

Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.46$ V at $I_F = 5$ A



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



RoHS
COMPLIANT
HALOGEN
FREE

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	20 A
V_{RRM}	80 V
I_{FSM}	150 A
V_F at $I_F = 20$ A	0.70 V
T_J max.	150 °C
Package	ITO-220AB
Diode variation	Single die

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	VFT2080S	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	80	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	20	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	150	A
Voltage rate of change (rated V_R)	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_J, T_{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	$I_F = 5 \text{ A}$	$T_A = 25^\circ\text{C}$	0.52	-	V
	$I_F = 10 \text{ A}$		0.61	-	
	$I_F = 20 \text{ A}$		0.80	0.92	
	$I_F = 5 \text{ A}$	$T_A = 125^\circ\text{C}$	0.46	-	
	$I_F = 10 \text{ A}$		0.54	-	
	$I_F = 20 \text{ A}$		0.70	0.78	
Reverse current	$V_R = 80 \text{ V}$	$T_A = 25^\circ\text{C}$	30	700	μA
		$T_A = 125^\circ\text{C}$	20	35	mA

Notes

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

(2) Pulse test: Pulse width $\leq 40 \text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	VFT2080S			UNIT
Typical thermal resistance	$R_{\theta\text{JC}}$	5.0			$^\circ\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
ITO-220AB	VFT2080S-M3/4W	1.75	4W	50/tube	Tube

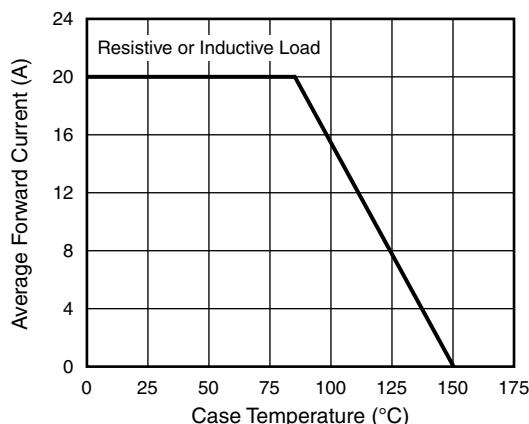
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

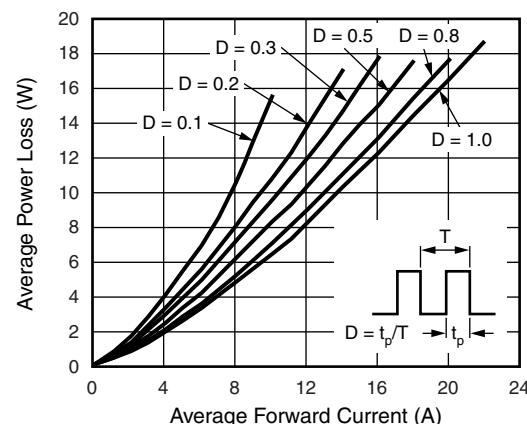
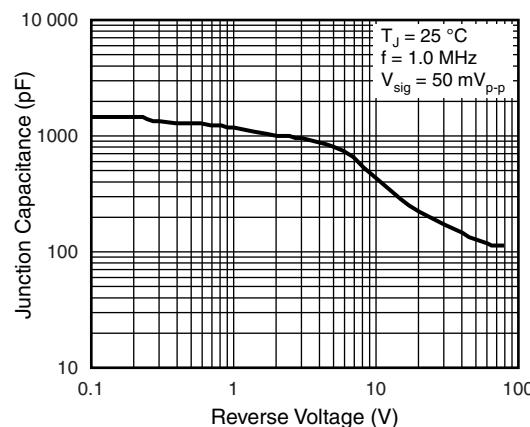
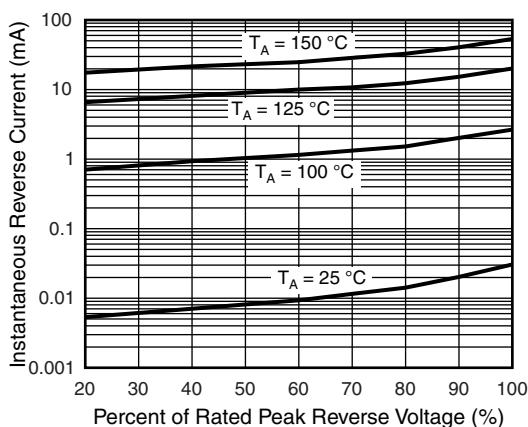
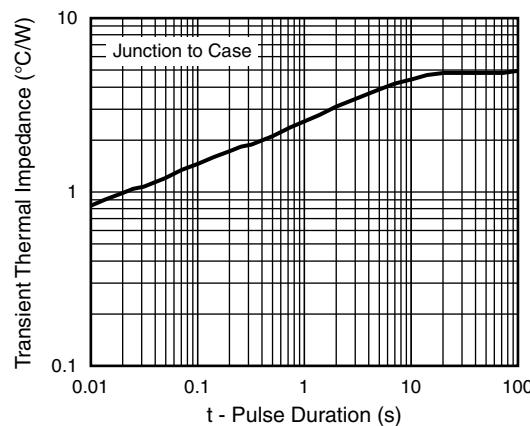
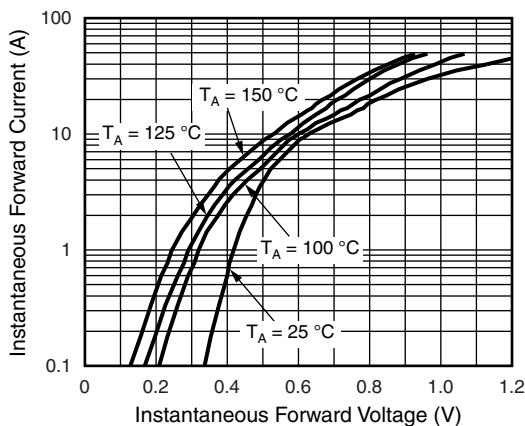
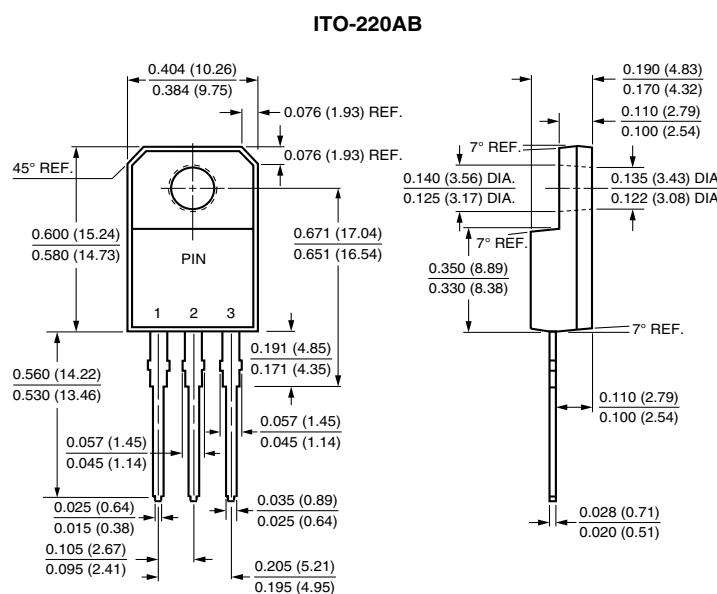


Fig. 2 - Forward Power Dissipation Characteristics



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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