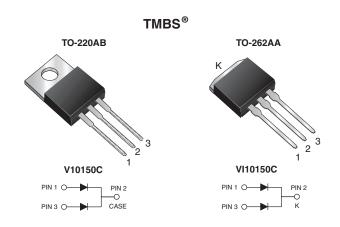


## Vishay General Semiconductor

# **Dual High Voltage Trench MOS Barrier Schottky Rectifier**

Ultra Low  $V_F = 0.63$  at  $I_F = 3$  A



PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	2 x 5.0 A				
V <sub>RRM</sub>	150 V				
I <sub>FSM</sub>	60 A				
V <sub>F</sub> at I <sub>F</sub> = 5 A	0.69 V				
T <sub>J</sub> max.	150 °C				
Package	TO-220AB, TO-262AA				
Diode variation	Common cathode				

#### **FEATURES**

- Trench MOS Schottky technology
- · Low forward voltage drop, low power losses

ROHS COMPLIANT HALOGEN

- High efficiency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see <a href="https://www.vishav.com/doc?99912"><u>www.vishav.com/doc?99912</u></a>

### TYPICAL APPLICATIONS

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

### **MECHANICAL DATA**

Case: TO-220AB and TO-262AA

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 max.

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	V10150C	VI10150C	UNIT	
Max. repetitive peak reverse voltage		$V_{RRM}$	150		V	
Max. average forward rectified current (fig. 1)	per device	- I <sub>F(AV)</sub>	10 5.0		А	
	per diode					
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I <sub>FSM</sub>	60		А	
Voltage rate of change (rated V <sub>R</sub> )		dV/dt	dt 10 000		V/µs	
Operating junction and storage temperature range		T <sub>J</sub> , T <sub>STG</sub>	-55 to	+150	°C	

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	$I_F = 3 A$	T. – 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.82	-	V	
	$I_F = 5 A$			0.99	1.41		
	$I_F = 3 A$	T <sub>A</sub> = 125 °C		0.63	-		
	$I_F = 5 A$			0.69	0.75		
Reverse current per diode		T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub> <sup>(2)</sup>	0.5	-	μΑ	
				0.5	-	mA	
	V <sub>R</sub> = 150 V	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C		-	100	μA	
		T <sub>A</sub> = 125 °C		1.0	10	mA	

#### Notes

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

(2) Pulse test: Pulse width ≤ 40 ms



# Vishay General Semiconductor

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	V10150C	VI10150C	UNIT		
Typical thermal resistance per diode	$R_{ heta JC}$	4.0		°C/W		

ORDERING INFORMATION (Example)							
PACKAGE	KAGE PREFERRED P/N UNIT WEIGHT (g) PACKAGE CODE		BASE QUANTITY	DELIVERY MODE			
TO-220AB	V10150C-M3/4W	1.87	4W	50/tube	Tube		
TO-262AA	VI10150C-M3/4W	1.45	4W	50/tube	Tube		

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

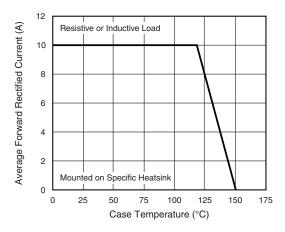


Fig. 1 - Maximum Forward Current Derating Curve

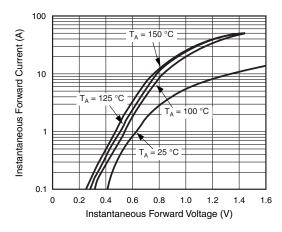


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

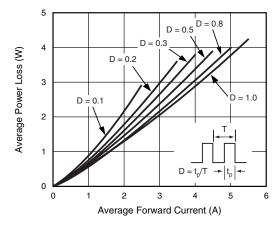


Fig. 2 - Forward Power Loss Characteristics Per Diode

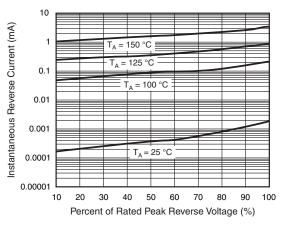


Fig. 4 - Typical Reverse Characteristics Per Diode



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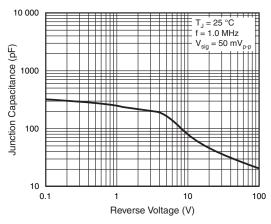


Fig. 5 - Typical Junction Capacitance Per Diode

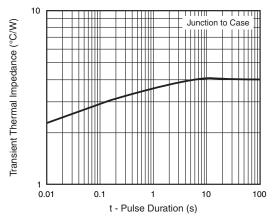
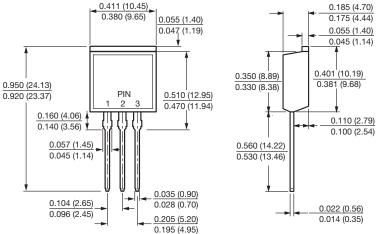


Fig. 6 - Typical Transient Thermal Impedance Per Diode

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

#### **TO-220AB** 0.415 (10.54) 0.380 (9.65) 0.185 (4.70) 0.161 (4.08) 0.175 (4.44) 0.139 (3.53) 0.055 (1.39) 0.113 (2.87) 0.045 (1.14) 0.103 (2.62) 0.603 (15.32) 0.635 (16.13) 0.573 (14.55) 0.625 (15.87) PIN 0.350 (8.89) 0.330 (8.38) 0.160 (4.06) 1.148 (29.16) 0.140 (3.56) 1.118 (28.40) 0.110 (2.79) 0.100 (2.54) 0.057 (1.45) 0.045 (1.14) 0.560 (14.22) 0.530 (13.46) 0.035 (0.90) 0.028 (0.70) 0.104 (2.65) 0.022 (0.56) 0.096 (2.45) 0.205 (5.20) 0.014 (0.36) 0.195 (4.95)

## 0.411 (10.45) 0.380 (9.65) 0.055 (1.40) 0.047 (1.19)



**TO-262AA** 



## **Legal Disclaimer Notice**

Vishay

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