VFT3080C

Vishay General Semiconductor

Dual Trench MOS Barrier Schottky Rectifier

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

TMBS[®] ITO-220AB



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VFT3080C

PIN 1 O PIN 2

PRIMARY CHARACTERISTICS				
I _{F(AV)}	2 x 15 A			
V _{RRM}	80 V			
I _{FSM}	150 A			
V _F at I _F = 15 A	0.65 V			
T _J 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 <u>www.vishay.com/doc?99912</u>

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	VFT3080C	UNIT	
Maximum repetitive peak reverse voltage		V _{RRM}	80	V	
Maximum average forward rectified current (fig. 1)	per device	I _{F(AV)}	30	А	
	per diode		15	A	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I _{FSM}	150	А	
Voltage rate of change (rated V _R)		dV/dt	10 000	V/µs	
Isolation voltage from terminal to heatsink t = 1 min		V _{AC}	1500	V	
Operating junction and storage temperature range		T _J , T _{STG}	-55 to +150	°C	

(Pb) RoHS

COMPLIANT

HALOGEN

FREE



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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 25 °C	V _F (1)	0.52	-	V	
	I _F = 7.5 A			0.58	-		
	I _F = 15 A			0.75	0.82		
	I _F = 5 A	T _A = 125 °C		0.46	-		
	I _F = 7.5 A			0.52	-		
	I _F = 15 A			0.65	0.70		
Reverse current per diode	V _B = 80 V	T _A = 25 °C	I _B ⁽²⁾	30	700	μA	
	$V_{\rm R} = 80 V$ $T_{\rm A} = 125 ^{\circ}{\rm C}$	'R (=)	20	35	mA		

Notes

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

⁽²⁾ Pulse test: Pulse width \leq 40 ms

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)					
PARAMETER		SYMBOL	YMBOL VFT3080C		
Typical thermal resistance	per diode	R _{θJC}	6.0	°C/W	
	per device		5.0	0/10	

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
ITO-220AB	VFT3080C-M3/4W	1.76	4W	50/tube	Tube	

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

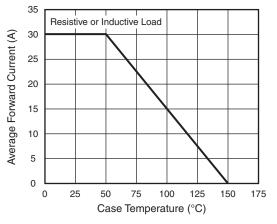


Fig. 1 - Maximum Forward Current Derating Curve

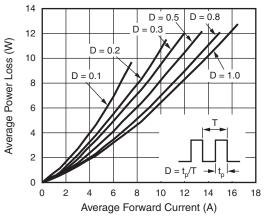
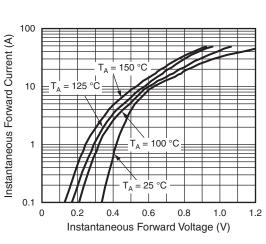


Fig. 2 - Forward Power Dissipation Characteristics

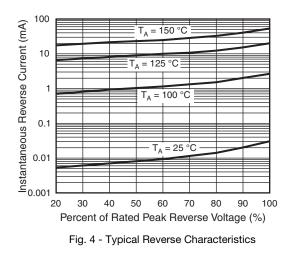
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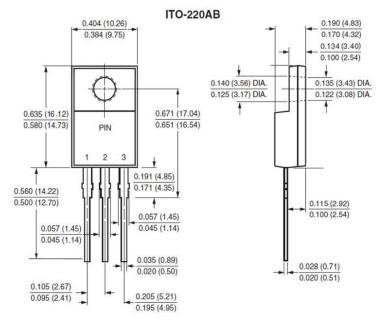
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Fig. 3 - Typical Instantaneous Forward Characteristics







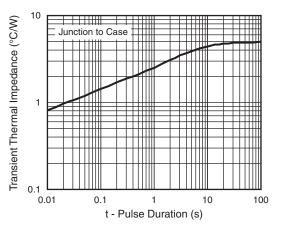


Fig. 5 - Typical Transient Thermal Impedance

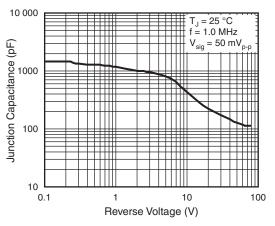


Fig. 6 - Typical Junction Capacitance

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