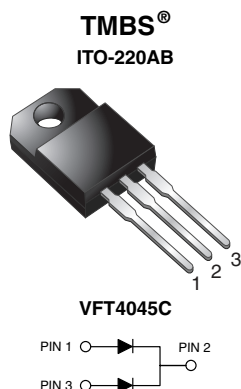




Dual Low-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.28\text{ V}$ at $I_F = 5.0\text{ A}$



FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder 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



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.

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 20 A
V_{RRM}	45 V
I_{FSM}	240 A
V_F at $I_F = 20\text{ A}$	0.41 V
T_J max.	150 °C

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 ($T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	VFT4045C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	40	A
		20	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	240	A
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

VFT4045C

Vishay General Semiconductor



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MIN.	UNIT
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 25 °C	V _F ⁽¹⁾	0.41	-	V
	I _F = 10 A			0.44	-	
	I _F = 20 A			0.50	0.58	
	I _F = 5 A	T _A = 125 °C		0.28	-	
	I _F = 10 A			0.33	-	
	I _F = 20 A			0.41	0.50	
Reverse current per diode	V _R = 45 V	T _A = 25 °C	I _R ⁽²⁾	-	3000	μA
		T _A = 125 °C		18	50	mA

Notes

(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VFT4045C	UNIT
Typical thermal resistance	$R_{\theta JC}$	per diode	5.0
		per device	3.5

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
ITO-220AB	VFT4045C-M3/4W	1.76	4W	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES

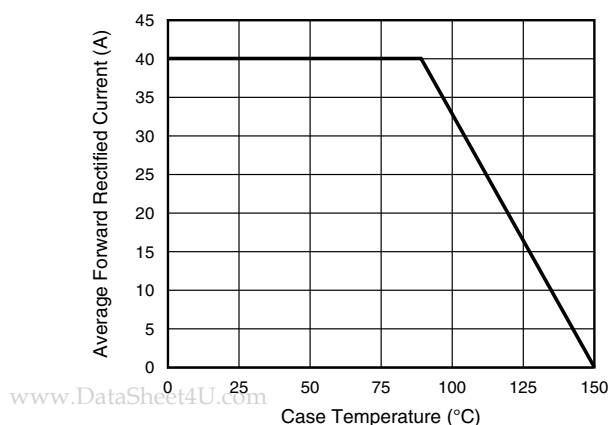
 $(T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

