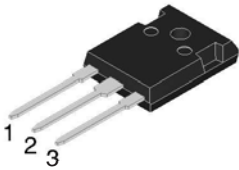
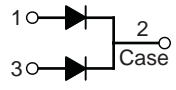


## 20.0 Amp. Schottky Barrier Rectifier

|  |   |         |         |               |      |
|--|---|---------|---------|---------------|------|
| <p style="text-align: center; font-weight: bold; font-size: 1.2em;">TO-3P</p> <div style="text-align: center;">  </div> <div style="text-align: center; margin-top: 20px;">  <p>Common Cathode<br/>Suffix "C"</p> </div> | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; font-weight: bold; font-size: 1.1em;">Voltage</td> <td style="text-align: center; font-weight: bold; font-size: 1.1em;">Current</td> </tr> <tr> <td style="text-align: center;">45 V to 150 V</td> <td style="text-align: center;">20 A</td> </tr> </table> <ul style="list-style-type: none"> <li>Plastic material used carries Underwriters Laboratory Classifications 94V-0</li> <li>Metal silicon junction, majority carrier conduction</li> <li>Low power loss, high efficiency.</li> <li>High current capability, low forward voltage drop</li> <li>High surge capability</li> <li>For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications</li> <li>High temperature soldering guaranteed: 260°C/10 seconds, 4.3mm from case</li> </ul> <p><b>Mechanical Data</b></p> <ul style="list-style-type: none"> <li>Cases: JEDEC TO-3P/TO-247AD molded plastic body</li> <li>Terminals: Pure tin plated, lead free. solderable per MIL-STD-750, Method 2026</li> <li>Polarity: As marked</li> <li>Mounting position: Any</li> <li>Mounting torque: 10 in. - lbs. max</li> <li>Weight: 5.6 grams</li> </ul> | Voltage | Current | 45 V to 150 V | 20 A |
| Voltage  | Current   |         |         |               |      |
| 45 V to 150 V  | 20 A  |         |         |               |      |

### Absolute Maximum Ratings, according to IEC publication No. 134

|             |  | MBR<br>2045PT    | MBR<br>2060PT | MBR<br>20100PT | MBR<br>20150PT |
|-------------|--|------------------|---------------|----------------|----------------|
| $V_{RRM}$   | Peak Recurrent Peak Reverse Voltage (V)  | 45               | 60            | 100            | 150            |
| $V_{RMS}$   | Maximum RMS Voltage (V)  | 31               | 42            | 70             | 105            |
| $V_{DC}$    | Maximum DC blocking voltage (V)  | 45               | 60            | 100            | 150            |
| $I_{F(AV)}$ | Maximum Average Forward Rectified Current<br>See Fig.  | 20 A             |               |                |                |
| $I_{FSM}$   | Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method) | 150 A            |               |                |                |
| $I_{RRM}$   | Peak Repetitive Reverse Surge Current (Note 1)   | 1.0 A            | 0.5 A         |                |                |
| $T_j$       | Operating Junction Temperature Range   | - 65 to + 150 °C |               |                |                |
| $T_{stg}$   | Storage temperature range  | - 65 to + 175 °C |               |                |                |

