

Switchmode Full Plastic Dual Schottky Barrier Power Rectifiers

Using the Schottky Barrier principle with a Molybdenum barrier metal. These state-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes.

Features

- * Low Forward Voltage.
- * Low Switching noise.
- * High Current Capacity
- * Guarantee Reverse Avalanche.
- * Guard-Ring for Stress Protection.
- * Low Power Loss & High efficiency.
- * 175°C Operating Junction Temperature
- * Low Stored Charge Majority Carrier Conduction.
- * Plastic Material used Carries Underwriters Laboratory

Mechanical Data

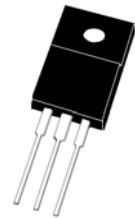
- * Case : JEDEC ITO-220AB molded plastic body
- * Terminals: Plated lead, solderable per MIL-STD-750, Method 2026
- * Polarity: As marked
- * Mounting Torque: 5 in-lbs. max
- * Weight: 1.7 g approx.
- * High temperature soldering guaranteed 260°C/10 seconds

* In compliance with EU RoHs 2002/95/EC directives

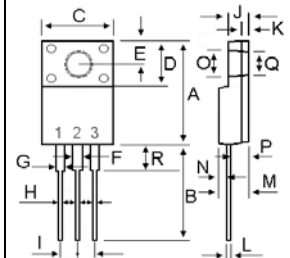


SCHOTTKY BARRIER RECTIFIERS

**10 AMPERES
30-60 VOLTS**



ITO-220AB



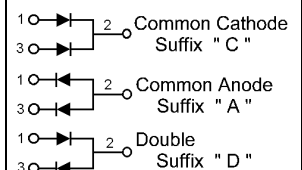
MAXIMUM RATINGS

| Characteristic | Symbol | MBRF10 | | | | | | Unit |
|--|---------------------------------|-------------|-----|-----|-----|-----|-----|------|
| | | 30C | 35C | 40C | 45C | 50C | 60C | |
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 30 | 35 | 40 | 45 | 50 | 60 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 21 | 25 | 28 | 32 | 35 | 42 | V |
| Average Rectifier Forward Current Total Device (Rated V_R), $T_C=100^\circ\text{C}$ | $I_{F(AV)}$ | 5.0 10 | | | | | | A |
| Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz) | I_{FM} | 10 | | | | | | A |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz) | I_{FSM} | 100 | | | | | | A |
| Operating and Storage Junction Temperature Range | T_J, T_{STG} | -65 to +175 | | | | | | °C |

| DIM | MILLIMETERS | |
|-----|-------------|-------|
| | MIN | MAX |
| A | 14.90 | 15.15 |
| B | 13.35 | 13.55 |
| C | 10.00 | 10.10 |
| D | 6.55 | 6.65 |
| E | 2.65 | 2.75 |
| F | 1.55 | 1.65 |
| G | 1.15 | 1.25 |
| H | 0.55 | 0.65 |
| I | 2.50 | 2.60 |
| J | 3.00 | 3.20 |
| K | 1.10 | 1.20 |
| L | 0.55 | 0.65 |
| M | 4.40 | 4.60 |
| N | 1.15 | 1.25 |
| O | 3.35 | 3.45 |
| P | 2.65 | 2.75 |
| Q | 3.15 | 3.25 |

ELECTRIAL CHARACTERISTICS

| Characteristic | Symbol | MBRF10 | | | | | | Unit |
|--|-----------------|--------------|-----|-----|-----|-----|-----|------|
| | | 30C | 35C | 40C | 45C | 50C | 60C | |
| Maximum Instantaneous Forward Voltage ($I_F=5$ Amp $T_C=25^\circ\text{C}$) ($I_F=5$ Amp $T_C=125^\circ\text{C}$) | V_F | 0.65 0.56 | | | | | | V |
| Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25^\circ\text{C}$) (Rated DC Voltage, $T_C=125^\circ\text{C}$) | I_R | 0.01 20 | | | | | | mA |
| Typical Thermal Resistance junction to case | $R_{\theta jc}$ | 2.8 | | | | | | °C/w |



