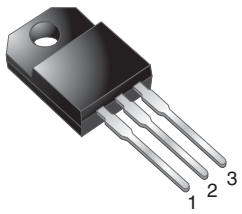
# Dual High-Voltage Trench MOS Barrier Schottky Rectifier

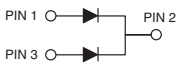
Ultra Low $V_F$ = 0.36 V at $I_F$ = 5 A

**TMBS®**

**ITO-220AB**




**VF60100C**




| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 2 x 30 A |
| $V_{RRM}$ | 100 V |
| $I_{FSM}$ | 320 A |
| $V_F$ at $I_F$ = 30 A | 0.66 V |
| $T_J$ max. | 150 °C |
| Package | ITO-220AB |
| Circuit configuration | Common cathode |

## FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

## TYPICAL APPLICATIONS

For use in high frequency converters, switching power supplies, freewheeling diodes, OR-ing diode, DC/DC converters and reverse battery protection.

## MECHANICAL DATA

**Case:** ITO-220AB
Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
M3 suffix meets JESD 201 class 1A whisker test

**Polarity:** as marked

Mounting Torque: 10 in-lbs maximum

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

| PARAMETER | | SYMBOL | VF60100C | UNIT |
|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | | $V_{RRM}$ | 100 | V |
| Maximum average forward rectified current (fig. 1) | per 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 | | $I_{FSM}$ | 320 | A |
| Isolation voltage from terminal to heatsink t = 1 min | | $V_{AC}$ | 1500 | V |
| Voltage rate of change (rated $V_R$) | | dV/dt | 10 000 | V/µs |
| Operating junction and storage temperature range | | $T_J$, $T_{STG}$ | -40 to +150 | °C |


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| **ELECTRICAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | | **SYMBOL** | **TYP.** | **MAX.** | **UNIT** |
| Instantaneous forward voltage per diode | $I_F$ = 5 A | $T_A$ = 25 °C | $V_F$ (1) | 0.45 | - | V |
| | $I_F$ = 10 A | | | 0.52 | - | |
| | $I_F$ = 15 A | | | 0.58 | 0.63 | |
| | $I_F$ = 20 A | | | 0.63 | - | |
| | $I_F$ = 30 A | | | 0.73 | 0.79 | |
| | $I_F$ = 5 A | $T_A$ = 125 °C | | 0.36 | - | |
| | $I_F$ = 10 A | | | 0.45 | - | |
| | $I_F$ = 15 A | | | 0.53 | 0.58 | |
| | $I_F$ = 20 A | | | 0.58 | - | |
| | $I_F$ = 30 A | | | 0.66 | 0.70 | |
| Reverse current at rated $V_R$ per diode | $V_R$ = 80 V | $T_A$ = 25 °C | $I_R$ (2) | 24 | 500 | µA |
| | | $T_A$ = 125 °C | | 13 | 20 | mA |
| | $V_R$ = 100 V | $T_A$ = 25 °C | | 65 | 1000 | µA |
| | | $T_A$ = 125 °C | | 30 | - | mA |

**Notes**

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

(2) Pulse test: Pulse width ≤ 40 ms

| **THERMAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | |
|---|---|---|---|---|
| **PARAMETER** | | **SYMBOL** | **VF60100C** | **UNIT** |
| Typical thermal resistance | per diode | $R_{\theta JC}$ | 5.0 | °C/W |
| | per device | | 3.5 | |

| **ORDERING INFORMATION** (Example) | | | | | |
|---|---|---|---|---|---|
| **PACKAGE** | **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| ITO-220AB | VF60100C-M3/4W | 1.76 | 4W | 50/tube | Tube |


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**RATINGS AND CHARACTERISTICS CURVES** ($T_A$ = 25 °C unless otherwise noted)