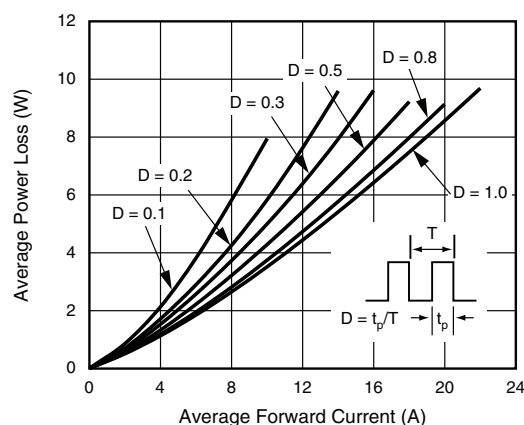


Fig. 2 - Forward Power Loss Characteristics Per Diode

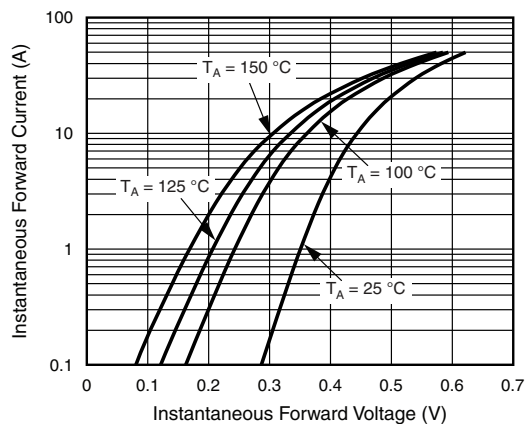


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

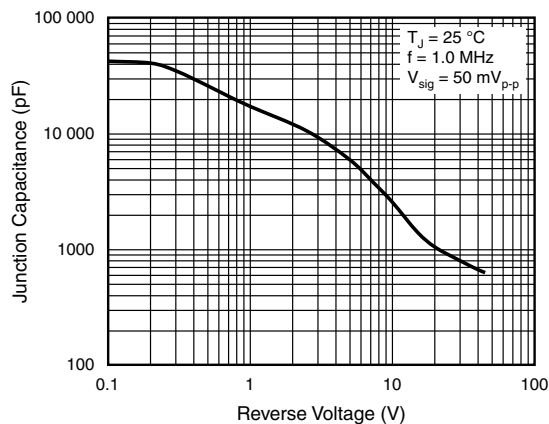


Fig. 5 - Typical Junction Capacitance Per Diode

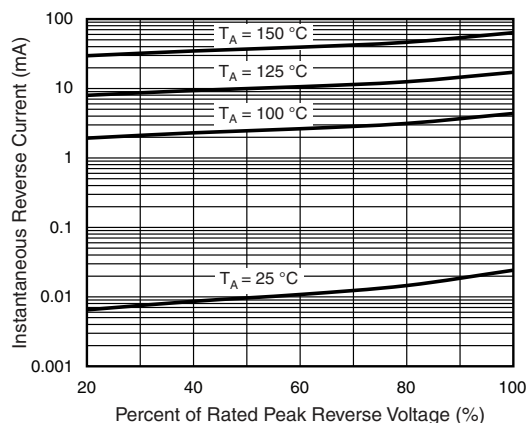


Fig. 4 - Typical Reverse Characteristics Per Diode

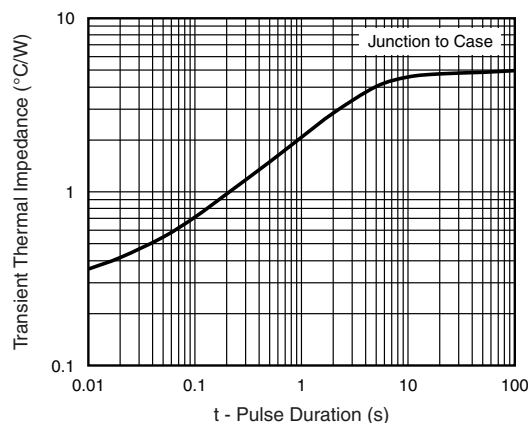
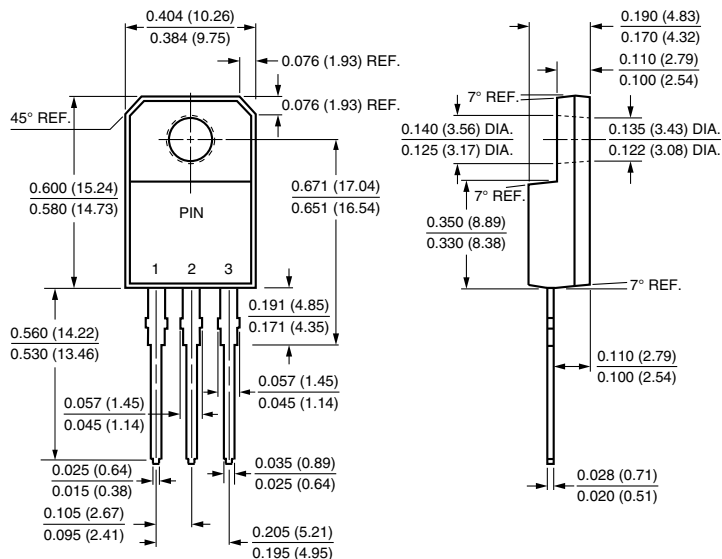


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

ITO-220AB





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