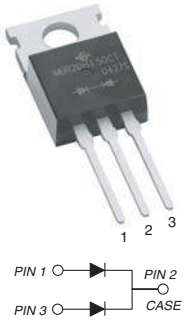
# Dual Common Cathode High Voltage Schottky Rectifier

TO-220AB




## FEATURES

- Power pack
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 260 °C, 40 s
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

## TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, or polarity protection application.

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 2 x 30 A |
| $V_{RRM}$ | 100 V |
| $I_{FSM}$ | 350 A |
| $V_F$ at $I_F$ = 30 A | 0.64 V |
| $T_J$ max. | 175 °C |
| Package | TO-220AB |
| Diode variations | Common cathode |

## MECHANICAL DATA

**Case:** TO-220AB

Epoxy meets UL 94 V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

**Polarity:** As marked

**Mounting Torque:** 10 in-lbs maximum

**MAXIMUM RATINGS** ($T_C$ = 25 °C unless otherwise noted)

| PARAMETER | | SYMBOL | MBR60100CT | UNIT |
|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | | $V_{RRM}$ | 100 | V |
| Working peak reverse voltage | | $V_{RWM}$ | 100 | V |
| Maximum DC blocking voltage | | $V_{DC}$ | 100 | V |
| Maximum average forward rectified current | total device | $I_{F(AV)}$ | 60 | A |
| | per diode | | 30 | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | | $I_{FSM}$ | 350 | A |
| Peak repetitive reverse current per diode at $t_p$ = 2 µs, 1 kHz | | $I_{RRM}$ | 1.0 | A |
| Peak non-repetitive reverse surge energy per diode (8/20 µs waveform) | | $E_{RSM}$ | 25 | mJ |
| Non-repetitive avalanche energy per diode at 25 °C, $I_{AS}$ = 1.0 A, L = 40 mH | | $E_{AS}$ | 20 | mJ |
| Voltage rate of change (rated $V_R$) | | dV/dt | 10 000 | V/µs |
| Operating junction and storage temperature range | | $T_J$, $T_{STG}$ | -65 to +175 | °C |

| **ELECTRICAL CHARACTERISTICS** ($T_C$ = 25 °C unless otherwise noted) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | | **SYMBOL** | **TYP.** | **MAX.** | **UNIT** |
| Instantaneous forward voltage per diode (1) | $I_F$ = 30 A | $T_J$= 25 °C | $V_F$ | 0.78 | 0.82 | V |
| | $I_F$ = 60 A | | | 0.92 | 1 | |
| | $I_F$ = 30 A | $T_J$ = 125 °C | | 0.64 | 0.69 | |
| | $I_F$ = 60 A | | | 0.78 | 0.83 | |
| Reverse current per diode (2) | $V_R$ = 100 V | $T_J$ = 25 °C | $I_R$ | 8 | 100 | µA |
| | | $T_J$ = 125 °C | | 8.5 | 20 | mA |

**Notes**

(1) Pulse test: 300µs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

| **THERMAL CHARACTERISTICS** ($T_C$ = 25 °C unless otherwise noted) | | | |
|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **MBR60100CT** | **UNIT** |
| Typical thermal resistance per diode | $R_{\theta JC}$ | 0.5 | °C/W |

| **ORDERING INFORMATION** (Example) | | | | | |
|---|---|---|---|---|---|
| **PACKAGE** | **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| TO-220AB | MBR60100CT-E3/45 | 2.068 | 45 | 50/tube | Tube |

