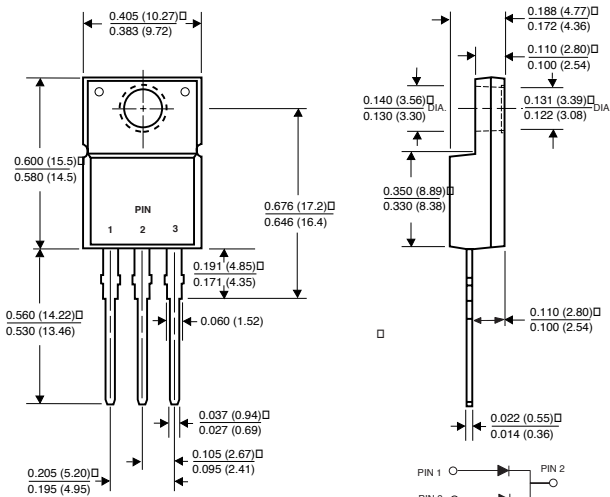


# MBRF2535CT THRU MBRF2560CT

## SCHOTTKY ISOLATED PLASTIC RECTIFIER

Reverse Voltage - 35 to 60 Volts    Forward Current - 30.0 Amperes

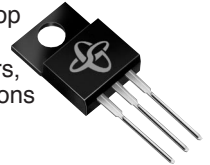
### ITO-220AB



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Isolated plastic package has Underwriters Laboratory Flammability Classifications 94V-0
- ◆ Dual rectifier construction, positive center-tap
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ High current capability, low forward voltage drop
- ◆ High surge capability
- ◆ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ◆ Guardring for overvoltage protection
- ◆ High temperature soldering guaranteed: 250°C/10 seconds, 0.25" (6.35mm) from case



### MECHANICAL DATA

**Case:** ITO-220AB fully overmolded plastic body

**Terminals:** Lead solderable per MIL-STD-750, Method 2026

**Polarity:** As marked

**Mounting Position:** Any

**Weight:** 0.08 ounce, 2.24 grams

**Mounting Torque:** 5 in. - lbs. max.

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

|                                                                                                           | SYMBOLS         | MBRF2535CT                                      | MBRF2545CT | MBRF2550CT | MBRF2560CT | UNITS                     |
|-----------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------|------------|------------|------------|---------------------------|
| Maximum repetitive peak reverse voltage                                                                   | $V_{RRM}$       | 35                                              | 45         | 50         | 60         | Volts                     |
| Maximum working peak reverse voltage                                                                      | $V_{RWM}$       | 35                                              | 45         | 50         | 60         | Volts                     |
| Maximum DC blocking voltage                                                                               | $V_{DC}$        | 35                                              | 45         | 50         | 60         | Volts                     |
| Maximum average forward rectified current at $T_C=130^\circ\text{C}$                                      | $I_{(AV)}$      | 30.0                                            |            |            |            | Amps                      |
| Peak repetitive forward current per leg at $T_C=130^\circ\text{C}$ (rated $V_R$ , square wave, 20 KHz)    | $I_{FRM}$       | 30.0                                            |            |            |            | Amps                      |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed<br>on rated load (JEDEC Method)    | $I_{FSM}$       | 150.0                                           |            |            |            | Amps                      |
| Peak repetitive reverse surge current (NOTE 1)                                                            | $I_{RRM}$       | 1.0                                             |            | 0.5        |            | Amps                      |
| Maximum instantaneous forward voltage $I_F=15.0\text{A}$ , $T_C=25^\circ\text{C}$<br>per leg at: (NOTE 2) | $V_F$           | $I_F=15.0\text{A}$ , $T_C=25^\circ\text{C}$     | -          | 0.75       |            | Volts                     |
|                                                                                                           |                 | $I_F=30\text{A}$ , $T_C=25^\circ\text{C}$       | 0.82       | -          |            |                           |
|                                                                                                           |                 | $I_F=30\text{A}$ , $T_C=125^\circ\text{C}$      | 0.73       | -          |            |                           |
|                                                                                                           |                 |                                                 |            |            |            |                           |
| Maximum instantaneous reverse current at<br>rated DC blocking voltage per leg (NOTE 2)                    | $I_R$           | $T_C=25^\circ\text{C}$                          | 0.2        | 1.0        |            | mA                        |
|                                                                                                           |                 | $T_C=125^\circ\text{C}$                         | 40.0       | 50.0       |            |                           |
| Maximum thermal resistance (NOTE 3)                                                                       | $R_{\theta JC}$ | 4.5                                             |            |            |            | $^\circ\text{C}/\text{W}$ |
| Voltage rate of change (rated $V_R$ )                                                                     | $dv/dt$         | 10,000                                          |            |            |            | $\text{V}/\mu\text{s}$    |
| Operating junction temperature range                                                                      | $T_J$           | -65 to +150                                     |            |            |            | $^\circ\text{C}$          |
| Storage temperature range                                                                                 | $T_{STG}$       | -65 to +175                                     |            |            |            | $^\circ\text{C}$          |
| RMS Isolation voltage from terminals to heatsink<br>with $RH \leq 30\%$                                   | $V_{ISOL}$      | 4500 (NOTE 4)<br>3500 (NOTE 5)<br>1500 (NOTE 6) |            |            |            | Volts                     |

**NOTES:** (1) 2.0 $\mu\text{s}$  pulse width,  $f=1.0$  KHz

(2) Pulse test: 300 $\mu\text{s}$  pulse width, 1% duty cycle

(3) Thermal resistance from junction to case per leg

(4) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset.

(5) Clip mounting (on case), where leads do overlap heatsink.

(6) Screw mounting with 4-40 screw, where washer diameter is  $\leq 4.9$  mm (0.19").

