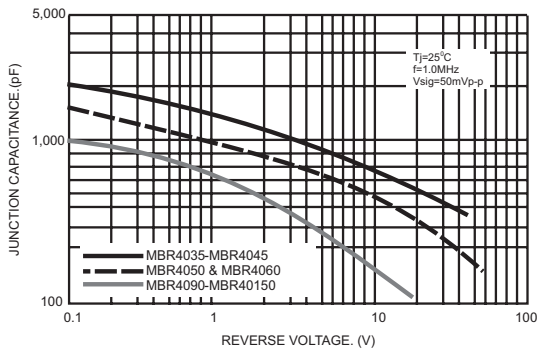


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

