**HALOGEN** 

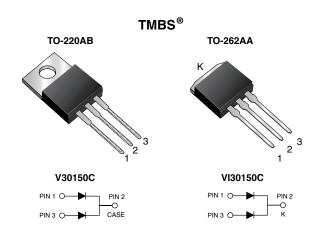
FREE



## Vishay General Semiconductor

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

Ultra Low  $V_F = 0.56 \text{ V}$  at  $I_F = 5 \text{ A}$ 



PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	2 x 15 A			
$V_{RRM}$	150 V			
I <sub>FSM</sub>	140 A			
V <sub>F</sub> at I <sub>F</sub> = 15 A	0.71 V			
T <sub>J</sub> max.	150 °C			
Package	TO-220AB, TO-262AA			
Diode variation	Dual common cathode			

#### **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
- AEC-Q101 qualified
- · Material categorization: for definitions of compliance please see www.vishay.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

Base P/NHM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable

J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix

meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	V30150C	VI30150C	UNIT	
Maximum repetitive peak reverse voltage		$V_{RRM}$	150		V	
Maximum average forward rectified current (fig. 1)	per device	1	30		А	
	per diode	I <sub>F(AV)</sub>	15			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I <sub>FSM</sub>	140		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	



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<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> = 5 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.72	-	V	
	I <sub>F</sub> = 7.5 A			0.81	-		
	I <sub>F</sub> = 15 A			1.11	1.36		
	I <sub>F</sub> = 5 A	T <sub>A</sub> = 125 °C		0.56	-		
	I <sub>F</sub> = 7.5 A			0.61	-		
	I <sub>F</sub> = 15 A			0.71	0.79		
Reverse current per diode	V <sub>R</sub> = 100 V	T <sub>A</sub> = 25 °C	I <sub>R</sub> (2)	1.5	-	μA	
		T <sub>A</sub> = 125 °C		2	-	mA	
	V <sub>R</sub> = 150 V	T <sub>A</sub> = 25 °C		-	200	μΑ	
		T <sub>A</sub> = 125 °C		4	20	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	V30150C	VI30150C	UNIT	
Typical thermal resistance per diode	$R_{ heta JC}$	2.2		°C/W	

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
TO-220AB	V30150C-M3/4W	1.89	4W	50/tube	Tube	
TO-262AA	VI30150C-M3/4W	1.46	4W	50/tube	Tube	
TO-220AB	V30150CHM3/4W (1)	1.89	4W	50/tube	Tube	
TO-262AA	VI30150CHM3/4W (1)	1.46	4W	50/tube	Tube	

#### Note

(1) AEC-Q101 qualified

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

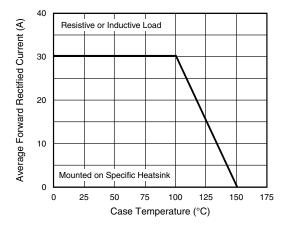


Fig. 1 - Maximum Forward Current Derating Curve

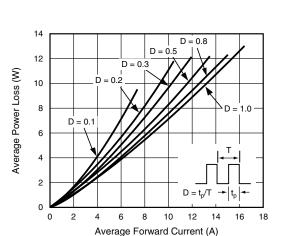


Fig. 2 - Forward Power Dissipation Characteristics

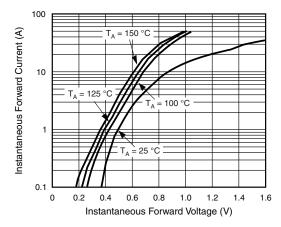


Fig. 3 - Typical Instantaneous Forward Characteristics

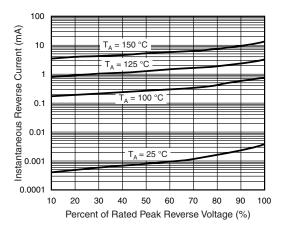


Fig. 4 - Typical Reverse Characteristics

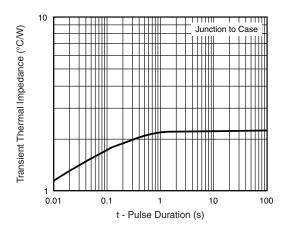


Fig. 5 - Typical Transient Thermal Impedance

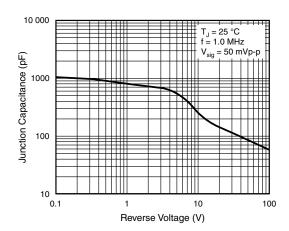


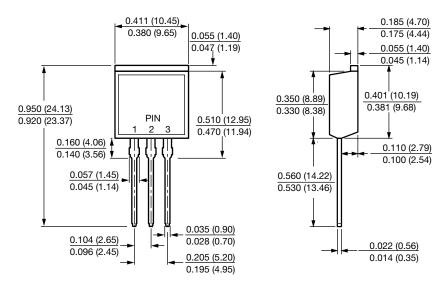
Fig. 6 - Typical Junction Capacitance

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### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### **TO-220AB** 0.415 (10.54) 0.380 (9.65) 0.185 (4.70) 0.161 (4.08) 0.139 (3.53) 0.175 (4.44) 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) 2 0.330 (8.38) 1.148 (29.16) 0.160 (4.06) 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)

### **TO-262AA**





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