# Vishay General Semiconductor

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

Ultra Low  $V_F = 0.40$  V at  $I_F = 5$  A



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PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	2 x 10 A			
V <sub>RRM</sub>	60 V			
I <sub>FSM</sub>	150 A			
$V_F$ at $I_F$ = 10 A	0.52 V			
T <sub>J</sub> max.	150 °C			
Package	ITO-220AB			
Circuit configuration	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 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: 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

#### Polarity: as marked

Mounting Torque: 10 in-lbs maximum

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	VFT2060C	UNIT	
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	60	V	
Maximum average forward rectified current (fig. 1)	per device	I <sub>F(AV)</sub>	20	^	
	per diode		10	A	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I <sub>FSM</sub>	150	А	
Voltage rate of change (rated V <sub>R</sub> )		dV/dt	10 000	V/µs	
Isolation voltage from terminal to heatsink 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	



COMPLIANT

HALOGEN

FREE

### VFT2060C





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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25$ °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	I <sub>F</sub> = 5.0 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.49	-	V	
	I <sub>F</sub> = 10 A			0.57	0.65		
	I <sub>F</sub> = 5.0 A	T <sub>A</sub> = 125 °C		0.40	-		
	I <sub>F</sub> = 10 A			0.52	0.59		
Reverse current per diode		T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	-	850	μA	
		T <sub>A</sub> = 125 °C		14	40	mA	

Notes

<sup>(1)</sup> Pulse test: 300 µs 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	VFT2060C	UNIT	
Typical thermal resistance	per diode	R <sub>θJC</sub>	6.0	°C/W	
	per device		4.8	C/W	

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
ITO-220AB	VFT2060C-M3/4W	1.76	4W	50/tube	Tube	

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

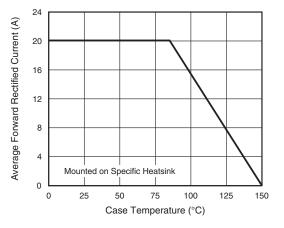


Fig. 1 - Maximum Forward Current Derating Curve

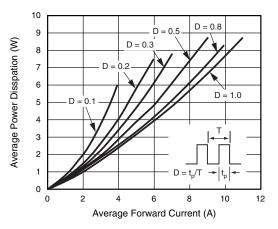
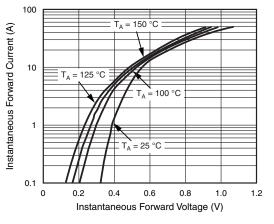


Fig. 2 - Forward Power Dissipation Characteristics

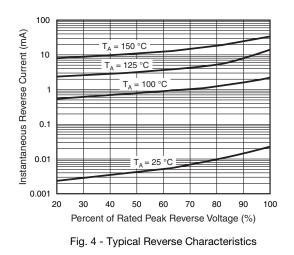
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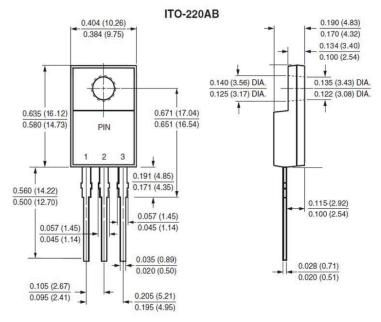
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Fig. 3 - Typical Instantaneous Forward Characteristics







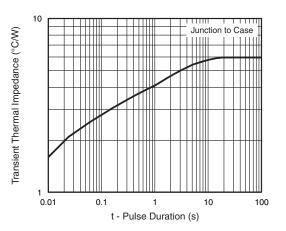


Fig. 5 - Typical Transient Thermal Impedance

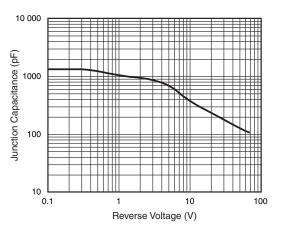


Fig. 6 - Typical Junction Capacitance

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