

## Vishay General Semiconductor

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

Ultra Low  $V_F = 0.63 \text{ V}$  at  $I_F = 3 \text{ A}$ 



PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	2 x 5.0 A			
$V_{RRM}$	150 V			
I <sub>FSM</sub>	60 A			
V <sub>F</sub> at I <sub>F</sub> = 5.0 A	0.69 V			
T <sub>J</sub> max.	150 °C			
Package	ITO-220AB			
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



 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: ITO-220AB

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

Wile Carrix Friedric GEGB Ear Glade 17 Willow

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	VF10150C	UNIT	
Maximum repetitive peak reverse voltage		$V_{RRM}$	150	V	
Maximum 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		I <sub>FSM</sub>	60	А	
Voltage rating of change (rated V <sub>R</sub> )		dV/dt	10 000	V/µs	
Isolation voltage from thermal to heatsink 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	



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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> = 3 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.82	-	V		
	$I_F = 5 A$			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 <sub>R</sub> = 100 V	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	0.5	-	μA		
		T <sub>A</sub> = 125 °C		0.5	-	mA		
	V <sub>R</sub> = 150 V	T <sub>A</sub> = 25 °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

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	VF10150C	UNIT	
Typical thermal resistance per diode	$R_{\theta JC}$	6.5	°C/W	

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g) PACKAGE CODE BASE QUANTITY DELIVE			DELIVERY MODE		
ITO-220AB	VF10150C-M3/4W	1.74	4W	50/tube	Tube		

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

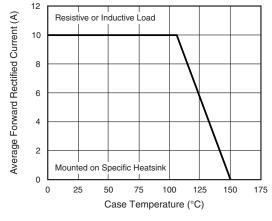


Fig. 1 - Maximum Forward Current Derating Curve

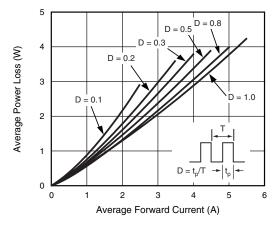


Fig. 2 - Forward Power Loss Characteristics Per Diode



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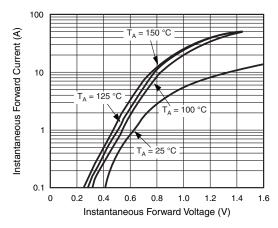


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

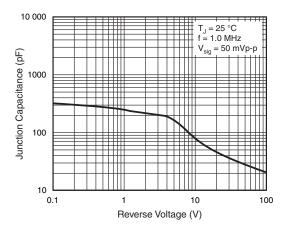


Fig. 5 - Typical Junction Capacitance Per Diode

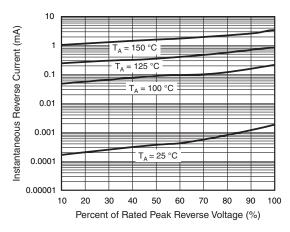


Fig. 4 - Typical Reverse Characteristics Per Diode

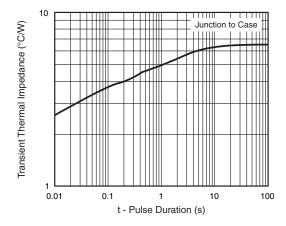
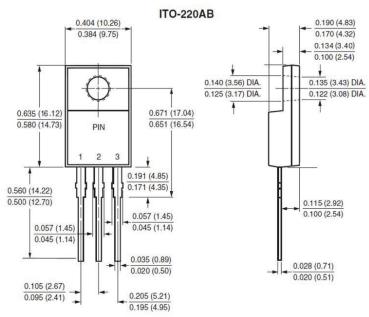


Fig. 6 - Typical Transient Thermal Impedance Per Diode

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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