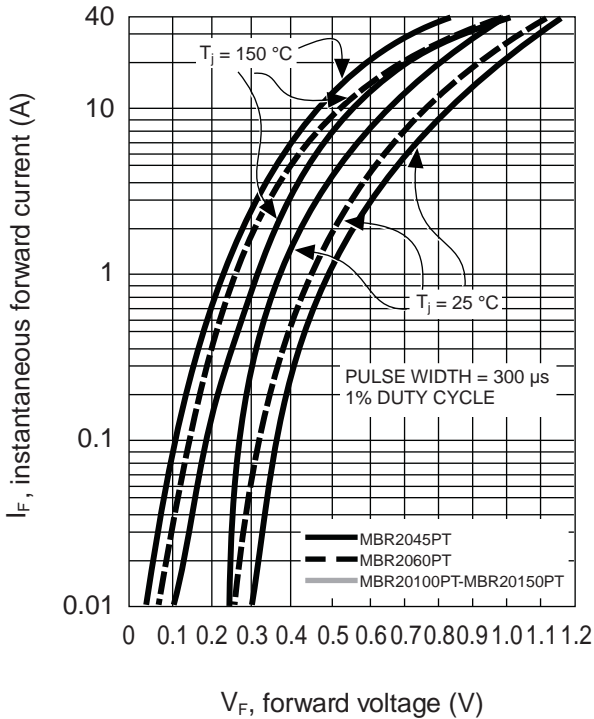
### Electrical Characteristics

|             |   | MBR<br>2045PT                   | MBR<br>2060PT                        | MBR<br>20100PT                       | MBR<br>20150PT                       |
|-------------|---|---------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| $V_F$       | Maximum Instantaneous Forward Voltage at (Note 2)<br>$I_F = 7.5 \text{ A}, T_c = 25 \text{ °C}$<br>$I_F = 7.5 \text{ A}, T_c = 125 \text{ °C}$<br>$I_F = 15 \text{ A}, T_c = 25 \text{ °C}$<br>$I_F = 15 \text{ A}, T_c = 125 \text{ °C}$ | -<br>0.57 V<br>0.84 V<br>0.72 V | 0.80 V<br>0.70 V<br>0.95 V<br>0.85 V | 0.85 V<br>0.75 V<br>0.95 V<br>0.85 V | 0.95 V<br>0.92 V<br>1.02 V<br>0.98 V |
| $I_R$       | Max. Instantaneous Reverse Current @ $T_C=25\text{°C}$<br>at Rated DC Blocking Voltage (Note 2) @ $T_C=125\text{°C}$  | 0.1 mA                          |                                      | 0.1 mA                               |                                      |
| $R_{thj-C}$ | Maximum Thermal Resistance Per Leg (Note 3)   | 15 mA<br>10 mA<br>5.0 mA        |                                      |                                      |                                      |
|             |   | 1.0 °C/W                        |                                      |                                      |                                      |

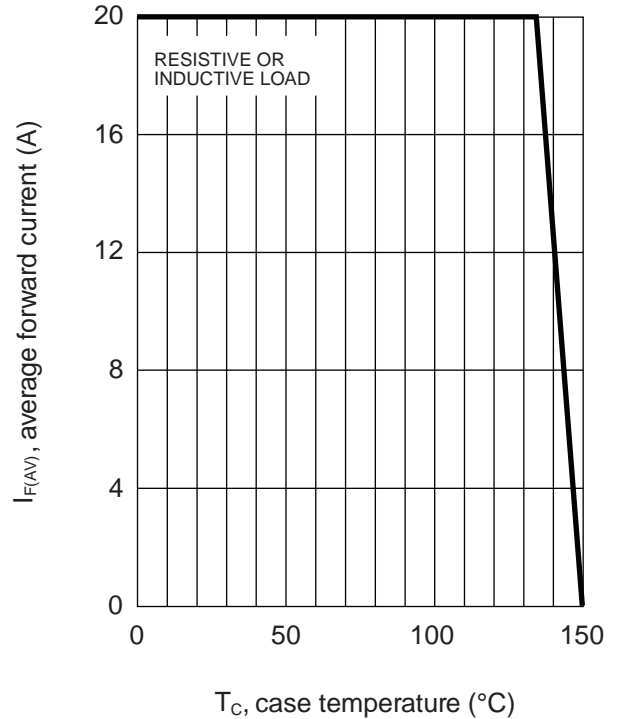
Notes: 1. 2.0µs Pulse Width, f=1.0 KHz  
 2. Pulse Test: 300µs Pulse Width, 1% Duty Cycle  
 3. Thermal Resistance from junction to Case Per Leg. With Heatsink Size of 101.6 mm x 152.4 mm x 6.35 mm Al-Plate.

