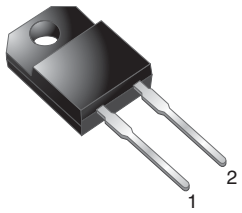
# Trench MOS Barrier Schottky Rectifier

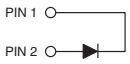
Ultra Low $V_F$ = 0.50 V at $I_F$ = 5 A

TMBS®

ITO-220AC




VFT760




## FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder bath temperature 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 DC/DC converters, switching power supplies, freewheeling diodes, OR-ing diode, and reverse battery protection.

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 7.5 A |
| $V_{RRM}$ | 60 V |
| $I_{FSM}$ | 100 A |
| $V_F$ at $I_F$ = 7.5 A | 0.60 V |
| $T_J$ max. | 150 °C |
| Package | ITO-220AC |
| Circuit configuration | Single |

## MECHANICAL DATA

**Case:** ITO-220AC
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** | **VFT760** | **UNIT** |
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 60 | V |
| Maximum average forward rectified current (fig. 1) | $I_{F(AV)}$ | 7.5 | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 100 | A |
| Voltage rate of change (rated $V_R$) | dV/dt | 10 000 | V/µs |
| Isolation voltage from termal to heatsink t = 1 min | $V_{AC}$ | 1500 | V |
| Operating junction and storage temperature range | $T_J$, $T_{STG}$ | -55 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 | $I_F$ = 5 A | $T_A$ = 25 °C | $V_F$ (1) | 0.58 | - | V |
| | $I_F$ = 7.5 A | | | 0.67 | 0.80 | |
| | $I_F$ = 5 A | $T_A$ = 125 °C | | 0.50 | - | |
| | $I_F$ = 7.5 A | | | 0.60 | 0.72 | |
| Reverse current | $V_R$ = 60 V | $T_A$ = 25 °C | $I_R$ (2) | - | 700 | µA |
| | | $T_A$ = 125 °C | | 6.6 | 25 | 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** | **VFT760** | **UNIT** |
| Typical thermal resistance | $R_{\theta JC}$ | 6.5 | °C/W |

| **ORDERING INFORMATION** (Example) | | | | | |
|---|---|---|---|---|---|
| **PACKAGE** | **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| ITO-220AC | VFT760-M3/4W | 1.68 | 4W | 50/tube | Tube |

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

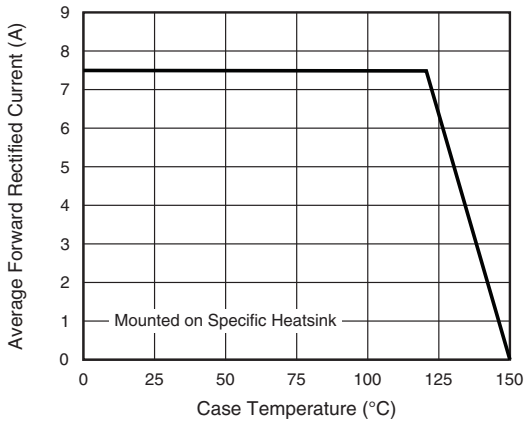



Fig. 1 - Maximum Forward Current Derating Curve

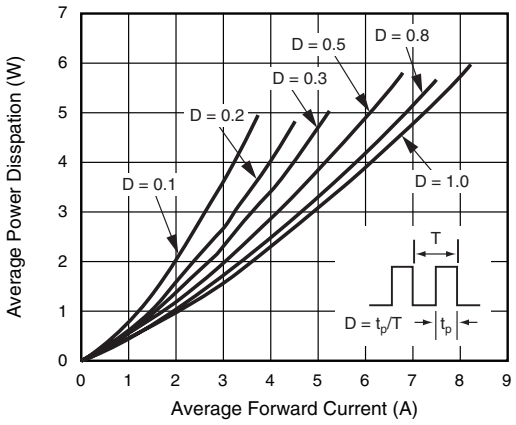



Fig. 2 - Forward Power Dissipation Characteristics


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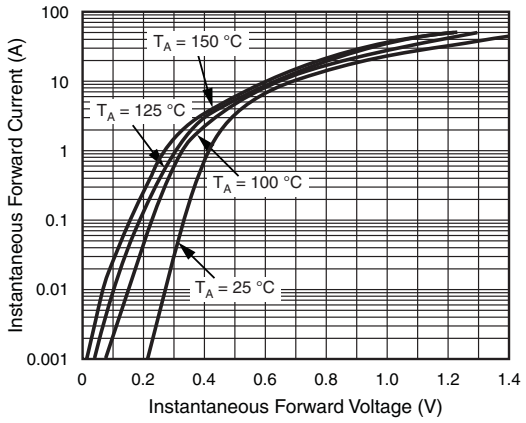



