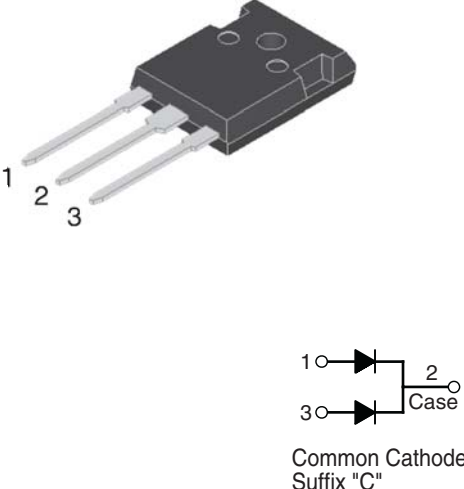




## 20.0 Amp. Schottky Barrier Rectifier

|   |  |                                  |  |
|---|--|----------------------------------|--|
| <p><b>TO-3P (TO-247AD)</b></p>  <p>1<br/>2<br/>3</p> <p>Common Cathode<br/>Suffix "C"</p> | <p><b>Voltage</b><br/>45 to 150 V</p>  | <p><b>Current</b><br/>20.0 A</p> |  |
|   | <p><b>FEATURES</b></p> <ul style="list-style-type: none"> <li>Ideal for automated placement</li> <li>Low power losses, high efficiency</li> <li>High surge current capability</li> <li>Guarding for overvoltage protection</li> <li>Low forward voltage drop</li> <li>Solder dip 260°C, 10s / 17" (4.3 mm) from case</li> <li>Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC</li> <li>Meets MSL level 1, per J-STD-020, LF maximum peak of 260° C</li> </ul> |                                  | <br><br><b>RoHS</b><br>COMPLIANT |
|   | <p><b>MECHANICAL DATA</b></p> <ul style="list-style-type: none"> <li><b>Case:</b> TO-3P (TO-247AD). Epoxy meets UL 94V-0 flammability rating.</li> <li><b>Polarity:</b> As marked on the body.</li> <li><b>Mounting Torque:</b> 10 in-lbs maximum.</li> <li><b>Terminals:</b> Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test.</li> </ul>                                    |                                  |  |
| <p><b>TYPICAL APPLICATIONS</b></p> <p>Used in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.</p>            |  |                                  |  |

### Maximum Ratings and Electrical Characteristics at 25°C

| Marking Code |  | MBR2045PT        | MBR2060PT | MBR20100PT | MBR20150PT |
|--------------|--|------------------|-----------|------------|------------|
|              |  | MBR2045PT        | MBR2060PT | MBR20100PT | MBR20150PT |
| $V_{RRM}$    | Peak recurrent 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 (See graphic)  | 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 at Tamb = 25 °C

|             |   |          |        |        |        |
|-------------|---|----------|--------|--------|--------|
| $V_F$       | Maximum Instantaneous Forward Voltage at (Note 2)   |          |        |        |        |
|             | $I_F = 10\text{ A}, T_c = 25\text{ °C}$   | -        | 0.80 V | 0.85 V | 0.95 V |
|             | $I_F = 10\text{ A}, T_c = 125\text{ °C}$  | 0.57 V   | 0.70 V | 0.75 V | 0.92 V |
|             | $I_F = 20\text{ A}, T_c = 25\text{ °C}$   | 0.84 V   | 0.95 V | 0.95 V | 1.02 V |
|             | $I_F = 20\text{ A}, T_c = 125\text{ °C}$  | 0.72 V   | 0.85 V | 0.85 V | 0.98 V |
| $I_R$       | Max. Instantaneous Reverse Current @ $T_C=25\text{ °C}$ at Rated DC Blocking Voltage (Note 2) @ $T_C=125\text{ °C}$ | 0.1 mA   |        | 0.1 mA |        |
|             |   | 15 mA    | 10 mA  | 5.0 mA |        |
| $R_{thj-C}$ | Maximum Thermal Resistance Per Leg (Note 3)   | 1.0 °C/W |        |        |        |