## RATINGS AND CHARACTERISTICS CURVES ($T_C$ = 25 °C unless otherwise noted)

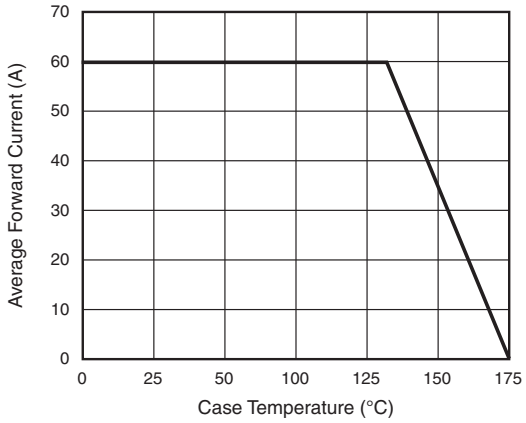



Fig. 1 - Forward Derating Curve

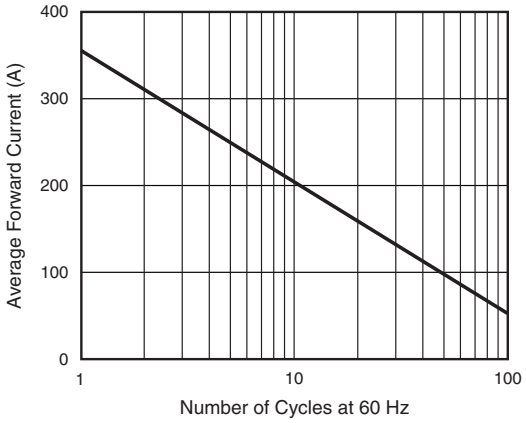



Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

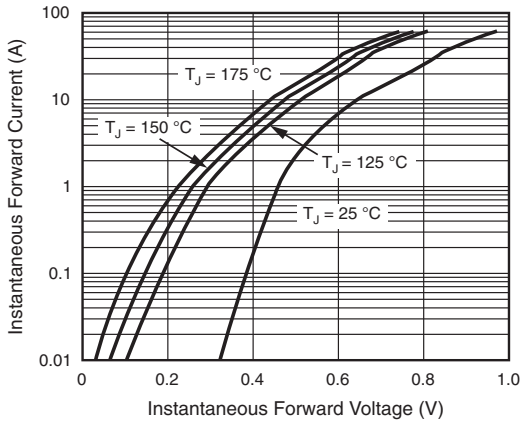



Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

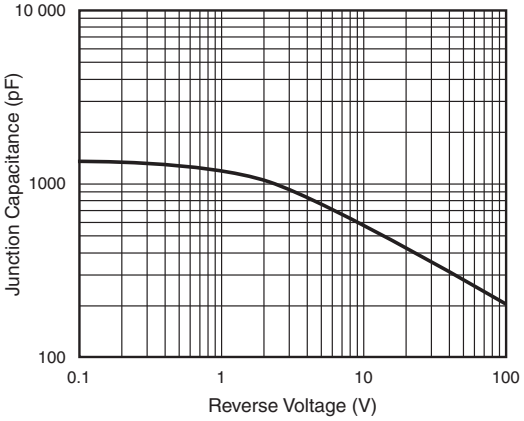



Fig. 5 - Typical Junction Capacitance Per Diode

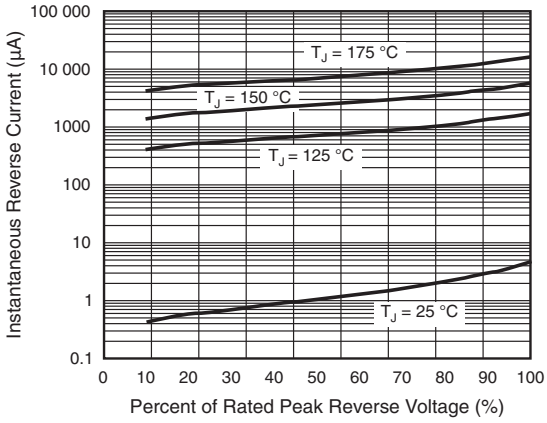



Fig. 4 - Typical Reverse Characteristics Per Diode

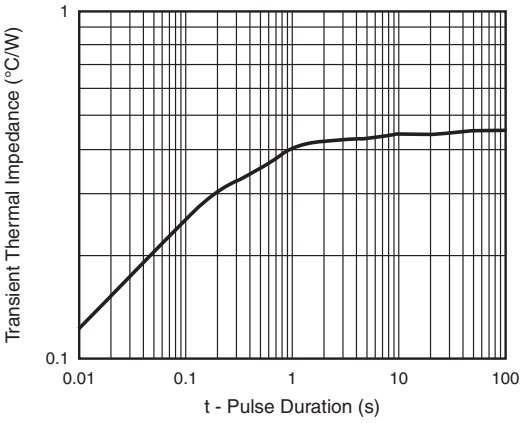
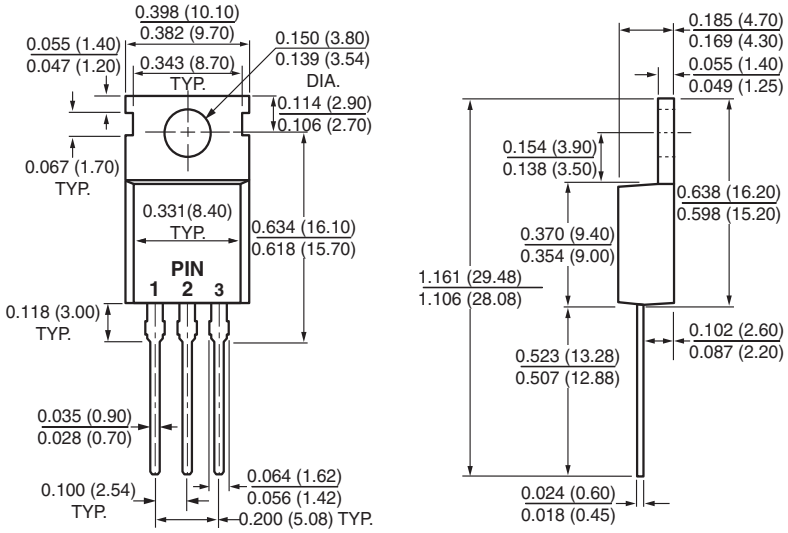



Fig. 6 - Typical Transient Thermal Impedance Per Diode

## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

### TO-220AB



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