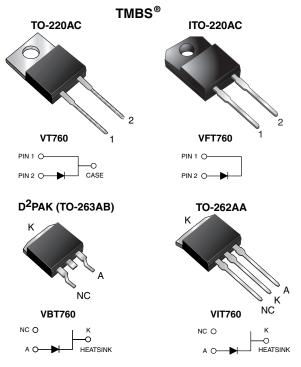
VISHAY, www.vishay.com

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

Vishay General Semiconductor

# **Trench MOS Barrier Schottky Rectifier**

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



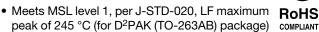
### LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	7.5 A					
V <sub>RRM</sub>	60 V					
I <sub>FSM</sub>	100 A					
V <sub>F</sub> at I <sub>F</sub> = 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

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation



- 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 <u>www.vishay.com/doc?99912</u>

### 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

<b>MAXIMUM RATINGS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	SYMBOL	VT760	VFT760	<b>VBT760</b>	<b>VIT</b> 760	UNIT	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	60			V		
Maximum average forward rectified current (fig. 1)	I <sub>F(AV)</sub>	7.5			А		
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 $T_J$ = 25 °C, L = 60 mH	E <sub>AS</sub>	65			mJ		
Peak repetitive reverse current at $t_p$ = 2 µs, 1 kHz, $T_J$ = 38 °C ± 2 °C	I <sub>RRM</sub>		1	.0		А	
Isolation voltage (ITO-220AB only) from terminal to heat sink t = 1 min	V <sub>AC</sub>	1500		V			
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>		-55 to	+150		°C	

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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25$ °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 <sup>(1)</sup>	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 <sup>(2)</sup>	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	μAp mA	

#### Notes

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

<sup>(2)</sup> Pulse test: Pulse width  $\leq$  40 ms

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	SYMBOL	VT760	VFT760	T760 VBT760 VIT760 UNIT			
Typical thermal resistance	R <sub>θJC</sub>	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			



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

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

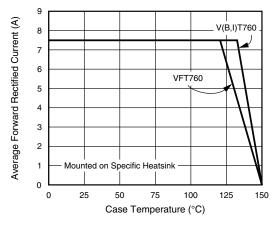


Fig. 1 - Maximum Forward Current Derating Curve

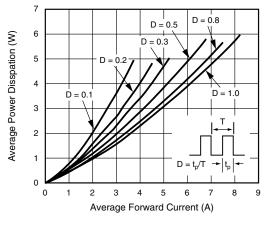


Fig. 2 - Forward Power Dissipation Characteristics

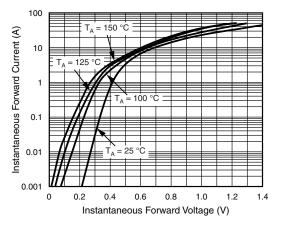


Fig. 3 - Typical Instantaneous Forward Characteristics

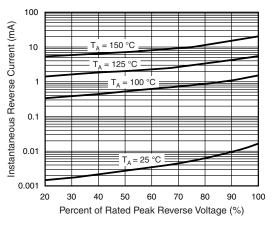


Fig. 4 - Typical Reverse Characteristics

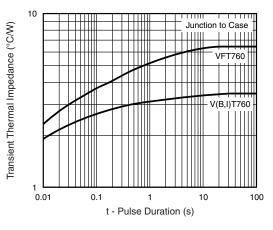


Fig. 5 - Typical Transient Thermal Impedance

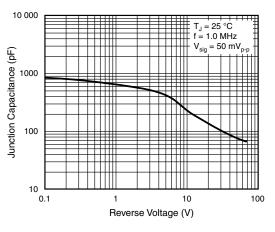


Fig. 6 - Typical Junction Capacitance

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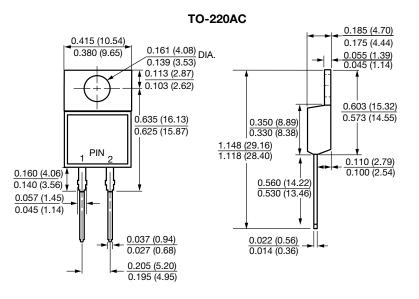
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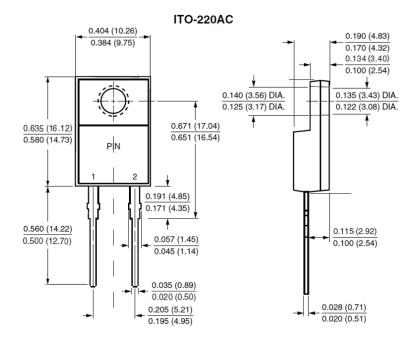
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### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)







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0.185 (4.70)

0.175 (4.44)

0.055 (1.40) 0.045 (1.14)

0.110 (2.79)

0.100 (2.54)

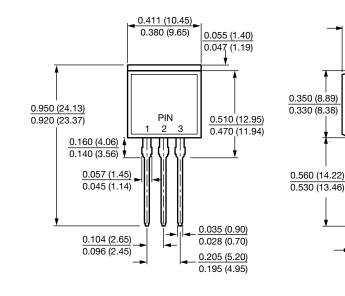
0.401 (10.19)

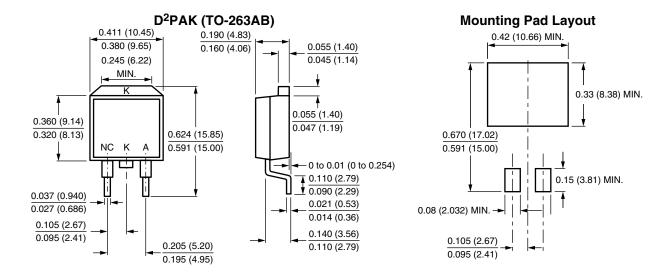
0.381 (9.68)

0.022 (0.56)

0.014 (0.35)

**TO-262AA** 







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