

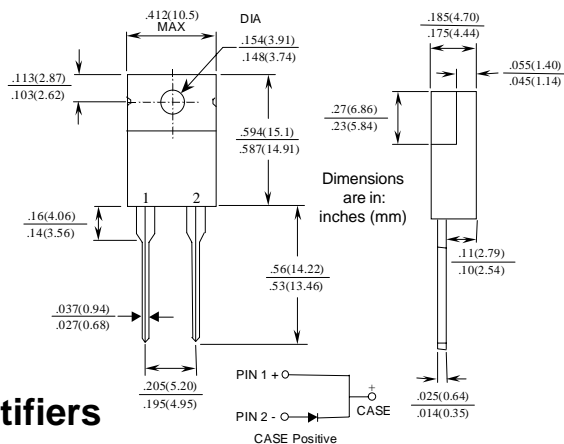
## MBR1035 - MBR1060

### 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<br>(Rated $V_R$ , Square Wave, 20 KHz) @ $T_A = 135^\circ\text{C}$      | 20          | A                         |
| $I_{f(\text{surge})}$      | Peak Forward Surge Current<br>8.3 ms single half-sine-wave<br>Superimposed on rated load (JEDEC method) | 150         | A                         |
| $P_D$                      | Total Device Dissipation<br>Derate above $25^\circ\text{C}$   | 2.0<br>16.6 | W<br>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         | $^\circ\text{C}/\text{W}$ |
| $T_{\text{stg}}$           | 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.

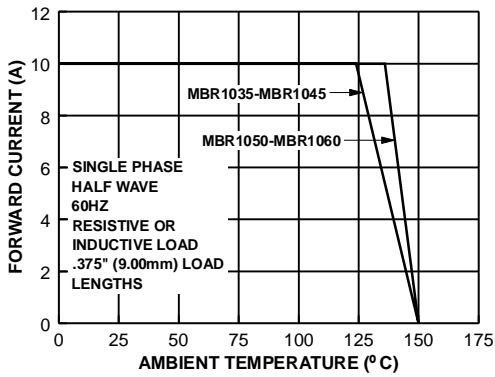
### Electrical Characteristics

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

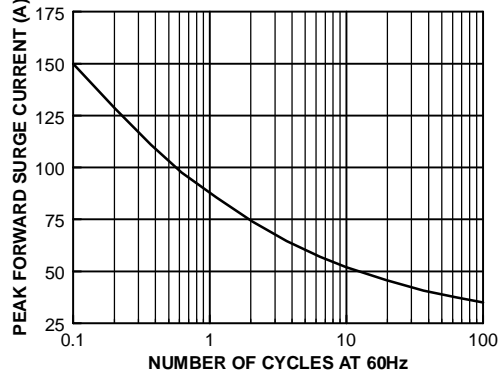
| Parameter   | Device                    |                              |      |      | Units            |
|---|---------------------------|------------------------------|------|------|------------------|
|   | 1035                      | 1045                         | 1050 | 1060 |                  |
| 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/ $\mu\text{s}$ |
| Maximum Reverse Current<br>@ rated $V_R$<br>$T_A = 25^\circ\text{C}$<br>$T_A = 125^\circ\text{C}$   | 0.1<br>15                 |                              |      |      | mA<br>mA         |
| Maximum Forward Voltage<br>$I_F = 10\text{ A}, T_C = 25^\circ\text{C}$<br>$I_F = 10\text{ A}, T_C = 125^\circ\text{C}$<br>$I_F = 20\text{ A}, T_C = 25^\circ\text{C}$<br>$I_F = 20\text{ A}, T_C = 125^\circ\text{C}$ | -<br>0.57<br>0.84<br>0.72 | 0.80<br>0.70<br>0.95<br>0.85 |      |      | V<br>V<br>V<br>V |
| Peak Repetitive Reverse Surge Current<br>2.0 $\mu\text{s}$ Pulse Width, $f = 1.0\text{ KHz}$  | 1.0                       |                              | 0.5  |      | A                |

Typical Characteristics

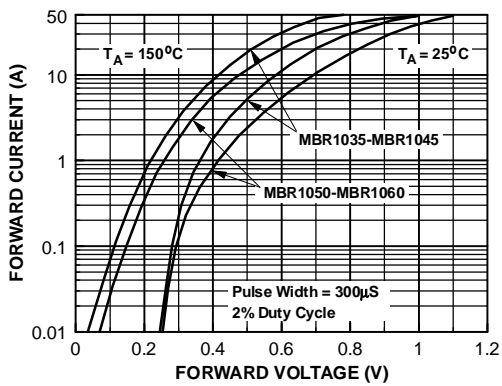
Forward Current Derating Curve



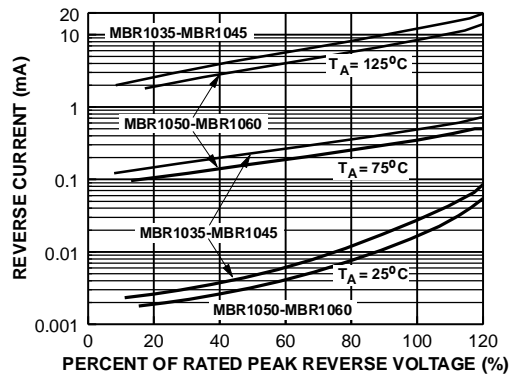
Non-Repetitive Surge Current



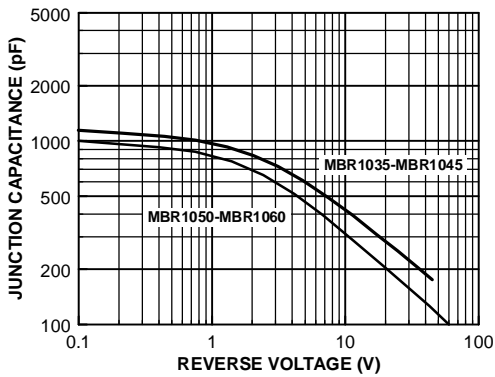
Forward Characteristics



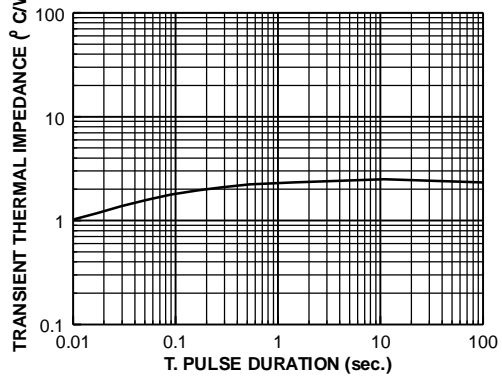
Reverse Characteristics



Typical Junction Capacitance



Transient Thermal Impedance



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| FACT Quiet Series™   | Quiet Series™ |
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