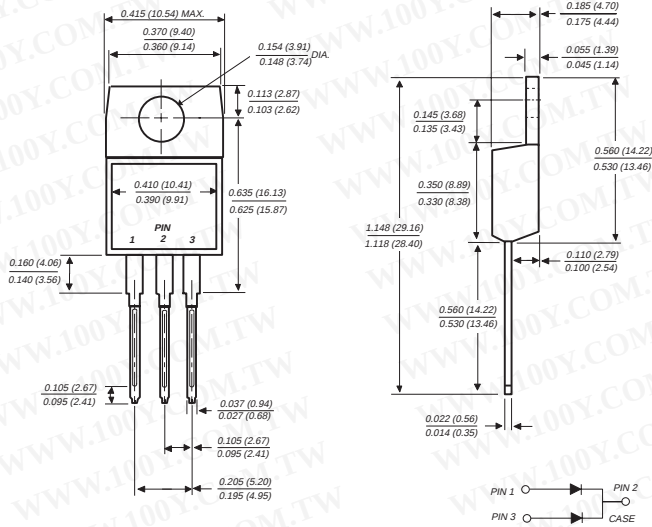


# MBR2035CT THRU MBR2060CT

## SCHOTTKY RECTIFIER

Reverse Voltage - 35 to 60 Volts Forward Current - 20.0 Amperes

### TO-220AB



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 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
- ◆ Guardring for overvoltage protection
- ◆ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ◆ High temperature soldering guaranteed: 250°C/10 seconds, 0.25" (6.35mm) from case



### MECHANICAL DATA

**Case:** JEDEC TO-220AB molded plastic  
**Terminals:** Leads solderable per MIL-STD-750, Method 2026  
**Polarity:** As marked  
**Mounting Position:** Any  
**Mounting Torque:** 5 in. - lbs.max.  
**Weight:** 0.08 ounce, 2.24 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

|                                                                                                                                                                                                                                              | SYMBOLS         | MBR2035CT                 | MBR2045CT | MBR2050CT                    | MBR2060CT | 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 $T_C=135^\circ\text{C}$                                                                                                                                                                         | $I_{(AV)}$      | 20.0                      |           |                              |           | Amps                      |
| Peak repetitive forward current per leg at $T_C=135^\circ\text{C}$ (rated $V_R$ , sq. wave 2.0 KHz)                                                                                                                                          | $I_{FRM}$       | 20.0                      |           |                              |           | Amps                      |
| Peak forward surge current 8.3ms single half sine-wave superimposed 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 per leg at $I_F=10\text{A}$ , $T_C=25^\circ\text{C}$<br>(NOTE 2) $I_F=10\text{A}$ , $T_C=125^\circ\text{C}$<br>$I_F=20\text{A}$ , $T_C=25^\circ\text{C}$<br>$I_F=20\text{A}$ , $T_C=125^\circ\text{C}$ | $V_F$           | —<br>0.57<br>0.84<br>0.72 |           | 0.80<br>0.70<br>0.95<br>0.85 |           | Volts                     |
| Maximum instantaneous reverse current at rated DC blocking voltage per leg $T_C=25^\circ\text{C}$<br>$T_C=125^\circ\text{C}$                                                                                                                 | $I_R$           | 0.1<br>15.0               |           | 0.15<br>150.0                |           | mA                        |
| Voltage rate of change, (rated $V_R$ )                                                                                                                                                                                                       | $dv/dt$         | 10,000                    |           |                              |           | V/ $\mu\text{s}$          |
| Typical thermal resistance per leg (NOTE 3)                                                                                                                                                                                                  | $R_{\theta JC}$ | 2.0                       |           |                              |           | $^\circ\text{C}/\text{W}$ |
| Operating junction temperature range                                                                                                                                                                                                         | $T_J$           | -65 to +150               |           |                              |           | $^\circ\text{C}$          |
| Storage temperature range                                                                                                                                                                                                                    | $T_{STG}$       | -65 to +175               |           |                              |           | $^\circ\text{C}$          |

#### NOTES:

- (1) 2.0 $\mu\text{s}$  pulse width,  $f=1.0\text{KHz}$   
(2) Pulse test: 300 $\mu\text{s}$  pulse width, 1% duty cycle

