

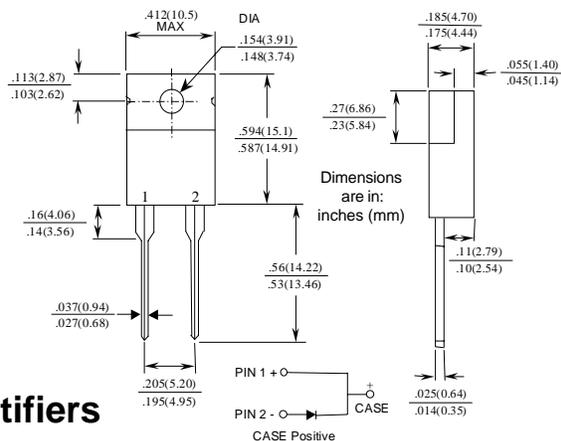
MBR1035 - MBR1060

Features

- Low power loss, high efficiency.
- High surge capacity.
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.
- Metal silicon junction, majority carrier conduction.
- High current capacity, low forward voltage drop.
- Guard ring for over voltage protection.



TO-220AC



10 Ampere Schottky Barrier Rectifiers

Absolute Maximum Ratings*

$T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|----------------------------|---|-------------|---------------------------|
| I_o | Average Rectified Current | 10 | A |
| $I_{f(\text{repetitive})}$ | Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 KHz) @ $T_A = 135^\circ\text{C}$ | 20 | A |
| $I_{f(\text{surge})}$ | Peak Forward Surge Current 8.3 ms single half-sine-wave Superimposed on rated load (JEDEC method) | 150 | A |
| P_D | Total Device Dissipation Derate above 25°C | 2.0 16.6 | W mW/ $^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 60 | $^\circ\text{C}/\text{W}$ |
| $R_{\theta JL}$ | Thermal Resistance, Junction to Lead | 2.0 | $^\circ\text{C}/\text{W}$ |
| T_{stg} | Storage Temperature Range | -65 to +175 | $^\circ\text{C}$ |
| T_J | Operating Junction Temperature | -65 to +150 | $^\circ\text{C}$ |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

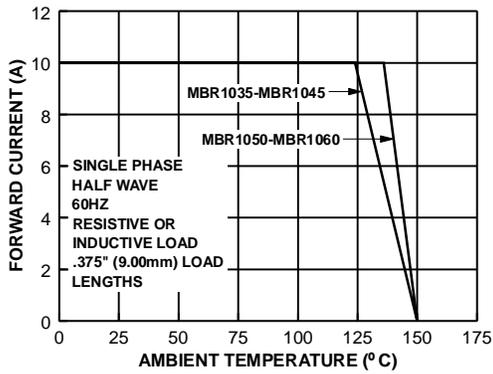
Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

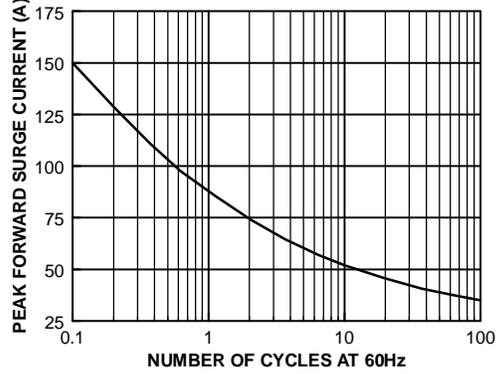
| Parameter | Device | | | | Units |
|---|---------------------------|------|------------------------------|------|------------------|
| | 1035 | 1045 | 1050 | 1060 | |
| Peak Repetitive Reverse Voltage | 35 | 45 | 50 | 60 | V |
| Maximum RMS Voltage | 24 | 31 | 35 | 42 | V |
| DC Reverse Voltage (Rated V_R) | 35 | 45 | 50 | 60 | V |
| Voltage Rate of Change (Rated V_R) | 10,000 | | | | V/ μS |
| Maximum Reverse Current @ rated V_R $T_A = 25^\circ\text{C}$ $T_A = 125^\circ\text{C}$ | 0.1 15 | | | | mA mA |
| Maximum Forward Voltage $I_F = 10\text{ A}, T_C = 25^\circ\text{C}$ $I_F = 10\text{ A}, T_C = 125^\circ\text{C}$ $I_F = 20\text{ A}, T_C = 25^\circ\text{C}$ $I_F = 20\text{ A}, T_C = 125^\circ\text{C}$ | - 0.57 0.84 0.72 | | 0.80 0.70 0.95 0.85 | | V V V V |
| Peak Repetitive Reverse Surge Current 2.0 μs Pulse Width, $f = 1.0\text{ KHz}$ | 1.0 | | 0.5 | | A |