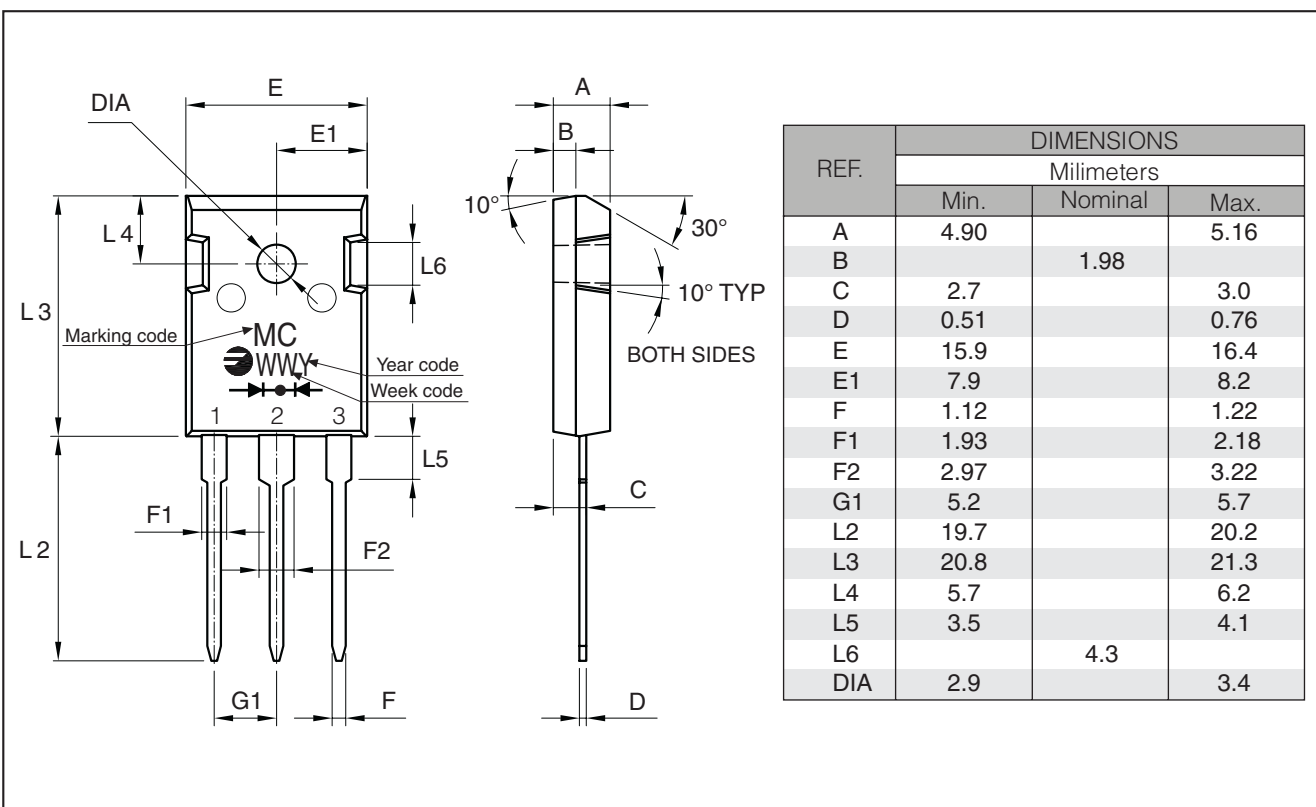
Notes: 1. 2.0µs Pulse Width, f=1.0 KHz  
 2. Pulse Test: 300µs Pulse Width, 1% Duty Cycle  
 3. Thermal Resistance from junction to Case Per Leg. With Heatsink Size of 101.6 mm x 152.4 mm x 6.35 mm Al-Plate.

**20.0 Amp. Schottky Barrier Rectifier**

**Ordering information**

| PREFERRED P/N    | PACKAGE CODE | DELIVERY MODE | BASE QUANTITY | UNIT WEIGHT (g) |
|------------------|--------------|---------------|---------------|-----------------|
| MBR2060PTC 00TUC | TU           | TUBE          | 900           | 6.12            |

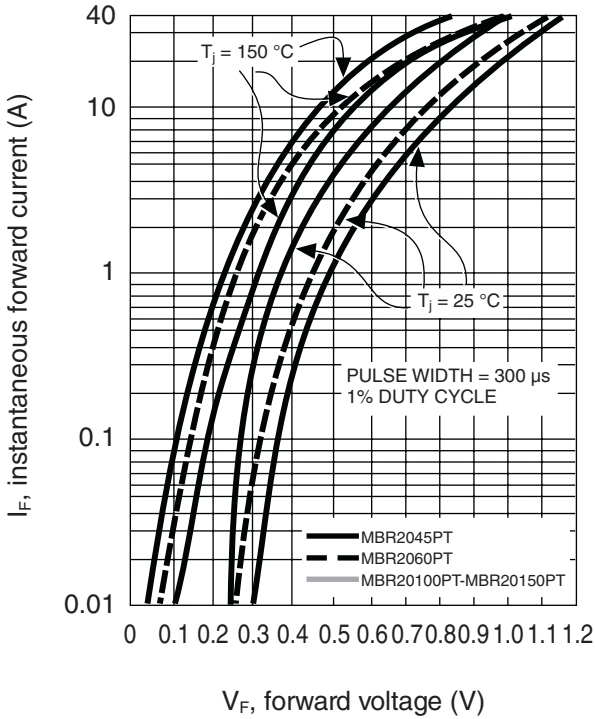
**Package Outline Dimensions: (mm) TO-3P (TO-247AD)**



