

Dual Trench MOS Barrier Schottky Rectifier

 Ultra Low $V_F = 0.32 \text{ V}$ at $I_F = 5.0 \text{ A}$


FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency converters, switching power supplies, freewheeling diodes, OR-ing diode, DC/DC converters, and reverse battery protection.

MECHANICAL DATA

Case: ITO-220AB

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, and commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 20 A
V_{RRM}	60 V
I_{FSM}	240 A
V_F at $I_F = 20 \text{ A}$	0.48 V
T_J max.	150 °C
Package	ITO-220AB
Circuit configuration	Common cathode

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VFT4060C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	60	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	per device	40
		per diode	20
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	240	A
Voltage rate of change (rated V_R)	dV/dt	10 000	V/ μ s
Isolation voltage from terminal to heatsink $t = 1 \text{ min}$	V_{AC}	1500	V
Operating junction and storage temperature range	T_J, T_{STG}	-40 to +150	°C

ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT			
Instantaneous forward voltage per diode	$I_F = 5.0 \text{ A}$	$V_F^{(1)}$			V			
						$T_A = 25 \text{ °C}$		-
								-
	$T_A = 125 \text{ °C}$						0.32	-
							0.39	-
							0.48	0.57
Reverse current per diode	$V_R = 60 \text{ V}$	$I_R^{(2)}$			mA			
						$T_A = 25 \text{ °C}$	-	6.0
		$T_A = 125 \text{ °C}$	34	190				

Notes

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

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



THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	VFT4060C	UNIT
Typical thermal resistance	per diode	$R_{\theta JC}$	5.0	$^\circ\text{C/W}$
	per device		3.0	

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
ITO-220AB	VFT4060C-E3/4W	1.75	4W	50/tube	Tube

