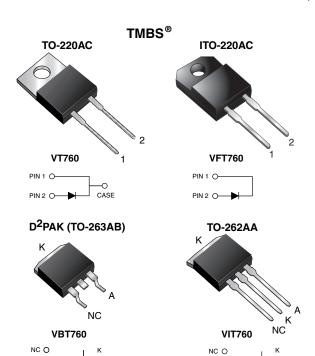


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# **Trench MOS Barrier Schottky Rectifier**

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



### **LINKS TO ADDITIONAL RESOURCES**



PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	7.5 A					
V <sub>RRM</sub>	60 V					
I <sub>FSM</sub>	100 A					
$V_F$ at $I_F = 7.5 A$	0.60 V					
T <sub>J</sub> max.	150 °C					
Package	TO-220AC, ITO-220AC, D <sup>2</sup> PAK (TO-263AB), TO-262AA					
Circuit configuration	Single					

#### **FEATURES**





- · Low forward voltage drop, low power losses
- · High efficiency operation

- m Polic
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for D<sup>2</sup>PAK (TO-263AB) package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AC, ITO-220AC and TO-262AA package)
- Material categorization: for definitions of compliance please see <a href="https://www.vishav.com/doc?99912">www.vishav.com/doc?99912</a>

#### **TYPICAL APPLICATIONS**

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

### **MECHANICAL DATA**

**Case:** TO-220AC, ITO-220AC, D<sup>2</sup>PAK (TO-263AB), and TO-262AA

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL VT760 VFT760 VBT760 VIT760				UNIT		
Maximum repetitive peak reverse voltage	$V_{RRM}$	60			V		
Maximum average forward rectified current (fig. 1)	I <sub>F(AV)</sub>	7.5			Α		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	100			А		
Non-repetitive avalanche energy at T <sub>J</sub> = 25 °C, L = 60 mH	E <sub>AS</sub>	65		mJ			
Peak repetitive reverse current at $t_p$ = 2 $\mu$ s, 1 kHz, $T_J$ = 38 °C $\pm$ 2 °C	I <sub>RRM</sub>	1.0		Α			
Isolation voltage (ITO-220AB only) from terminal to heat sink t = 1 min	$V_{AC}$	1500		V			
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150		°C			

HEATSINK



# VT760-E3, VFT760-E3, VBT760-E3, VIT760-E3

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CO	TEST CONDITIONS		TYP.	MAX.	UNIT		
Breakdown voltage	I <sub>R</sub> = 1.0 mA	T <sub>A</sub> = 25 °C	V <sub>BR</sub>	60 (minimum)	-	V		
Instantaneous forward voltage (1)	I <sub>F</sub> = 5 A I <sub>F</sub> = 7.5 A	T <sub>A</sub> = 25 °C	V <sub>F</sub>	0.58 0.67	- 0.80	V		
	I <sub>F</sub> = 5 A I <sub>F</sub> = 7.5 A	T <sub>A</sub> = 125 °C		0.50 0.60	- 0.72			
Reverse current (2)	V <sub>R</sub> = 60 V	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub>	- 6.6	700 25	μΑp mA		

#### Notes

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

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

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	VT760	VFT760	VFT760 VBT760 VIT760 UNIT			
Typical thermal resistance	$R_{\theta JC}$	3.5	6.5	3.5	3.5	°C/W	

ORDERING INFORMATION (Example)								
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
TO-220AC	VT760-E3/4W	1.87	4W	50/tube	Tube			
ITO-220AC	VFT760-E3/4W	1.68	4W	50/tube	Tube			
D <sup>2</sup> PAK (TO-263AB)	VBT760-E3/4W	1.39	4W	50/tube	Tube			
D <sup>2</sup> PAK (TO-263AB)	VBT760-E3/8W	1.39	8W	800/reel	Tape and reel			
TO-262AA	VIT760-E3/4W	1.45	4W	50/tube	Tube			