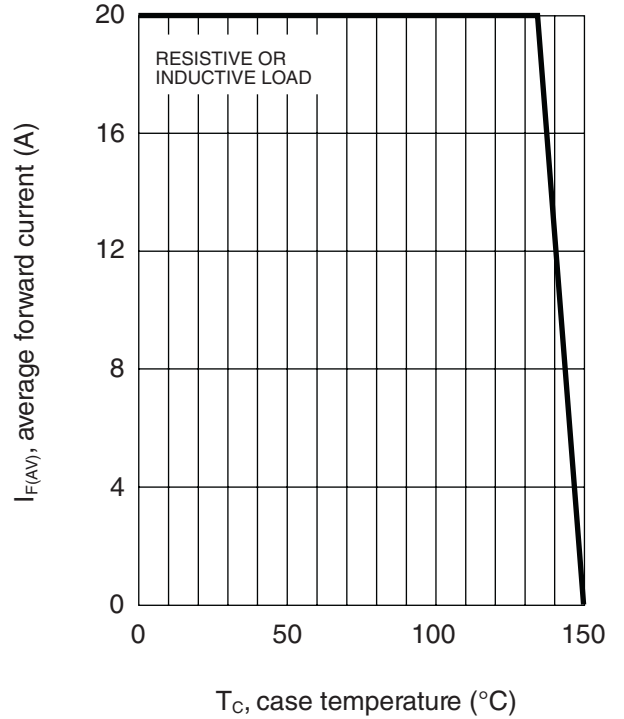
20.0 Amp. Schottky Barrier Rectifier

Ratings and Characteristics (Ta 25 °C unless otherwise noted)

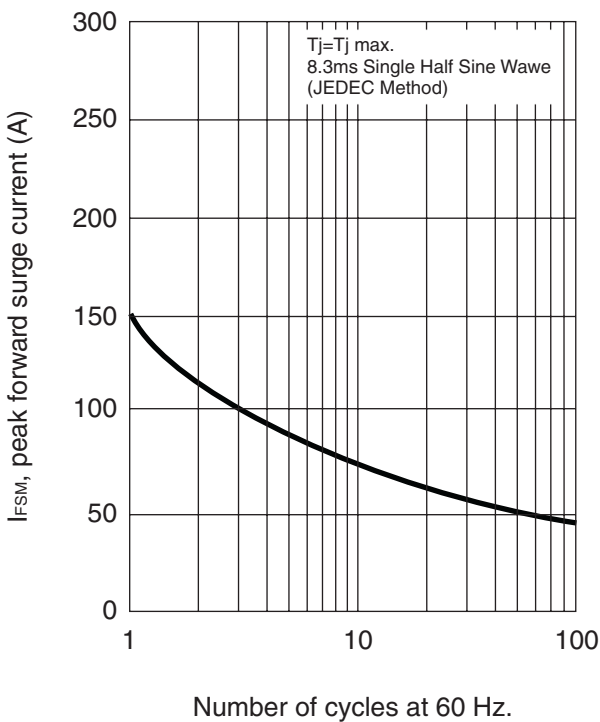
TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG