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

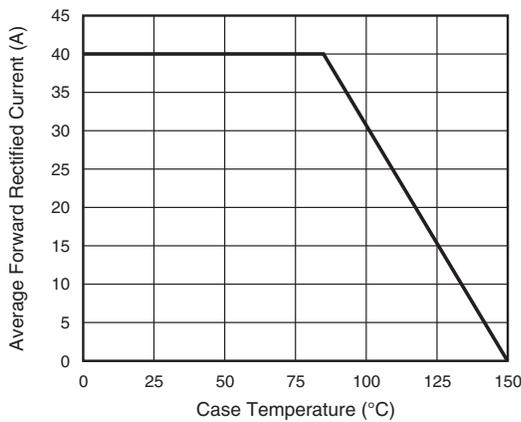


Fig. 1 - Maximum Forward Current Derating Curve

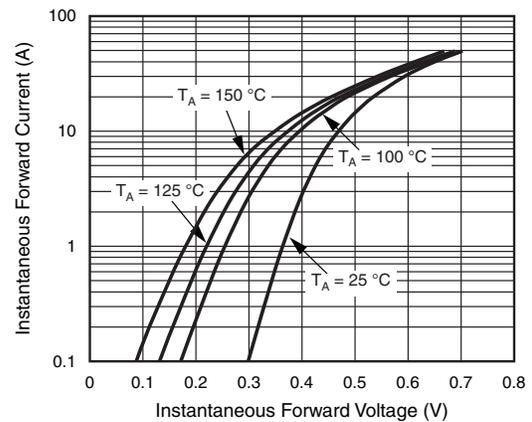


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

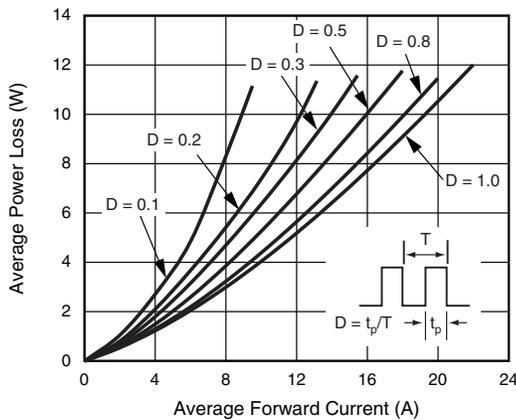


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

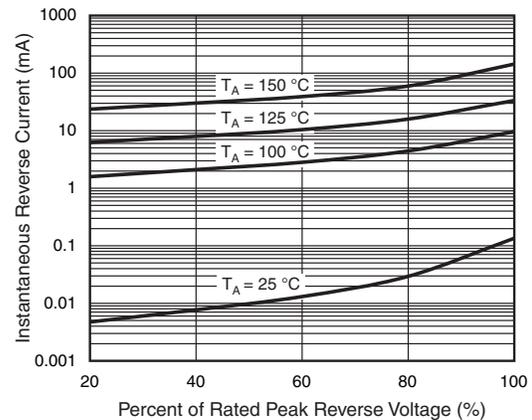


Fig. 4 - Typical Reverse Characteristics Per Diode

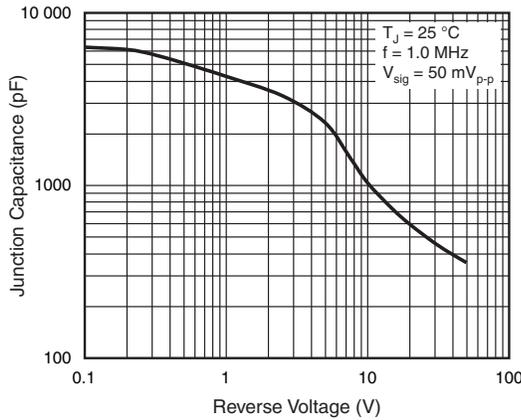


Fig. 5 - Typical Transient Thermal Impedance Per Diode

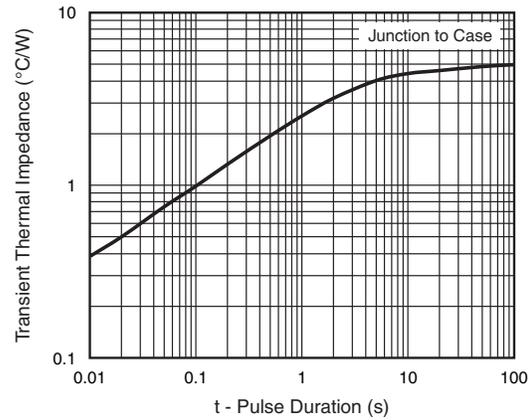
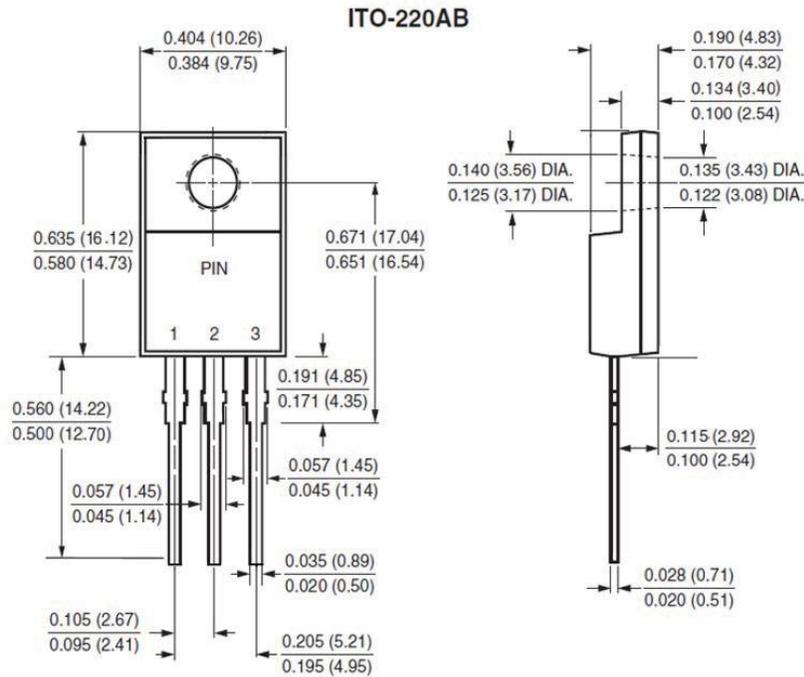


Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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