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## **RATINGS AND CHARACTERISTICS CURVES** (T<sub>A</sub> = 25 °C unless otherwise noted)

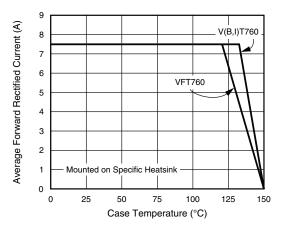
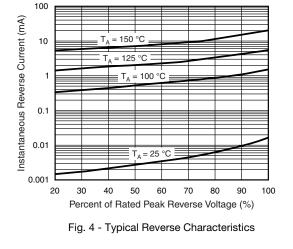


Fig. 1 - Maximum Forward Current Derating Curve



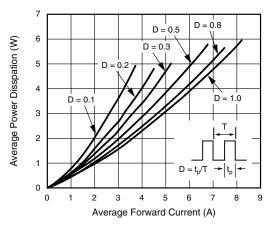


Fig. 2 - Forward Power Dissipation Characteristics

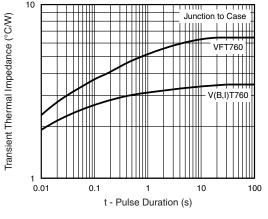


Fig. 5 - Typical Transient Thermal Impedance

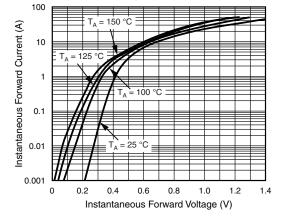


Fig. 3 - Typical Instantaneous Forward Characteristics

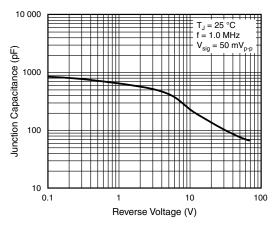


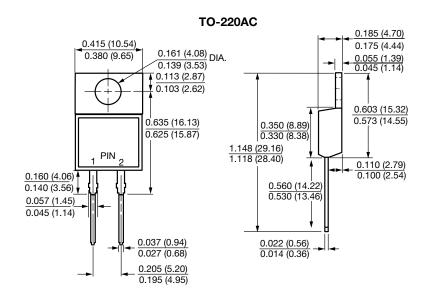
Fig. 6 - Typical Junction Capacitance

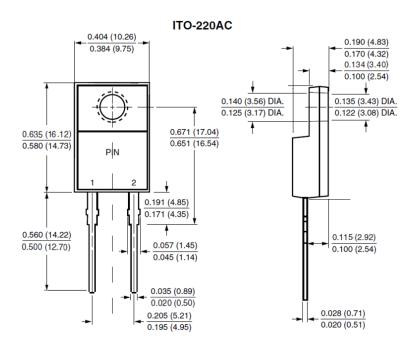


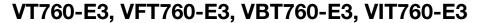
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## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



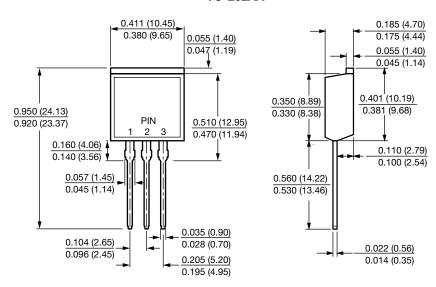


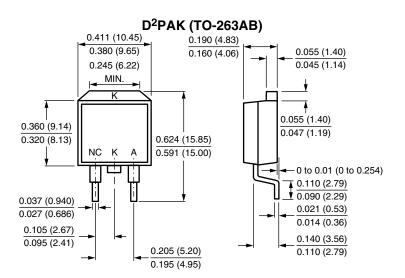


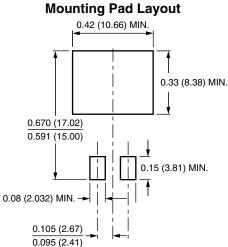


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#### **TO-262AA**









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