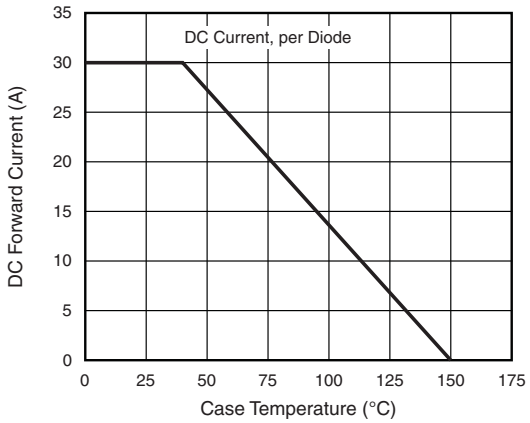



Fig. 1 - Maximum Forward Current Derating Curve

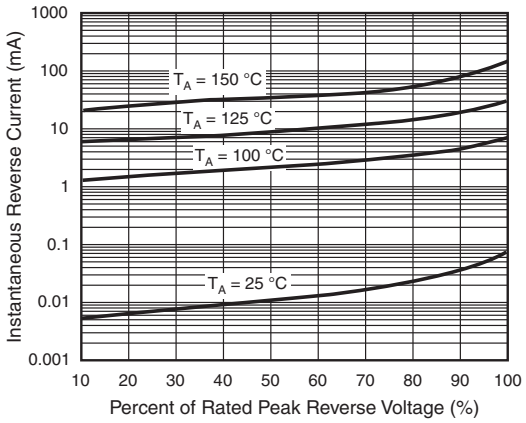



Fig. 4 - Typical Reverse Characteristics Per Diode

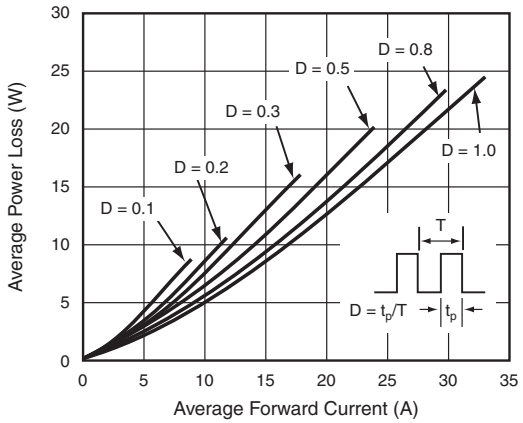



Fig. 2 - Forward Power Loss Characteristics Per Diode

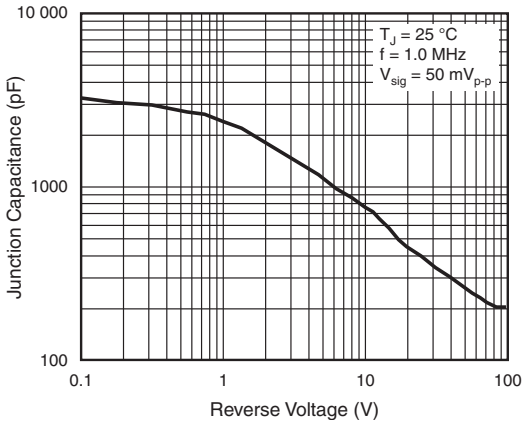



Fig. 5 - Typical Junction Capacitance Per Diode

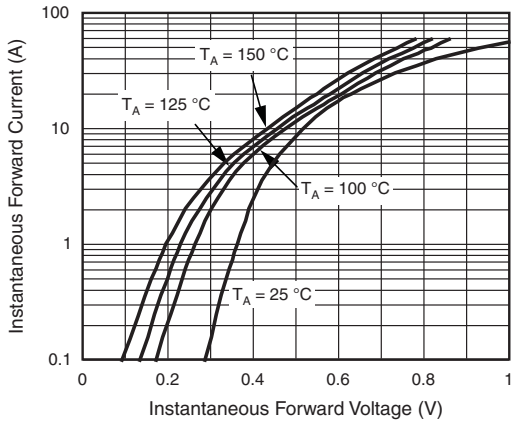
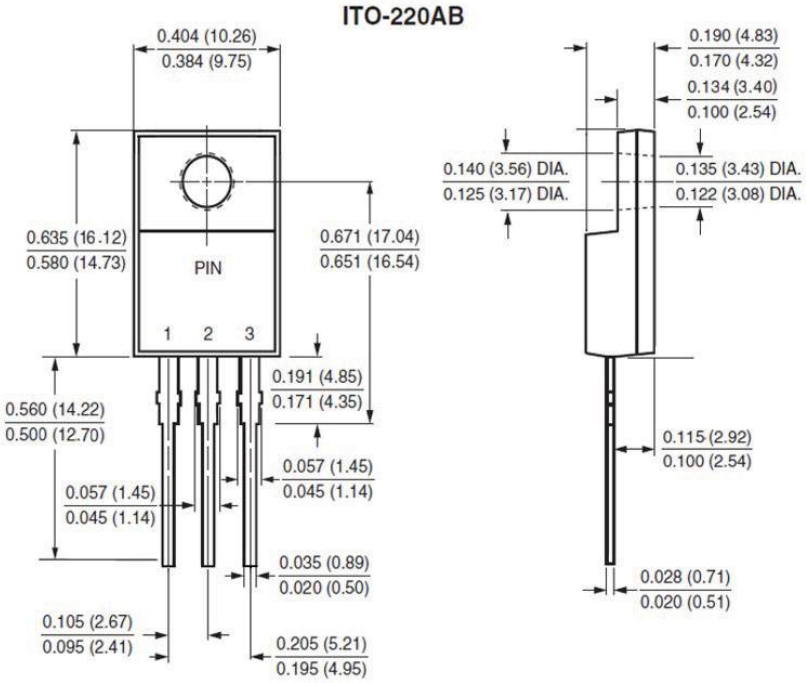



Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode


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





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