Typical Characteristics

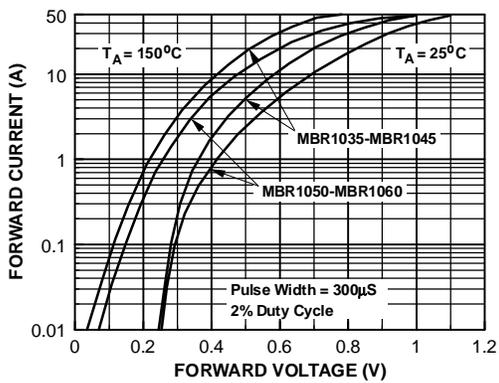
Forward Current Derating Curve



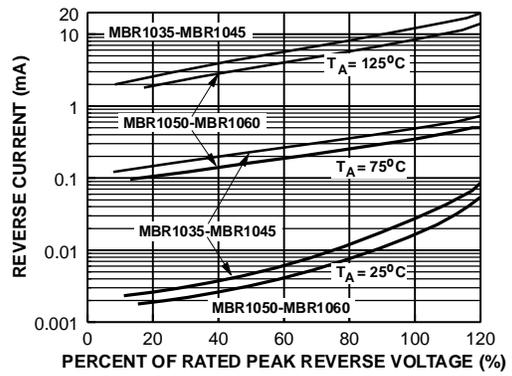
Non-Repetitive Surge Current



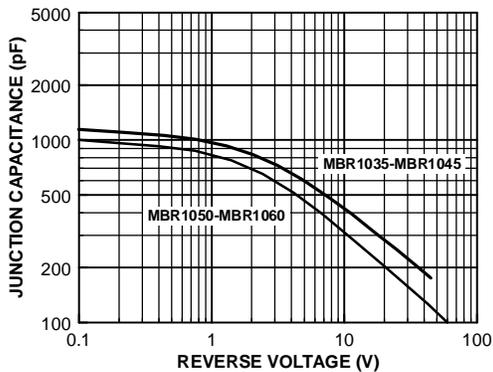
Forward Characteristics



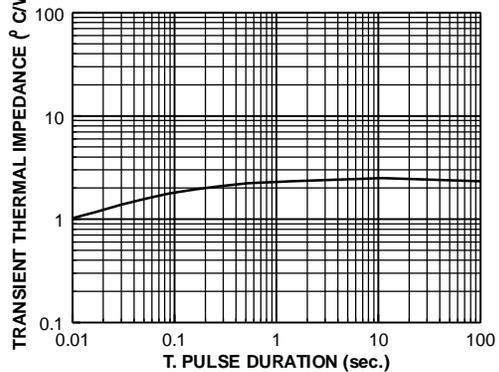
Reverse Characteristics



Typical Junction Capacitance



Transient Thermal Impedance



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| FACT™ | QS™ |
| FACT Quiet Series™ | Quiet Series™ |
| FAST® | SuperSOT™-3 |
| FASTr™ | SuperSOT™-6 |
| GTO™ | SuperSOT™-8 |
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PRODUCT STATUS DEFINITIONS

Definition of Terms

| Datasheet Identification | Product Status | Definition |
|--------------------------|------------------------|---|
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