

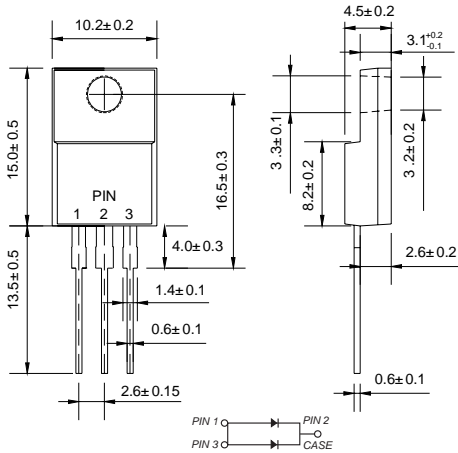


# MBRF3020CT THRU MBRF30100CT

## SCHOTTKY BARRIER RECTIFIER

Reverse Voltage - 20 to 100 Volts Forward Current - 30.0 Amperes

### ITO-220AB



Dimensions in inches and (millimeters)

### FEATURES

- ◆ 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 capability, low forward voltage drop.
- ◆ Guard ring for over voltage protection.

### MECHANICAL DATA

**Case:** ITO-220AB molded plastic body  
**Terminals:** Leads solderable per MIL-STD-750, Method 2026  
**Polarity:** As marked  
**Mounting Position:** Any  
**Weight:** 0.060 ounce, 1.67 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.  
 Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| MDD Catalog Number  | SYMBOLS         | MBRF 3020CT       | MBRF 3030CT | MBRF 3040CT | MBRF 3045CT | MBRF 3050CT | MBRF 3060CT | MBRF 3070CT | MBRF 3080CT | MBRF 3090CT | MBRF 30100CT | UNITS |
|---|-----------------|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------|
| Maximum repetitive peak reverse voltage   | $V_{RRM}$       | 20                | 30          | 40          | 45          | 50          | 60          | 70          | 80          | 90          | 100          | VOLTS |
| Maximum RMS voltage   | $V_{RMS}$       | 14                | 21          | 28          | 32          | 35          | 42          | 49          | 56          | 63          | 70           | VOLTS |
| Maximum DC blocking voltage   | $V_{DC}$        | 20                | 30          | 40          | 45          | 50          | 60          | 70          | 80          | 90          | 100          | VOLTS |
| Maximum average forward rectified current (see fig.1)   | $I_{(AV)}$      | 30.0              |             |             |             |             |             |             |             |             |              | Amps  |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$       | 250.0             |             |             |             |             |             |             |             |             |              | Amps  |
| Maximum instantaneous forward voltage at 15.0A  | $V_F$           | 0.55              |             |             | 0.75        |             |             | 0.85        |             |             | Volts        |       |
| Maximum DC reverse current<br>at rated DC blocking voltage  | $I_R$           | $T_A=25^\circ C$  |             | 1.0         |             |             |             |             |             |             |              | mA    |
|   |                 | $T_A=100^\circ C$ |             | 15.0        |             |             | 50.0        |             |             |             |              |       |
| Typical junction capacitance (NOTE 1)   | $C_J$           | 750               |             |             | 500         |             |             |             |             |             | pF           |       |
| Typical thermal resistance (NOTE 2)   | $R_{\theta JC}$ | 2.0               |             |             |             |             |             |             |             |             |              | °C/W  |
| Operating junction temperature range  | $T_J$           | -55 to +125       |             |             |             |             | -55 to +150 |             |             |             |              | °C    |
| Storage temperature range   | $T_{STG}$       | -55 to +150       |             |             |             |             |             |             |             |             |              | °C    |

**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

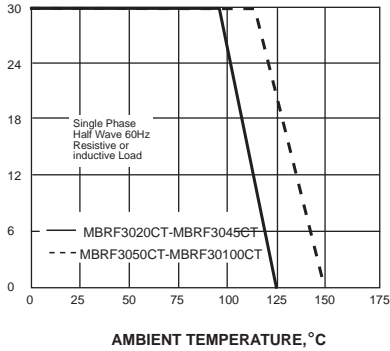
2. Thermal resistance from junction to case



# RATINGS AND CHARACTERISTIC CURVES MBRF3020CT THRU MBRF30100CT

AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

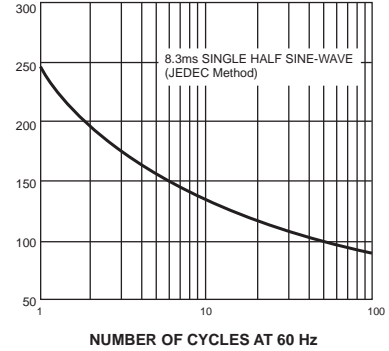
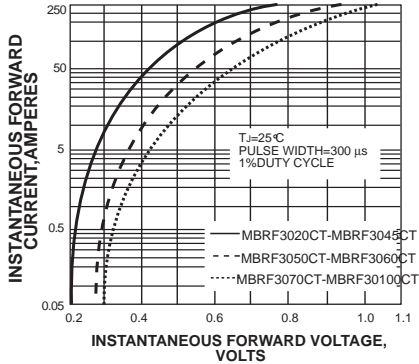


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT, MILLIAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

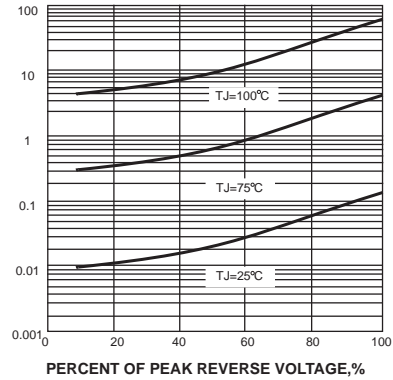
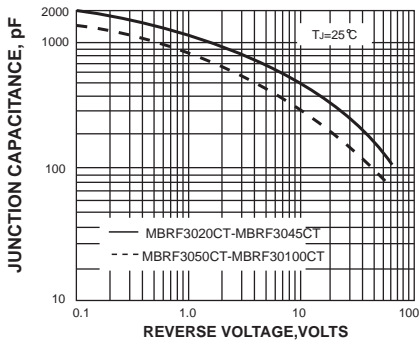
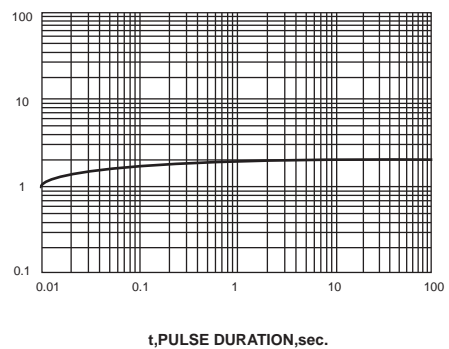


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  $^{\circ}\text{C}/\text{W}$

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



The cruve graph is for reference only, can't be the basis for judgment(曲线图仅供参考)!



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