



Vishay General Semiconductor

Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.52 \text{ V}$ at $I_F = 5 \text{ A}$





PRIMARY CHARACTERISTICS			
I _{F(AV)}	10 A		
V _{RRM}	80 V		
I _{FSM}	100 A		
V _F at I _F = 10 A	0.60 V		
T _J max.	150 °C		

FEATURES

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

• High efficiency operation

COMPLIANT HALOGEN

- Solder bath temperature 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition

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

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	VFT1080S	UNIT		
Maximum repetitive peak reverse voltage	V_{RRM}	80	V		
Maximum average forward rectified current (fig. 1)	I _{F(AV)}	10	А		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	100	А		
Voltage rate of change (rated V _R)	dV/dt	10 000	V/µs		
Isolation voltage from termal to heatsink t = 1 min	V _{AC}	1500	V		
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to + 150	°C		

VFT1080S

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I _F = 5 A	T _A = 25 °C	V _F ⁽¹⁾	0.57	-	- V
	I _F = 10 A			0.67	0.81	
	I _F = 5 A	T _A = 125 °C		0.52	-	
	I _F = 10 A			0.60	0.70	
Reverse current	V _R = 80 V	T _A = 25 °C	I _R ⁽²⁾	20	600	μΑ
		T _A = 125 °C		10	20	mA

Notes

 $^{(1)}$ Pulse test: 300 μ s pulse width, 1 % duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER SYMBOL VFT1080S				
Typical thermal resistance	$R_{\theta JC}$	5.5	°C/W	

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
ITO-220AB	VFT1080S-M3/4W	1.73	4W	50/tube	Tube	

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

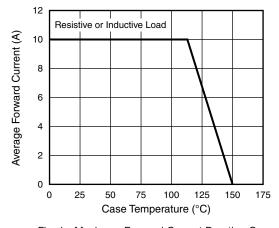


Fig. 1 - Maximum Forward Current Derating Curve

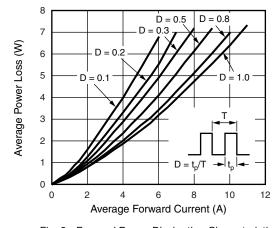


Fig. 2 - Forward Power Dissipation Characteristics



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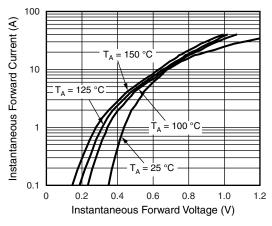


Fig. 3 - Typical Instantaneous Forward Characteristics

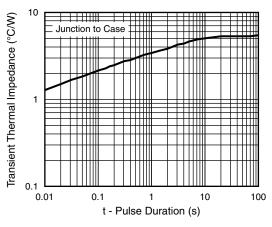


Fig. 5 - Typical Transient Thermal Impedance

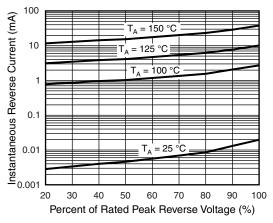


Fig. 4 - Typical Reverse Characteristics

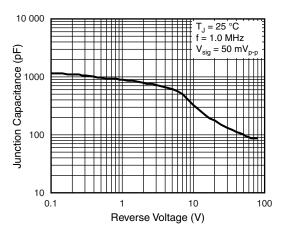
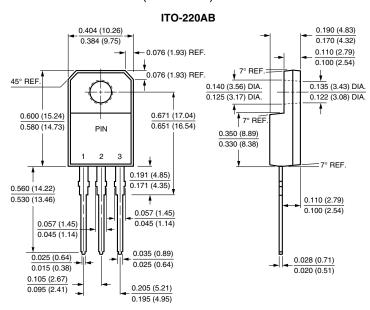


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)







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