

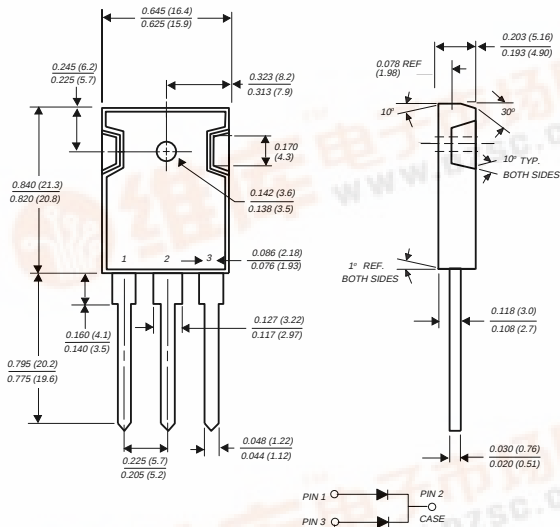
# MBR4035PT THRU MBR4060PT

## SCHOTTKY RECTIFIER

Reverse Voltage - 35 to 60 Volts

Forward Current - 40.0 Amperes

### TO-247AD



### FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classifications 94V-0
- ◆ Dual rectifier construction, positive center-tap
- ◆ 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: 250°C/10 seconds, 0.17" (4.3mm) from case



### MECHANICAL DATA

**Case:** JEDEC TO-247AD molded plastic body  
**Terminals:** Lead 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

Ratings at 25°C ambient temperature unless otherwise specified.

|                                                                                                                                                                                                                                                    | SYMBOLS           | MBR4035PT                    | MBR4045PT | MBR4050PT              | MBR4060PT | UNITS |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------|-----------|------------------------|-----------|-------|
| Maximum repetitive peak reverse voltage                                                                                                                                                                                                            | VRRM              | 35                           | 45        | 50                     | 60        | Volts |
| Maximum working peak reverse voltage                                                                                                                                                                                                               | V <sub>RMS</sub>  | 35                           | 45        | 50                     | 60        | Volts |
| Maximum DC blocking voltage                                                                                                                                                                                                                        | V <sub>DC</sub>   | 35                           | 45        | 50                     | 60        | Volts |
| Maximum average forward rectified current at T <sub>C</sub> =125°C                                                                                                                                                                                 | I <sub>(AV)</sub> | 40.0                         |           |                        |           | Amps  |
| Peak repetitive forward current per leg at T <sub>C</sub> =120°C (rated V <sub>R</sub> square wave, 20 KHz)                                                                                                                                        | I <sub>FRM</sub>  | 40.0                         |           |                        |           | Amps  |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)                                                                                                                                                  | I <sub>FSM</sub>  | 400.0                        |           |                        |           | Amps  |
| Peak repetitive reverse surge current (NOTE1)                                                                                                                                                                                                      | I <sub>RRM</sub>  | 2.0                          |           | 1.0                    |           | Amps  |
| Maximum instantaneous forward voltage per leg at<br>I <sub>F</sub> =20A, T <sub>C</sub> =25°C<br>(NOTE 2)<br>I <sub>F</sub> =20A, T <sub>C</sub> =125°C<br>I <sub>F</sub> =40A, T <sub>C</sub> =25°C<br>I <sub>F</sub> =40A, T <sub>C</sub> =125°C | V <sub>F</sub>    | 0.70<br>0.60<br>0.80<br>0.75 |           | 0.72<br>0.62<br>—<br>— |           | Volts |
| Maximum instantaneous reverse current at T <sub>C</sub> =25°C rated DC blocking voltage per leg (NOTE 2) T <sub>C</sub> =125°C                                                                                                                     | I <sub>R</sub>    | 1.0<br>100.0                 |           |                        |           | mA    |
| Typical thermal resistance per leg (NOTE 3)                                                                                                                                                                                                        | R <sub>θJC</sub>  | 1.2                          |           |                        |           | °C/W  |
| Voltage rate of change (rated V <sub>R</sub> )                                                                                                                                                                                                     | dv/dt             | 10,000                       |           |                        |           | V/μs  |
| Operating junction temperature range                                                                                                                                                                                                               | T <sub>J</sub>    | -65 to +150                  |           |                        |           | °C    |
| Storage temperature range                                                                                                                                                                                                                          | T <sub>STG</sub>  | -65 to +175                  |           |                        |           | °C    |

#### NOTES:

- (1) 2.0μs pulse width, f=1.0 KHz
- (2) Pulse test: 300μs pulse width, 1% duty cycle
- (3) Thermal resistance from junction to case per leg



