

Dual Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.32 V at I_F = 5.0 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 A	0.48 V
T_J max.	150 °C
Package	ITO-220AB
Diode variation	Dual common cathode

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VFT4060C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	60	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	40	A
per device 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_F)	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}	-40 to +150	°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	$I_F = 5.0 \text{ A}$	$T_A = 25^\circ\text{C}$	$V_F^{(1)}$	0.43	-	V	
	$I_F = 10 \text{ A}$			0.48	-		
	$I_F = 20 \text{ A}$			0.53	0.62		
	$I_F = 5.0 \text{ A}$	$T_A = 125^\circ\text{C}$		0.32	-		
	$I_F = 10 \text{ A}$			0.39	-		
	$I_F = 20 \text{ A}$			0.48	0.57		
Reverse current per diode	$V_R = 60 \text{ V}$	$T_A = 25^\circ\text{C}$	$I_R^{(2)}$	-	6.0	mA	
		$T_A = 125^\circ\text{C}$		34	190		

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	VFT4060C			UNIT
Typical thermal resistance	per diode	$R_{\theta\text{JC}}$	5.0	3.0	°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

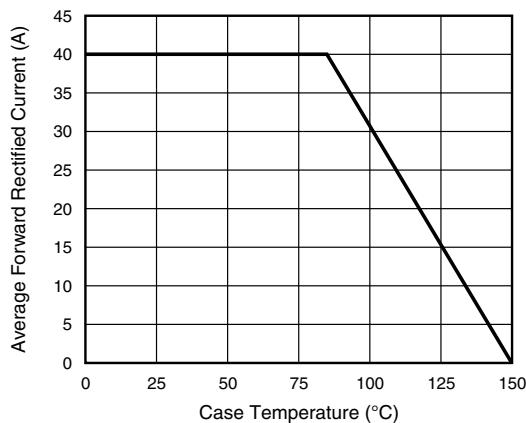
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

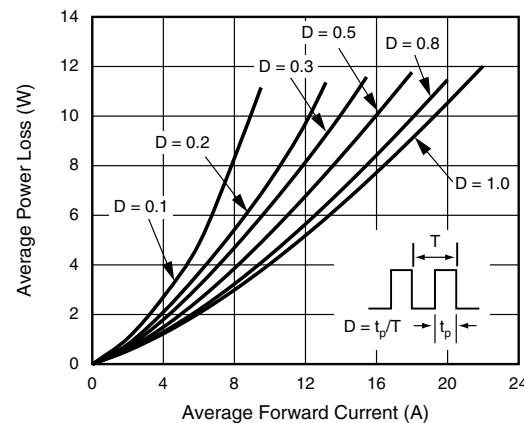


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

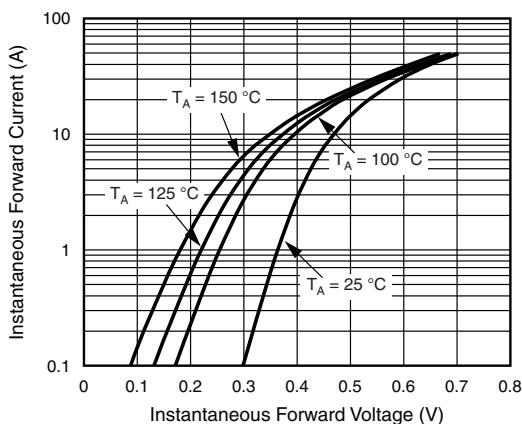


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

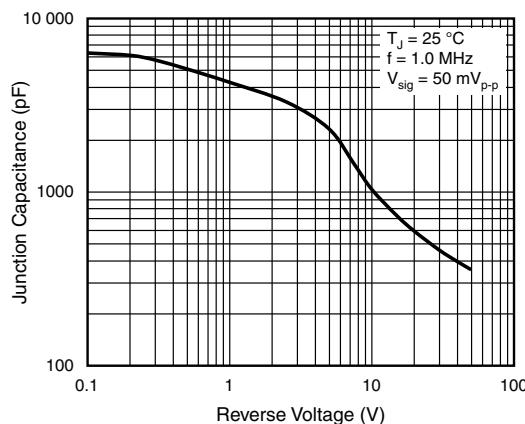


Fig. 5 - Typical Transient Thermal Impedance Per Diode

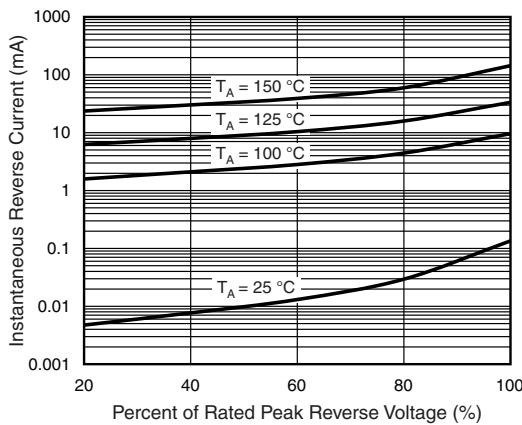


Fig. 4 - Typical Reverse Characteristics Per Diode

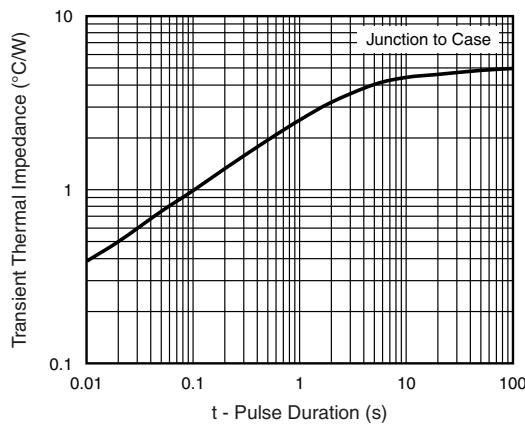
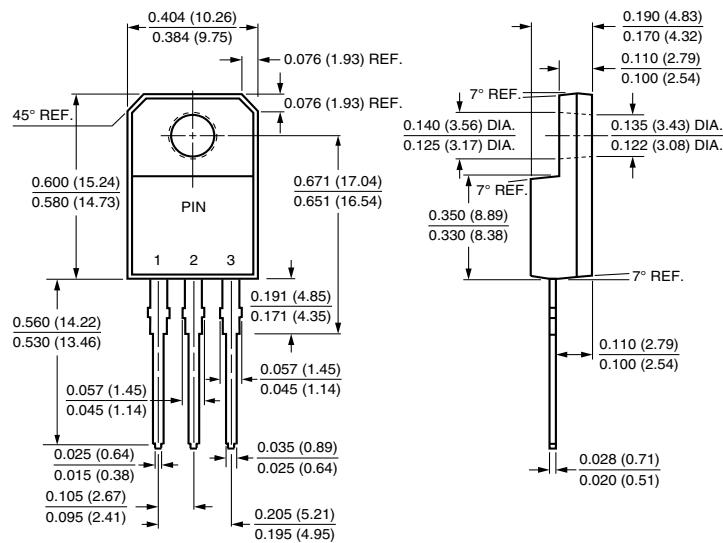


Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

ITO-220AB



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