## Rating And Characteristic Curves

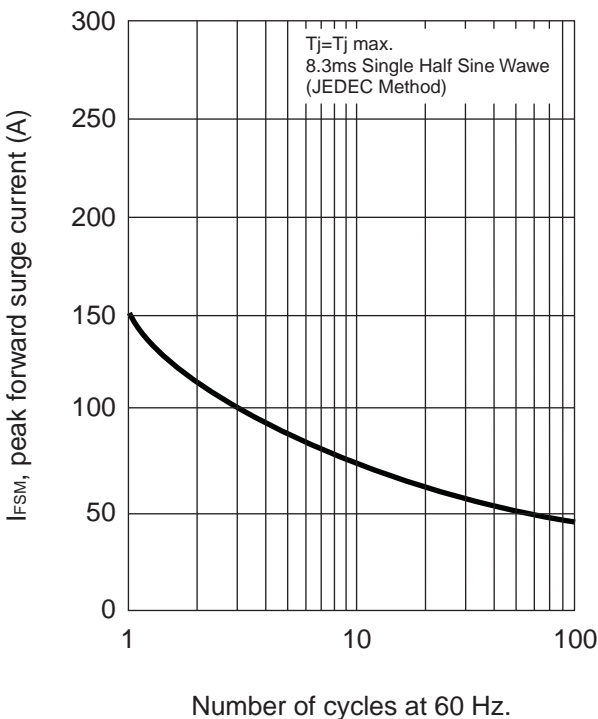
TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG



