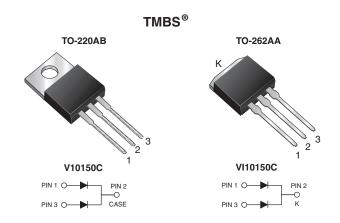


## Vishay General Semiconductor

# **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				
$V_{RRM}$	150 V				
I <sub>FSM</sub>	60 A				
$V_F$ at $I_F = 5 A$	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 • High efficiency operation HALOGEN

 Solder dip 275 °C max. 10 s, per JESD 22-B106 FREE

· Material categorization: for definitions of compliance please see www.vishav.com/doc?99912

#### 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 <sub>RRM</sub>	150		V
Max. average forward rectified current (fig. 1)	per device	- I <sub>F(AV)</sub>	10		Α
	per diode		5.0		
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	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 <sub>F</sub> = 3 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.82	-	V	
	I <sub>F</sub> = 5 A			0.99	1.41		
	I <sub>F</sub> = 3 A	T <sub>A</sub> = 125 °C		0.63	-		
	I <sub>F</sub> = 5 A			0.69	0.75		
Reverse current per diode	$V_R = 100 \text{ V}$ $T_A = 25 \text{ °C}$ $T_A = 125 \text{ °C}$		0.5	-	μA		
		T <sub>A</sub> = 125 °C	I <sub>R</sub> <sup>(2)</sup>	0.5	-	mA	
	$V_R = 150 \text{ V} $ $T_A = T_A = T_A$	T <sub>A</sub> = 25 °C		-	100	μA	
		T <sub>A</sub> = 125 °C		1.0	10	mA	

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

(2) Pulse test: Pulse width ≤ 40 ms



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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	CKAGE 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)

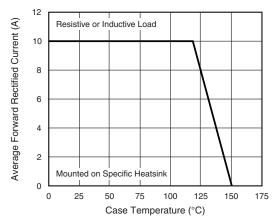


Fig. 1 - Maximum Forward Current Derating Curve

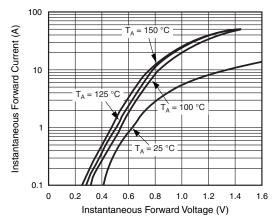


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

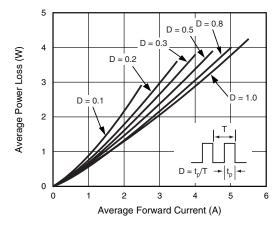


Fig. 2 - Forward Power Loss Characteristics Per Diode

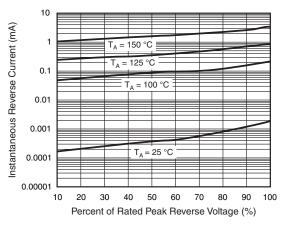


Fig. 4 - Typical Reverse Characteristics Per Diode



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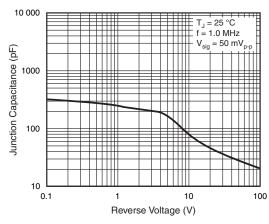


Fig. 5 - Typical Junction Capacitance Per Diode

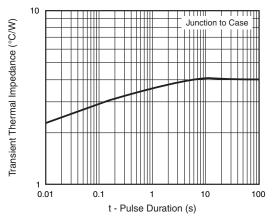
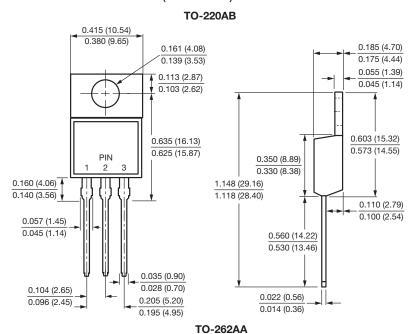
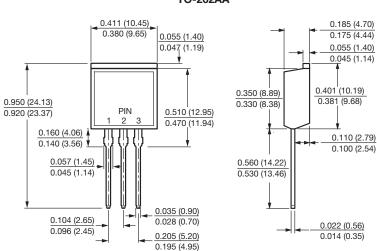


Fig. 6 - Typical Transient Thermal Impedance Per Diode

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







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