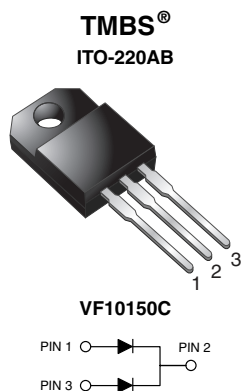


High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.63$ V at $I_F = 3$ 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.

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

$I_{F(AV)}$	2 x 5.0 A
V_{RRM}	150 V
I_{FSM}	60 A
V_F at $I_F = 5.0$ A	0.69 V
T_J max.	150 °C

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	VF10150C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	150	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	per device	10
		per diode	5.0
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	60	A
Voltage rating of change (rated V_R)	dV/dt	10 000	V/ μ s
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

VF10150C

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 = 3 A	T _A = 25 °C	V _F ⁽¹⁾	0.82	-	V
	I _F = 5 A			0.99	1.41	
	I _F = 3 A	T _A = 125 °C		0.63	-	
	I _F = 5 A			0.69	0.75	
Reverse current per diode	V _R = 100 V	T _A = 25 °C	I _R ⁽²⁾	0.5	-	μA
		T _A = 125 °C		0.5	-	mA
	V _R = 150 V	T _A = 25 °C		-	100	μA
		T _A = 125 °C		1.0	10	mA

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VF10150C	UNIT
Typical thermal resistance per diode	R _{θJC}	6.5	°C/W

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
ITO-220AB	VF10150C-M3/4W	1.74	4W	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