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# RATINGS AND CHARACTERISTIC CURVES MBR2035CT THRU MBR2060CT

FIG. 1 - FORWARD CURRENT DERATING CURVE

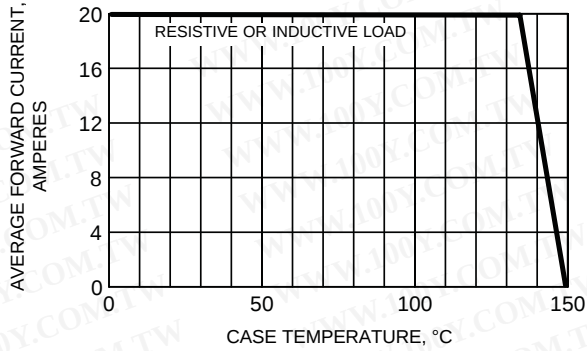


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

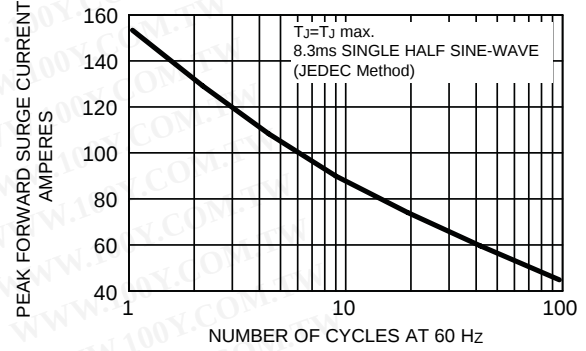


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

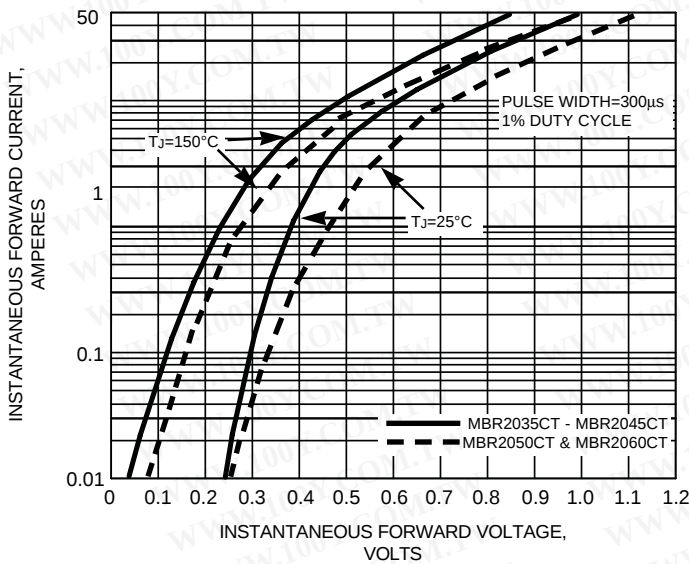


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS PER LEG

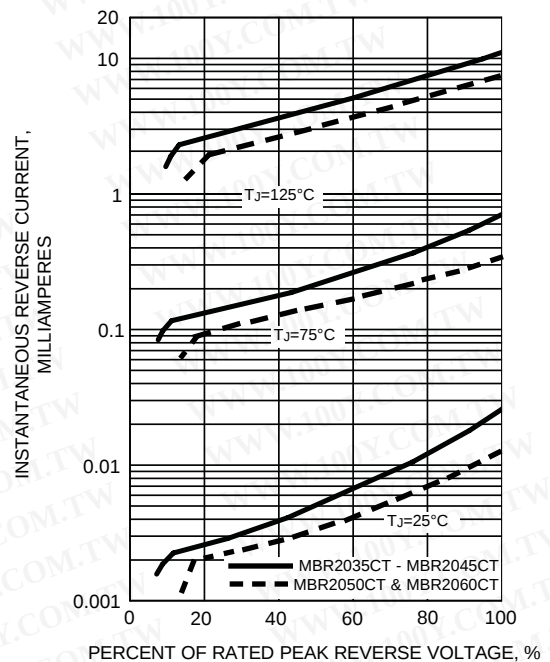


FIG. 5 - TYPICAL JUNCTION CAPACITANCE PER LEG

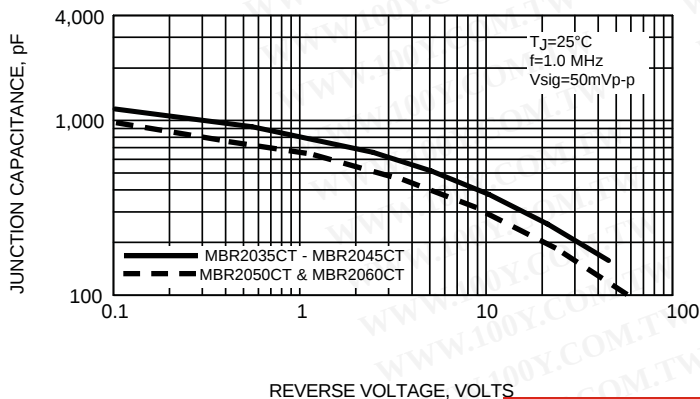
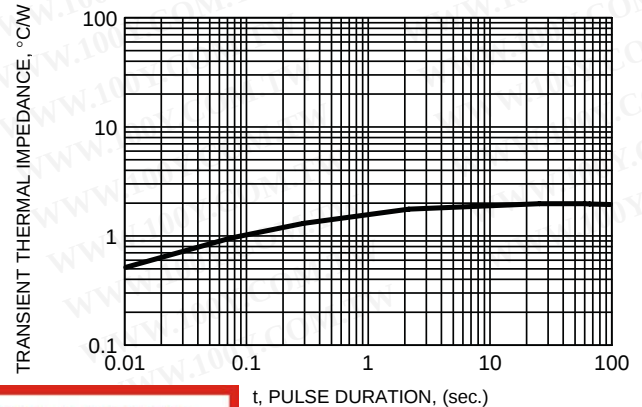


FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



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