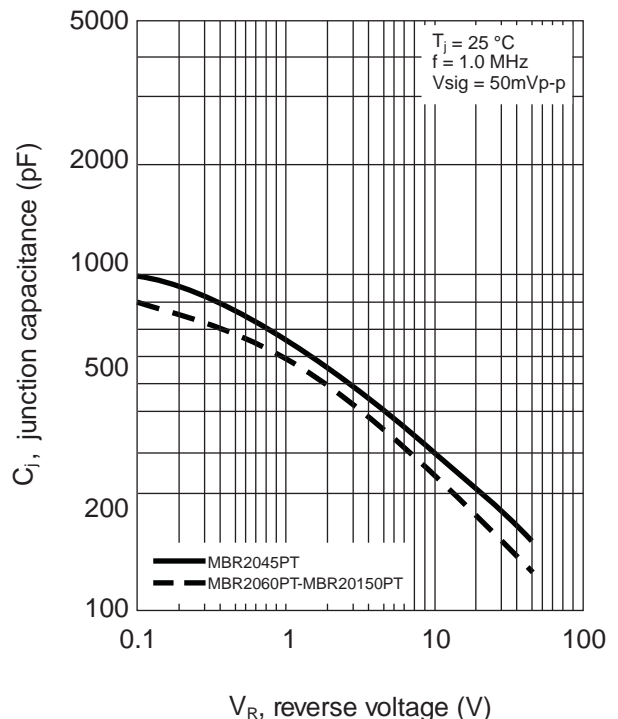
FORWARD CURRENT DERATING CURVE



MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

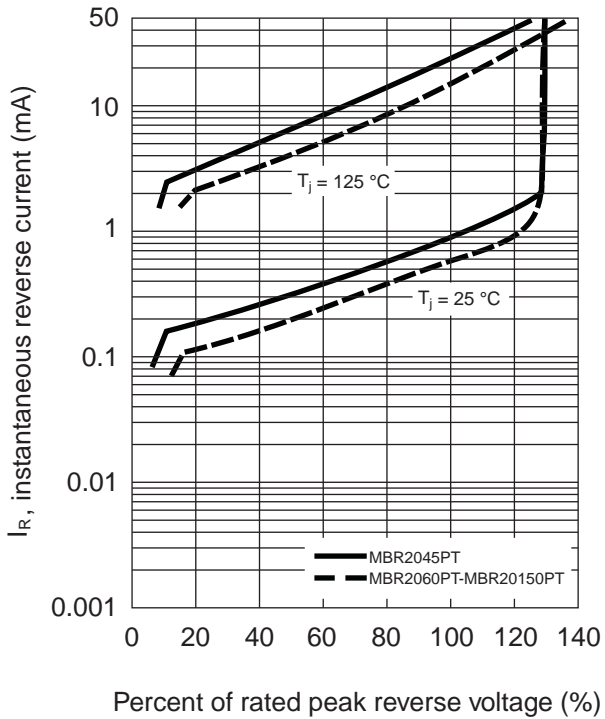


TYPICAL JUNCTION CAPACITANCE PER LEG

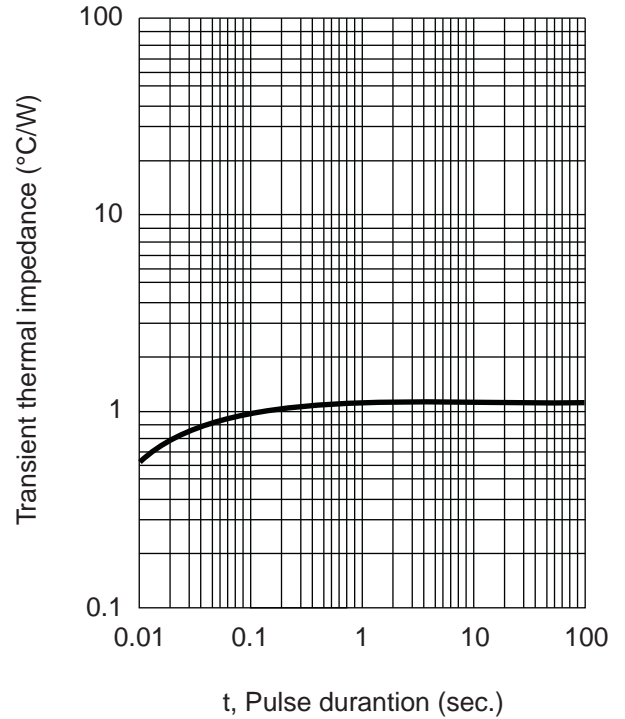


### Rating And Characteristic Curves

TYPICAL REVERSE CHARACTERISTICS PER LEG

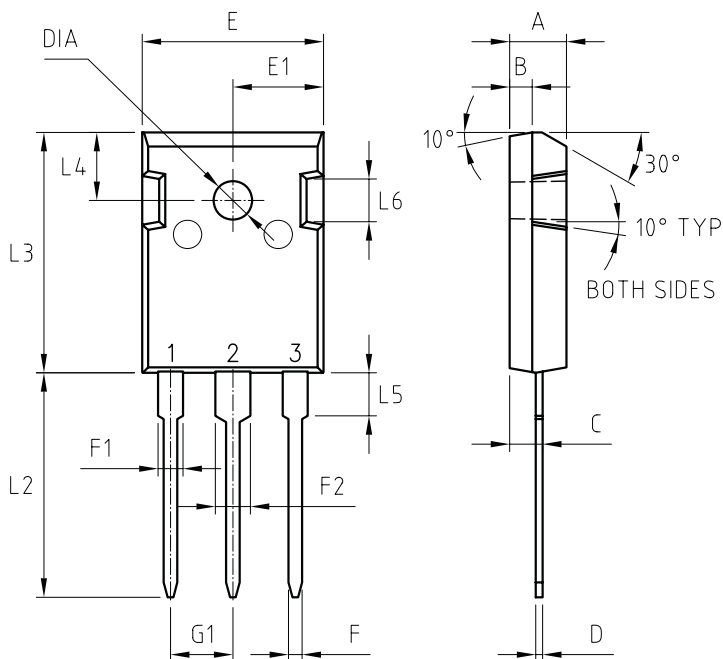


TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



### PACKAGE MECHANICAL DATA

### TO-3P



| REF. | DIMENSIONS  |         |      |
|------|-------------|---------|------|
|      | Millimeters |         |      |
|      | Min.        | Nominal | Max. |
| A    | 4.90        |         | 5.16 |
| B    |             | 1.98    |      |
| C    | 2.7         |         | 3.0  |
| D    | 0.51        |         | 0.76 |
| E    | 15.9        |         | 16.4 |
| E1   | 7.9         |         | 8.2  |
| F    | 1.12        |         | 1.22 |
| F1   | 1.93        |         | 2.18 |
| F2   | 2.97        |         | 3.22 |
| G1   | 5.2         |         | 5.7  |
| L2   | 19.7        |         | 20.2 |
| L3   | 20.8        |         | 21.3 |
| L4   | 5.7         |         | 6.2  |
| L5   | 3.5         |         | 4.1  |
| L6   |             | 4.3     |      |
| DIA  | 2.9         |         | 3.4  |