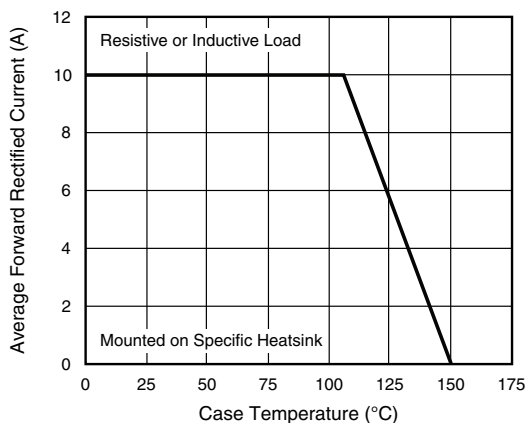


Fig. 1 - Maximum Forward Current Derating Curve

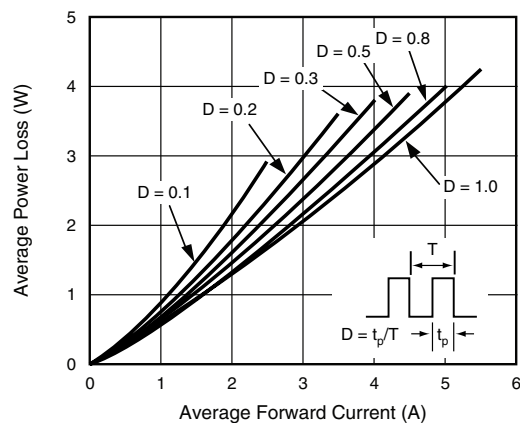


Fig. 2 - Forward Power Loss Characteristics Per Diode

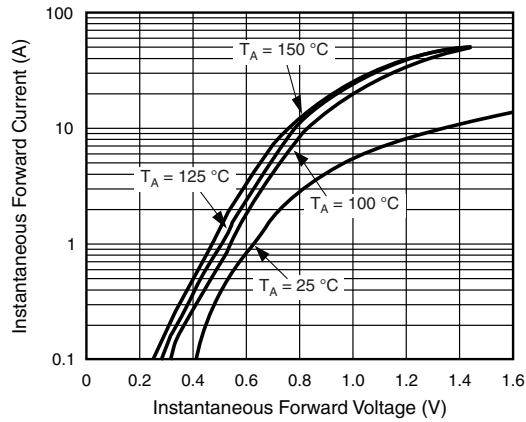


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

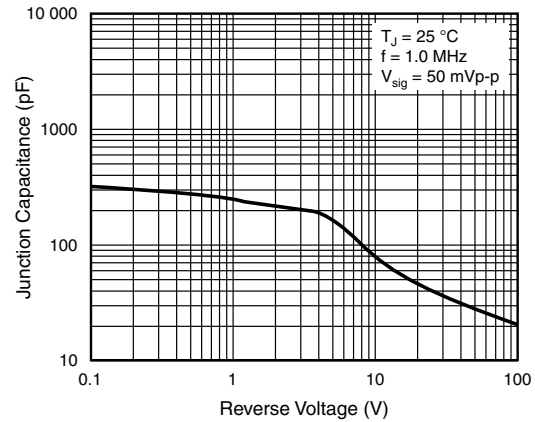


Fig. 5 - Typical Junction Capacitance Per Diode

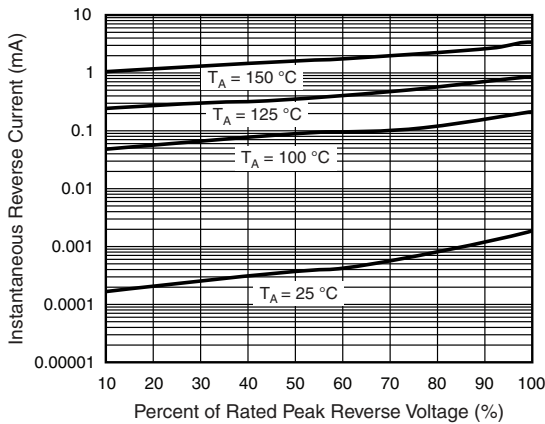


Fig. 4 - Typical Reverse Characteristics Per Diode

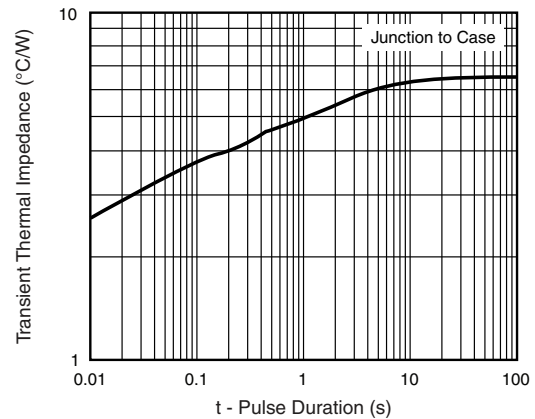
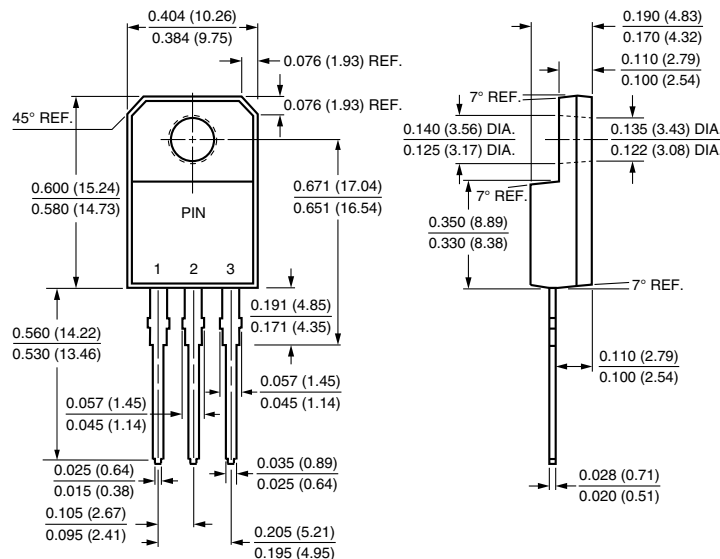


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

ITO-220AB





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