

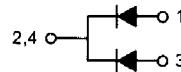
Advance Information SWITCHMODE™ Power Rectifier

The SWITCHMODE power rectifier employs the use of the Schottky Barrier principle with a Platinum barrier metal. This state-of-the-art device has the following features:

- Dual Diode Construction — Terminals 1 and 3 May Be Connected for Parallel Operation at Full Rating
- 45 Volt Blocking Voltage
- Low Forward Voltage Drop
- Guardring for Stress Protection and High dv/dt Capability (> 10 V/ns)
- Guaranteed Reverse Avalanche
- 150°C Operating Junction Temperature

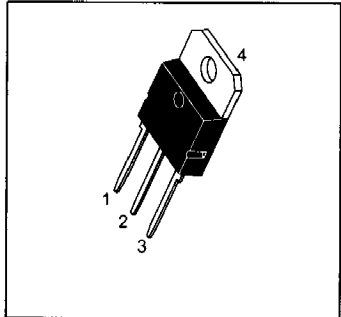
Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 4.3 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 30 Units Per Plastic Tube
- Marking: B6045



MBR6045PT

**SCHOTTKY BARRIER
RECTIFIER
60 AMPERES
45 VOLTS**



MAXIMUM RATINGS

| Rating | Symbol | Max | Unit |
|--|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 45 | Volt |
| Average Rectified Forward Current — Per Diode (Rated V_R) @ $T_C = 125^\circ\text{C}$ — Per Device | $I_{F(AV)}$ | 30 60 | Amp |
| Peak Repetitive Forward Current, Per Diode (Rated V_R , Square Wave, 20 kHz) @ $T_C = 90^\circ\text{C}$ | I_{FRM} | 60 | Amp |
| Non Repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz) | I_{FSM} | 500 | Amp |
| Peak Repetitive Reverse Current (2.0 μs , 1.0 kHz) | I_{RRM} | 2.0 | Amp |
| Operating Junction Temperature | T_J | -65 to +150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -65 to +175 | $^\circ\text{C}$ |
| Peak Surge Junction Temperature (Forward Current Applied) | $T_{J(pk)}$ | 175 | $^\circ\text{C}$ |
| Voltage Rate of Change | dv/dt | 10,000 | V/ μs |

THERMAL CHARACTERISTICS

| | | | |
|---------------------------------------|-----------------|-----|--------------------|
| Thermal Resistance — Junction to Case | $R_{\theta JC}$ | 1.0 | $^\circ\text{C/W}$ |
|---------------------------------------|-----------------|-----|--------------------|



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ELECTRICAL CHARACTERISTICS

| Rating | Symbol | Max | Unit |
|---|--------|----------------------|-------|
| Instantaneous Forward Voltage (1) @ $I_F = 30$ Amps, $T_C = 25^\circ\text{C}$ @ $I_F = 30$ Amps, $T_C = 125^\circ\text{C}$ @ $I_F = 60$ Amps, $T_C = 25^\circ\text{C}$ | V_F | 0.62 0.55 0.75 | Volts |
| Instantaneous Reverse Current (1) @ Rated DC Voltage, $T_C = 25^\circ\text{C}$ @ Rated DC Voltage, $T_C = 100^\circ\text{C}$ | I_R | 1.0 50 | mA |

(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$

TYPICAL ELECTRICAL CHARACTERISTICS

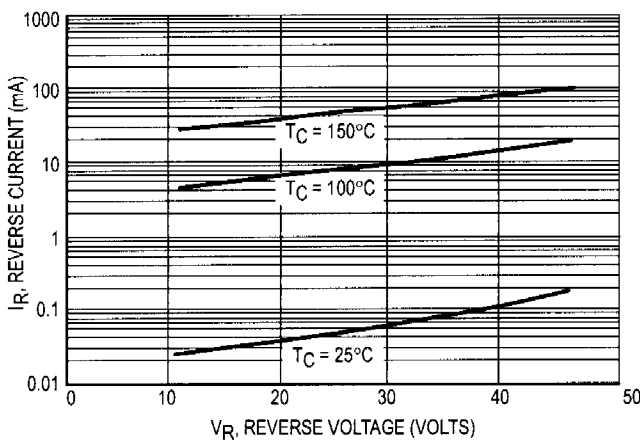


Figure 1. Typical Reverse Current

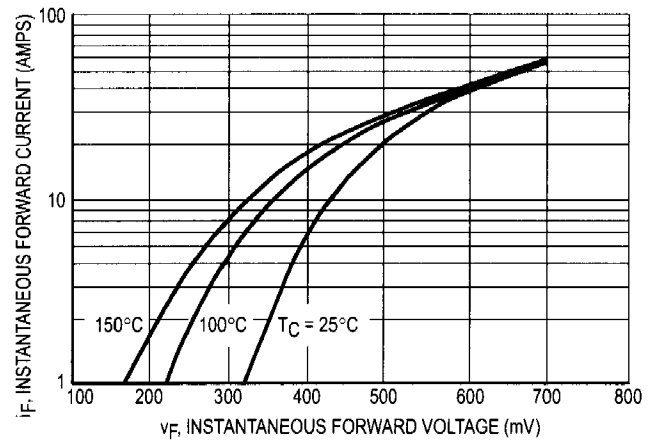
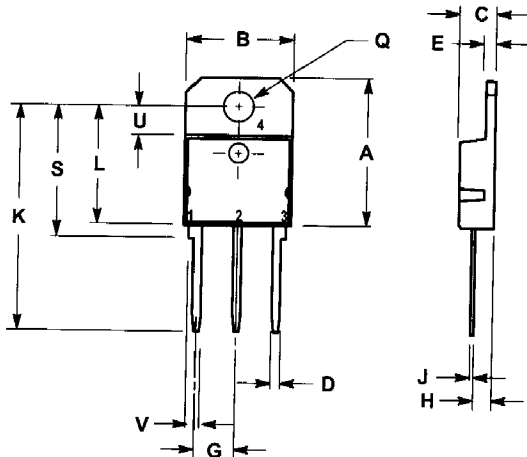


Figure 2. Typical Forward Voltage



NOTES:

- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: MILLIMETER.

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|-------|-----------|-------|
| | MIN | MAX | MIN | MAX |
| A | — | 20.35 | — | 0.801 |
| B | 14.70 | 15.20 | 0.579 | 0.598 |
| C | 4.70 | 4.90 | 0.185 | 0.193 |
| D | 1.10 | 1.30 | 0.043 | 0.051 |
| E | 1.17 | 1.37 | 0.046 | 0.054 |
| G | 5.40 | 5.55 | 0.213 | 0.219 |
| H | 2.00 | 3.00 | 0.079 | 0.118 |
| J | 0.50 | 0.78 | 0.020 | 0.031 |
| K | 31.00 REF | — | 1.220 REF | — |
| L | — | 16.20 | — | 0.638 |
| Q | 4.00 | 4.10 | 0.158 | 0.161 |
| S | 17.80 | 18.20 | 0.701 | 0.717 |
| U | 4.00 REF | — | 0.157 REF | — |
| V | 1.75 REF | — | 0.069 | — |

STYLE 2:

- PIN 1. ANODE 1
- CATHODE(S)
- ANODE 2
- CATHODE(S)