MBRF1030C Thru MBRF1060C

FIG-1 FORWARD CURRENT DERATING CURVE

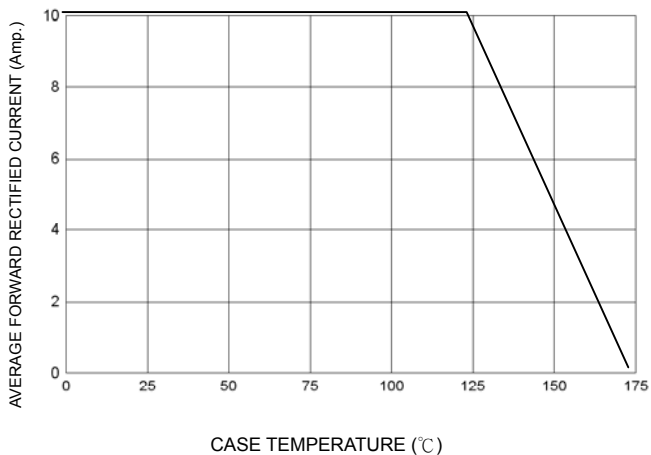


FIG-2 TYPICAL FORWARD CHARACTERISTICS

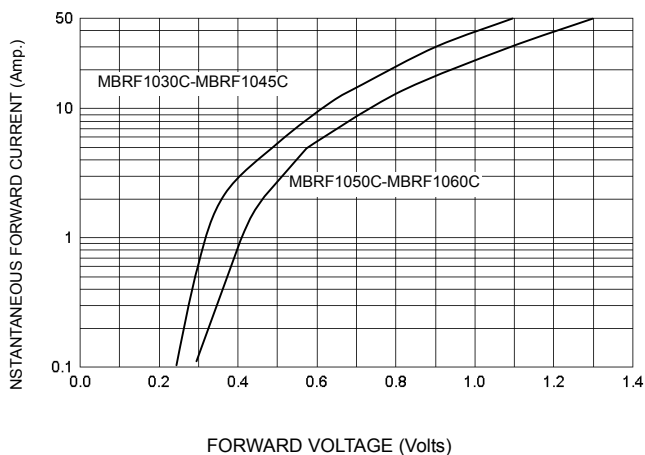


FIG-3 TYPICAL REVERSE CHARACTERISTICS

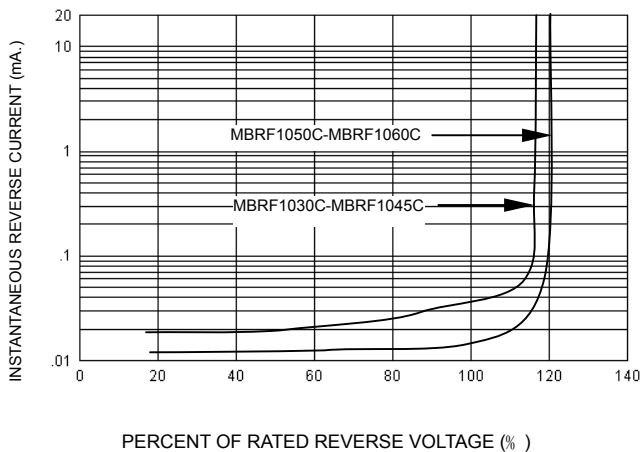


FIG-4 TYPICAL JUNCTION CAPACITANCE

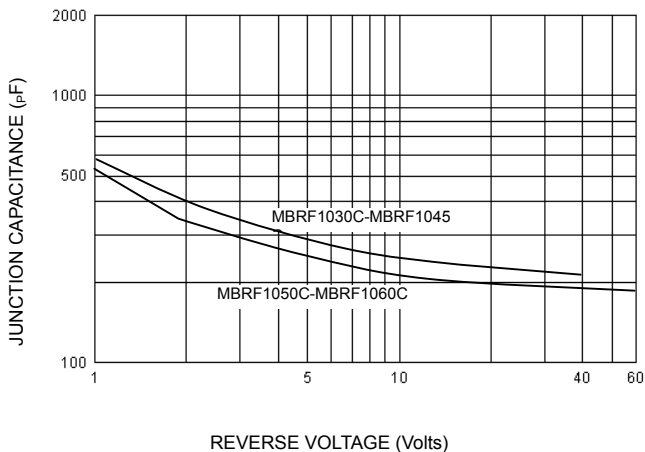


FIG-5 PEAK FORWARD SURGE CURRENT

