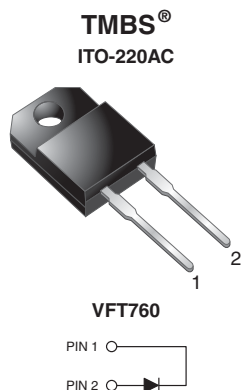


# Trench MOS Barrier Schottky Rectifier

Ultra Low  $V_F = 0.50\text{ V}$  at  $I_F = 5\text{ A}$



## 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](http://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 $I_F = 7.5\text{ A}$ | 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 ( $T_A = 25\text{ °C}$ 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/ $\mu$ s |
| Isolation voltage from terminal to heatsink $t = 1\text{ min}$                     | $V_{AC}$       | 1500        | V          |
| Operating junction and storage temperature range                                   | $T_J, T_{STG}$ | -55 to +150 | °C         |

| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                        |                         |                               |      |      |      |
|----------------------------------------------------------------------------|------------------------|-------------------------|-------------------------------|------|------|------|
| PARAMETER                                                                  | TEST CONDITIONS        |                         | SYMBOL                        | TYP. | MAX. | UNIT |
| Instantaneous forward voltage                                              | I <sub>F</sub> = 5 A   | T <sub>A</sub> = 25 °C  | V <sub>F</sub> <sup>(1)</sup> | 0.58 | -    | V    |
|                                                                            | I <sub>F</sub> = 7.5 A |                         |                               | 0.67 | 0.80 |      |
|                                                                            | I <sub>F</sub> = 5 A   | T <sub>A</sub> = 125 °C |                               | 0.50 | -    |      |
|                                                                            | I <sub>F</sub> = 7.5 A |                         |                               | 0.60 | 0.72 |      |
| Reverse current                                                            | V <sub>R</sub> = 60 V  | T <sub>A</sub> = 25 °C  | I <sub>R</sub> <sup>(2)</sup> | -    | 700  | μA   |
|                                                                            |                        | T <sub>A</sub> = 125 °C |                               | 6.6  | 25   | mA   |

**Notes**

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

(2) Pulse test: Pulse width  $\leq 40\text{ ms}$ 

| <b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted) |                       |        |                      |
|---------------------------------------------------------------------------------------------|-----------------------|--------|----------------------|
| PARAMETER                                                                                   | SYMBOL                | VFT760 | UNIT                 |
| Typical thermal resistance                                                                  | $R_{\theta\text{JC}}$ | 6.5    | $^{\circ}\text{C/W}$ |

| <b>ORDERING INFORMATION</b> (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          |

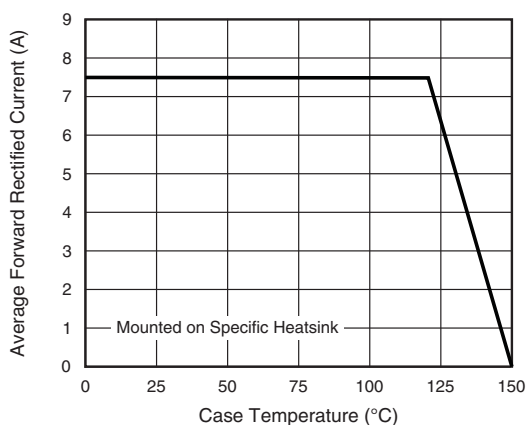
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