# RATINGS AND CHARACTERISTIC CURVES MBRF2535CT THRU MBRF2560CT

FIG. 1 - FORWARD CURRENT DERATING CURVE

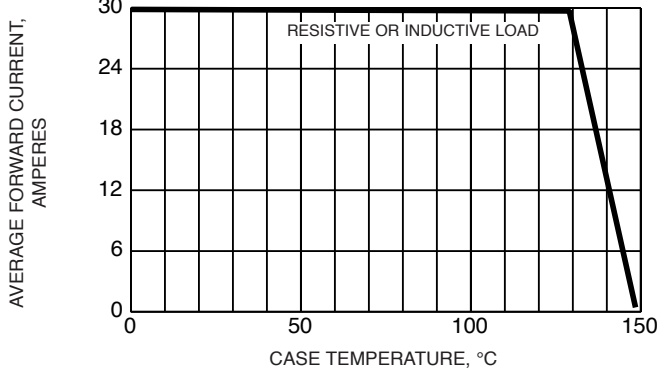


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

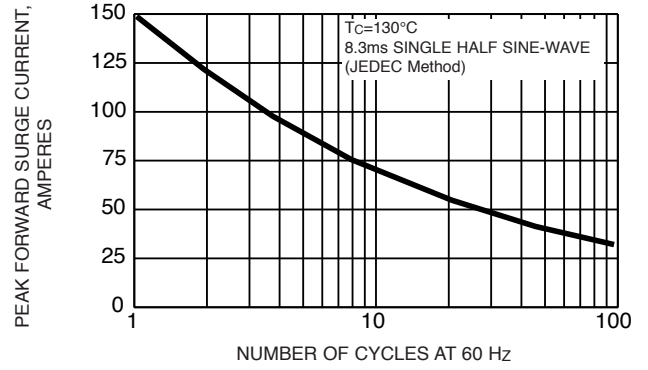


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

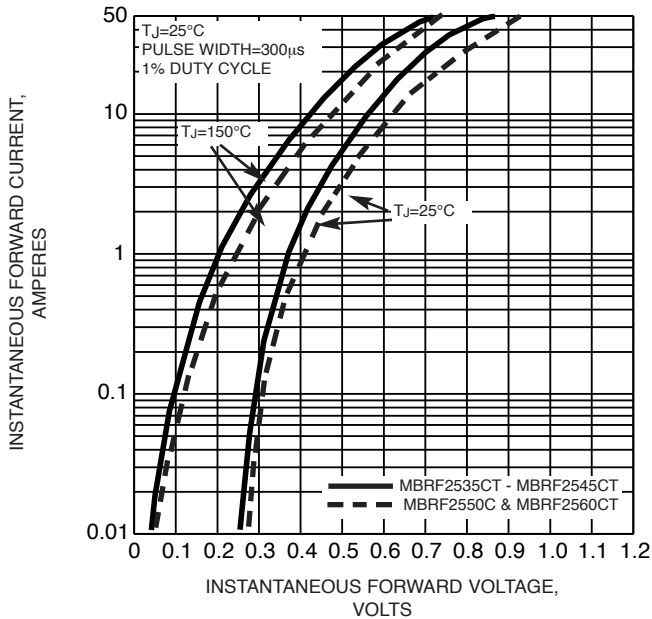


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS PER LEG

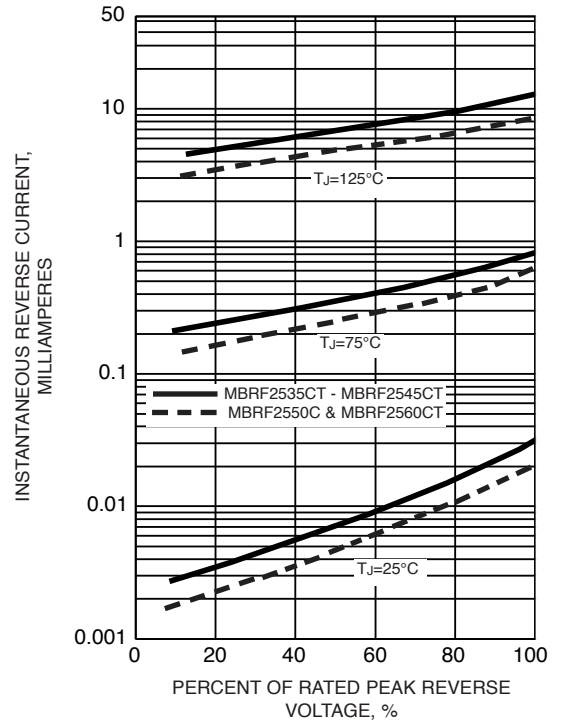


FIG. 5 - TYPICAL JUNCTION CAPACITANCE PER LEG

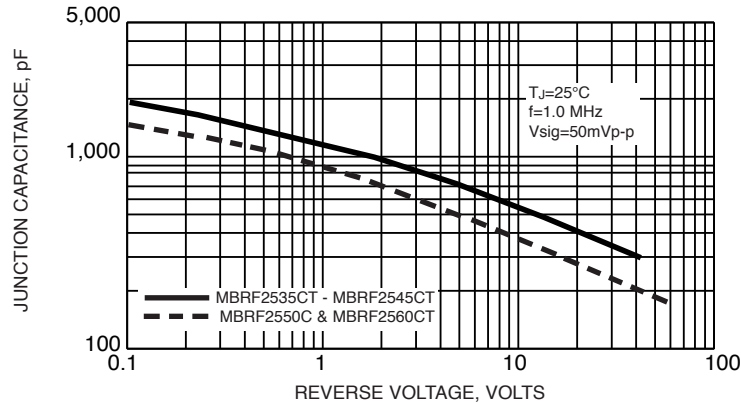


FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