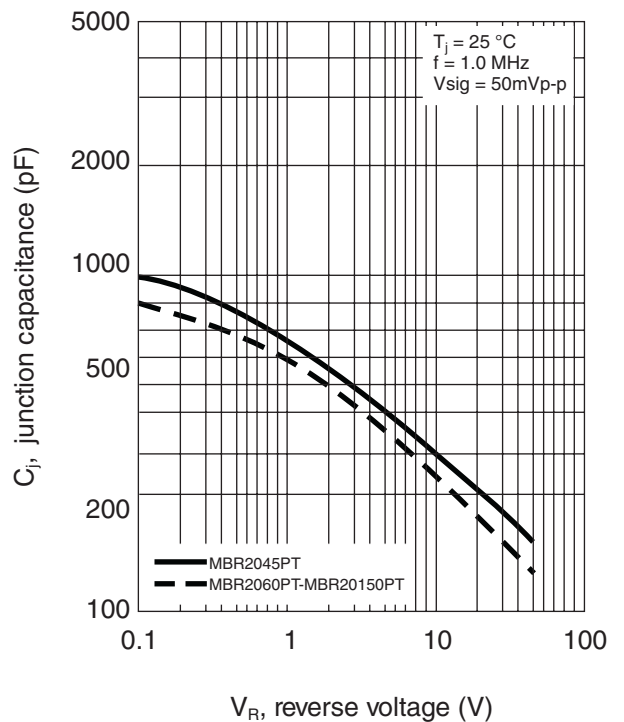
FORWARD CURRENT DERATING CURVE



MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG



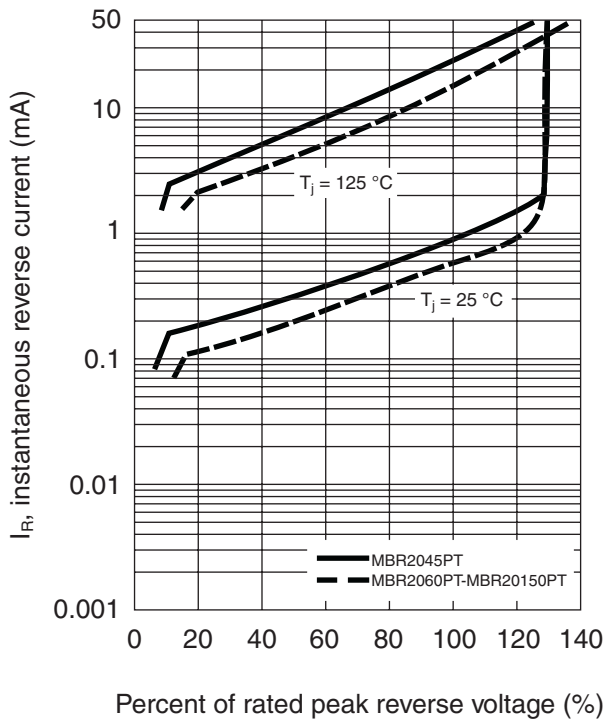
TYPICAL JUNCTION CAPACITANCE PER LEG



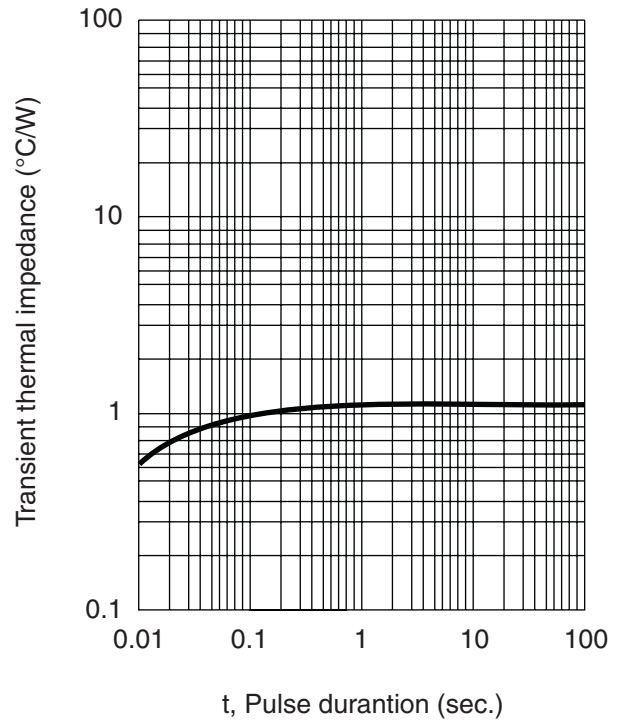
**20.0 Amp. Schottky Barrier Rectifier**

**Ratings and Characteristics (Ta 25 °C unless otherwise noted)**

TYPICAL REVERSE CHARACTERISTICS PER LEG



TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



**20.0 Amp. Schottky Barrier Rectifier****Revision History**

| <b>Date</b> | <b>Revision</b> | <b>Description of Changes</b> |
|-------------|-----------------|-------------------------------|
| 15-Jul-2009 | 0               | Original Data Sheet           |
| 22-Sep-2016 | 1               | Format update                 |

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