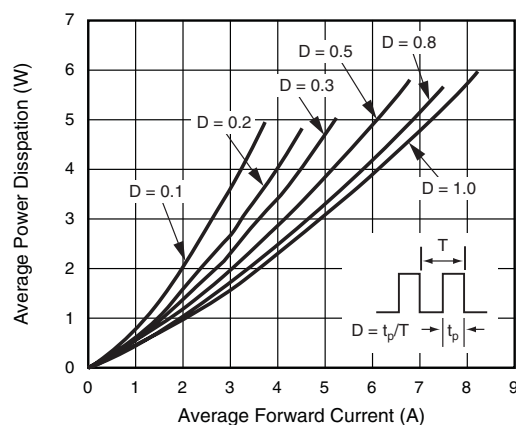


Fig. 2 - Forward Power Dissipation Characteristics

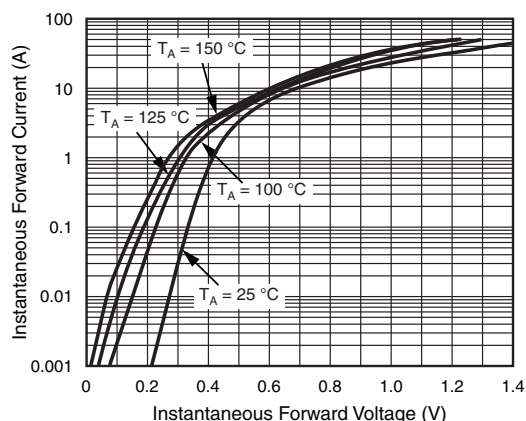


Fig. 3 - Typical Instantaneous Forward Characteristics

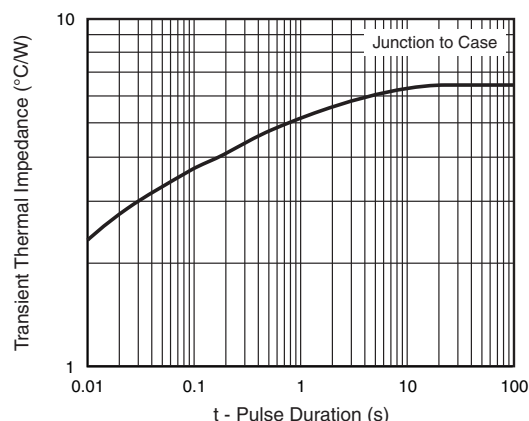


Fig. 5 - Typical Transient Thermal Impedance

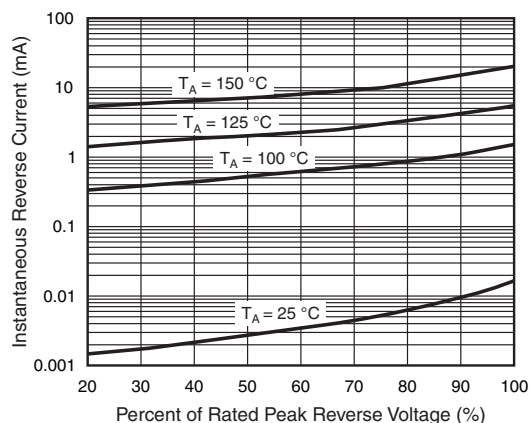


Fig. 4 - Typical Reverse Characteristics

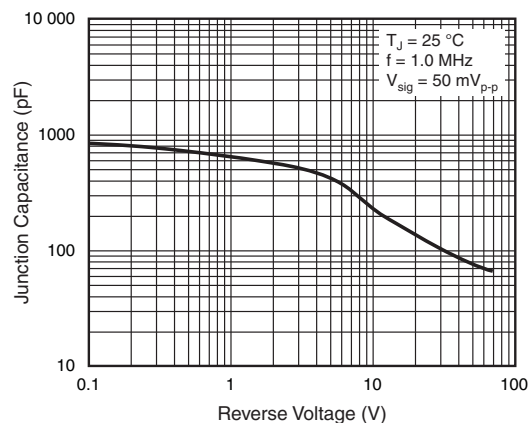
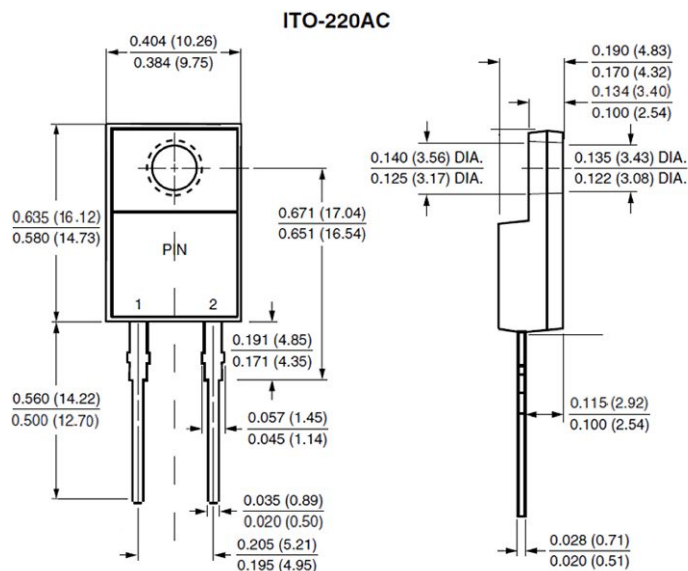


Fig. 6 - Typical Junction Capacitance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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