Fig. 3 - Typical Instantaneous Forward Characteristics

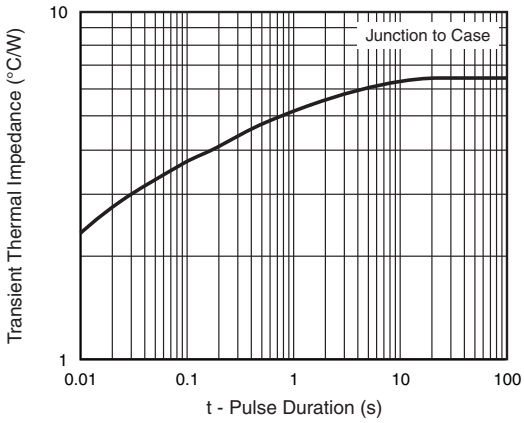



Fig. 5 - Typical Transient Thermal Impedance

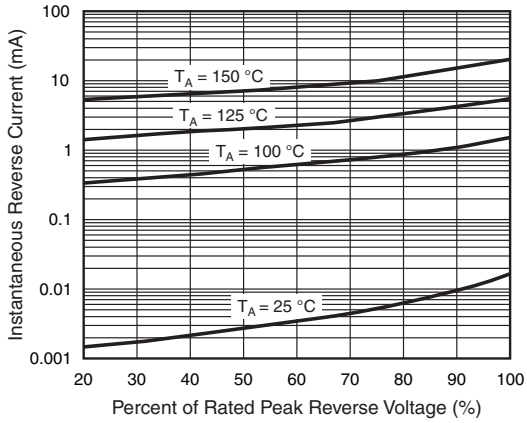



Fig. 4 - Typical Reverse Characteristics

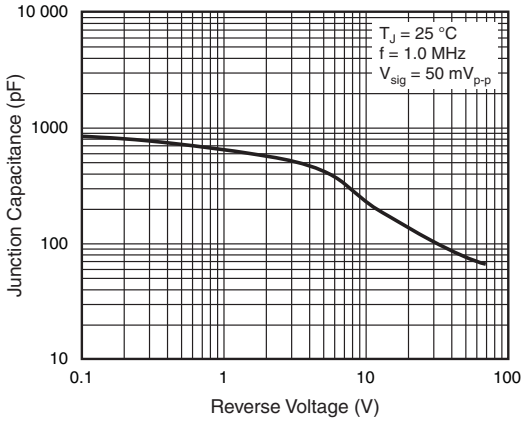
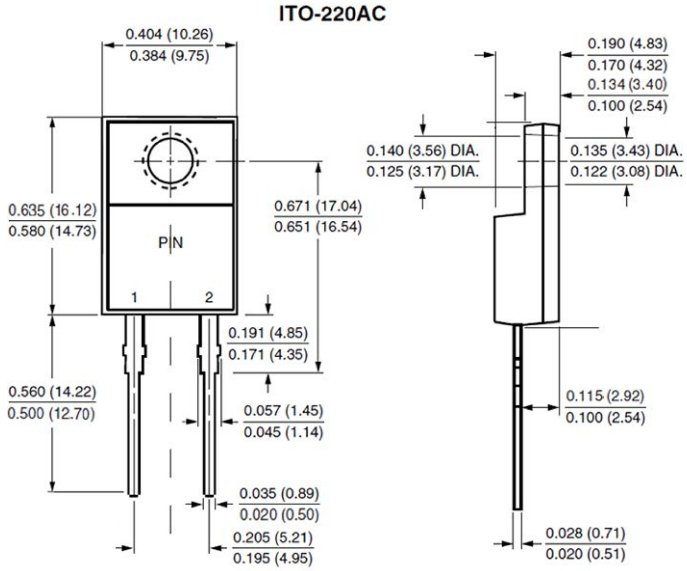



Fig. 6 - Typical Junction Capacitance

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





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