



MBR4035PT THRU MBR40100PT

40.0 AMPS. Schottky Barrier Rectifiers



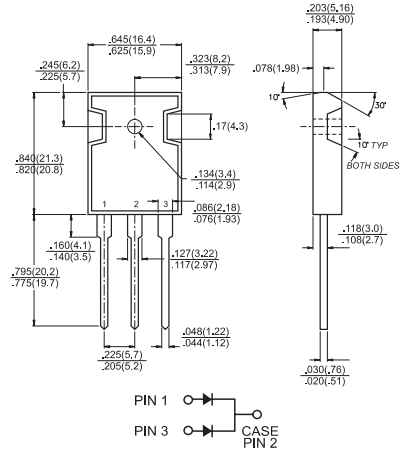
Voltage Range
35 to 100 Volts
Current
40.0 Amperes

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



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 PT | MBR 4045 PT | MBR 4050 PT | MBR 4060 PT | MBR 4090 PT | MBR 40100 PT | Units |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------------|-------------|-------------------|--------------|-------------------|--------------|---------------------------|
| Maximum Recurrent Peak Reverse Voltage | V_{RRM} | 35 | 45 | 50 | 60 | 90 | 100 | V |
| Maximum RMS Voltage | V_{RMS} | 24 | 31 | 35 | 42 | 63 | 70 | V |
| Maximum DC Blocking Voltage | V_{DC} | 35 | 45 | 50 | 60 | 90 | 100 | 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} | 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 - | | 0.84 0.74 - | | 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/ 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. 2.0us Pulse Width, $f=1.0$ KHz
2. Pulse Test: 300us Pulse Width, 1% Duty Cycle
3. Thermal Resistance from Junction to Case Per Leg

RATINGS AND CHARACTERISTIC CURVES (MBR4035PT THRU MBR40100PT)

FIG.1- FORWARD CURRENT DERATING CURVE

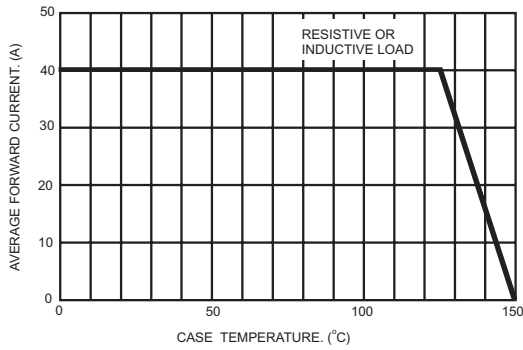


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

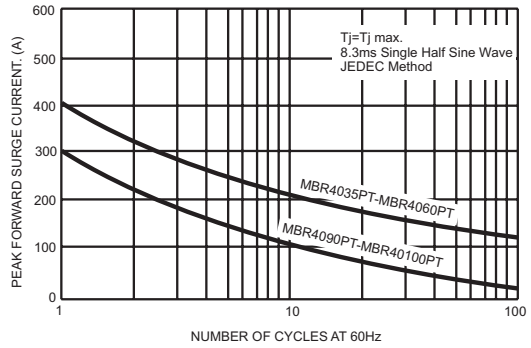


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

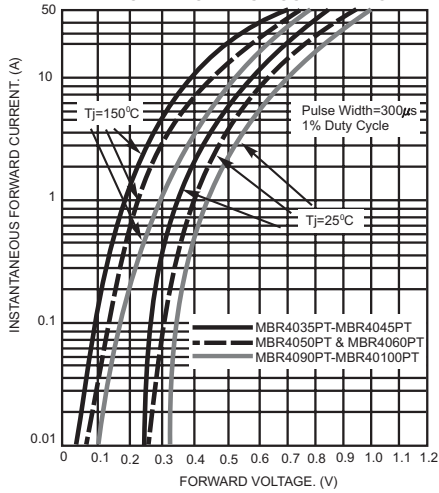


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

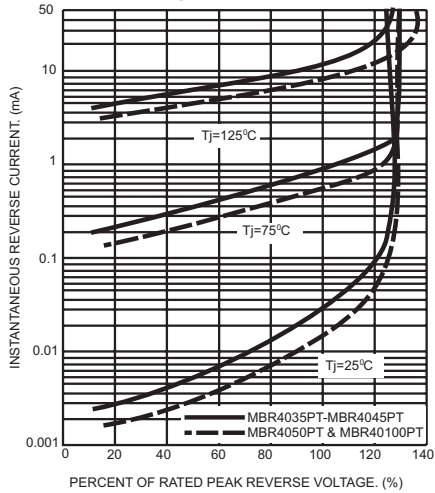


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

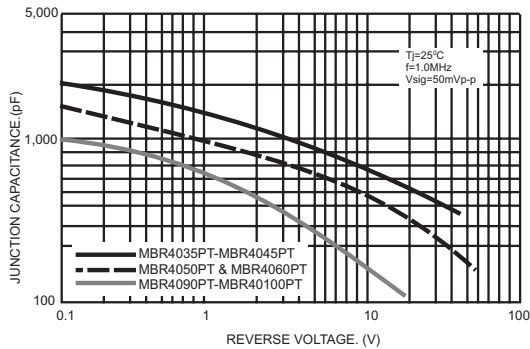


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