# RATINGS AND CHARACTERISTIC CURVES MBR4035PT THRU MBR4060PT

FIG. 1 - FORWARD CURRENT DERATING CURVE

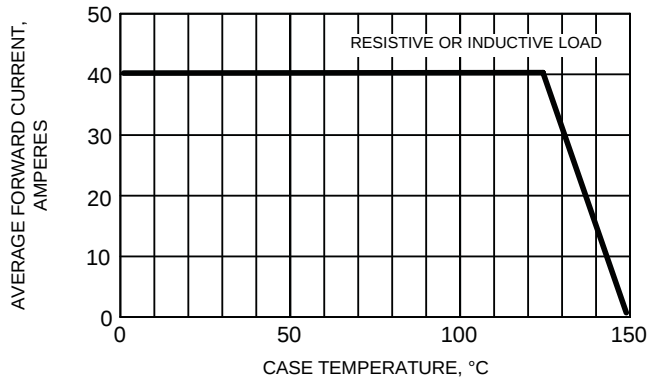


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

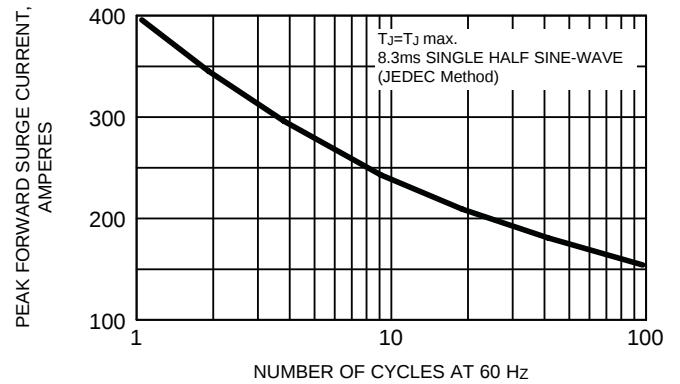


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS PER LEG

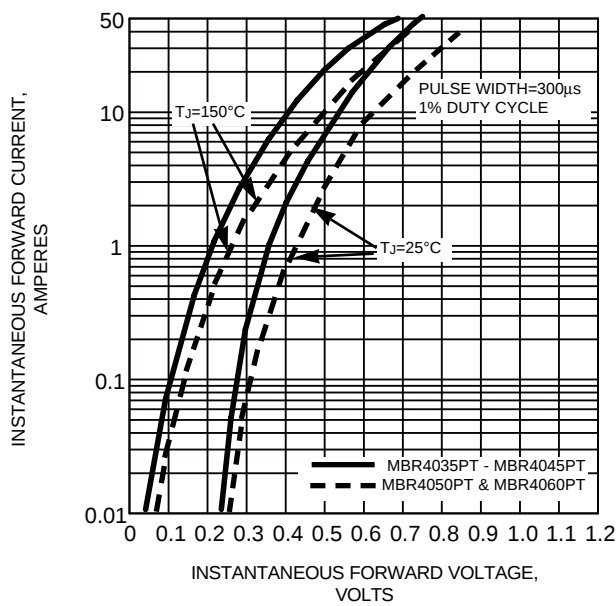


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS PER LEG

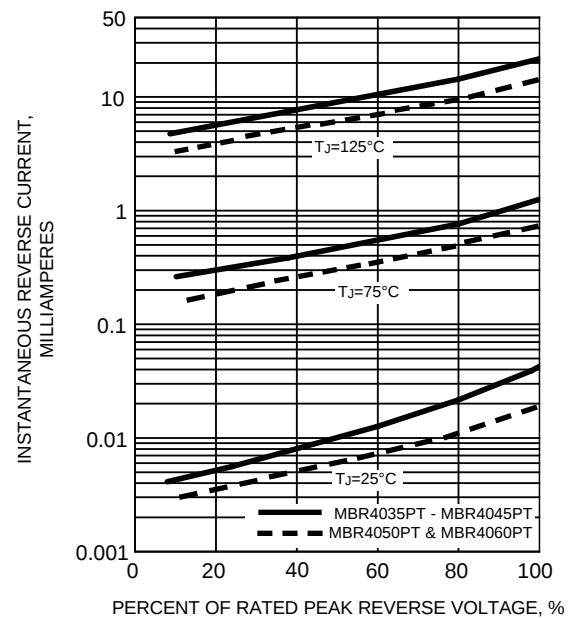


FIG. 5 - TYPICAL JUNCTION CAPACITANCE PER LEG

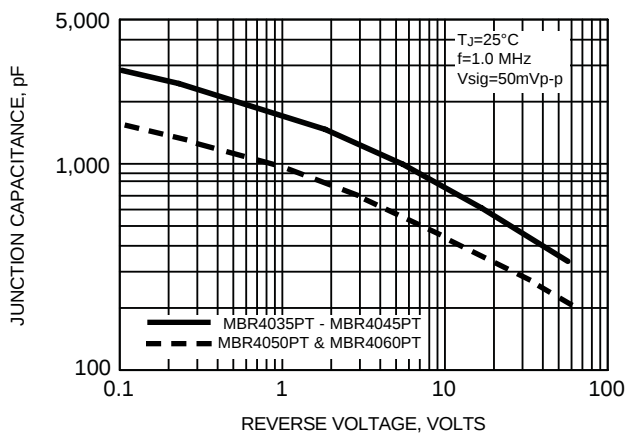


FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

