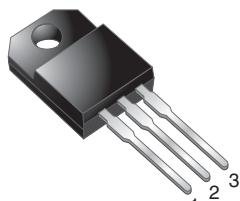


Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.55 V at I_F = 5 A

TMBS®
ITO-220AB



VF40150C
PIN 1 —> PIN 2
PIN 3 —> PIN 2

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 www.vishay.com/doc?99912



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 20 A
V_{RRM}	150 V
I_{FSM}	160 A
V_F at I_F = 20 A	0.75 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	VF40150C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	150	V
Maximum average forward rectified current (fig. 1)	$I_F(AV)$	40	A
per device		20	
per diode			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	160	A
Voltage rate of change (rated V_F)	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

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	$I_F = 5 \text{ A}$ $I_F = 10 \text{ A}$ $I_F = 20 \text{ A}$	V_F ⁽¹⁾	0.69	-	V	
			0.84	-		
			1.15	1.43		
	$I_F = 5 \text{ A}$ $I_F = 10 \text{ A}$ $I_F = 20 \text{ A}$		0.55	-		
			0.64	-		
			0.75	0.82		
Reverse current per diode	$V_R = 100 \text{ V}$	I_R ⁽²⁾	2.0	-	μA	
			2.5	-	mA	
	$V_R = 150 \text{ V}$		-	250	μA	
			5	25	mA	

Notes

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

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

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	VF40150C		UNIT	
Typical thermal resistance per diode	$R_{\theta\text{JC}}$	4.0		$^\circ\text{C/W}$	

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
ITO-220AB	VF40150C-M3/4W	1.75	4W	50/tube	Tube

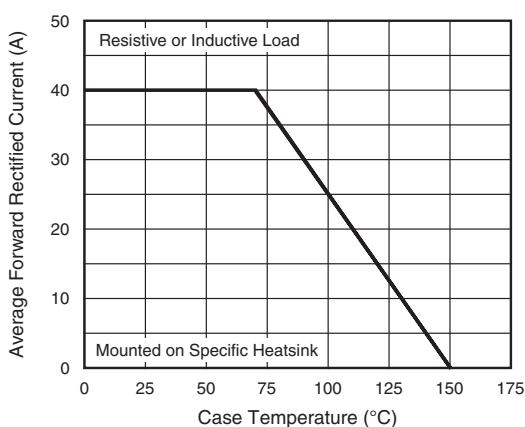
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

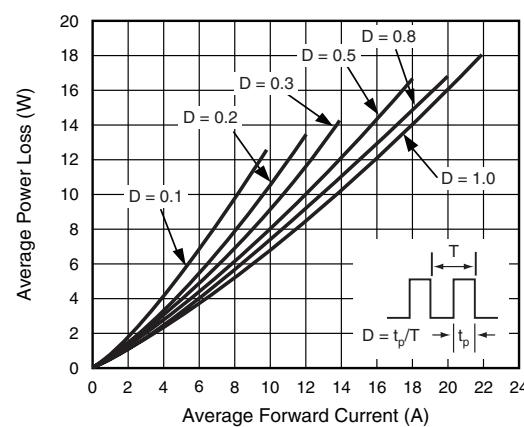


Fig. 2 - Forward Power Dissipation Characteristics

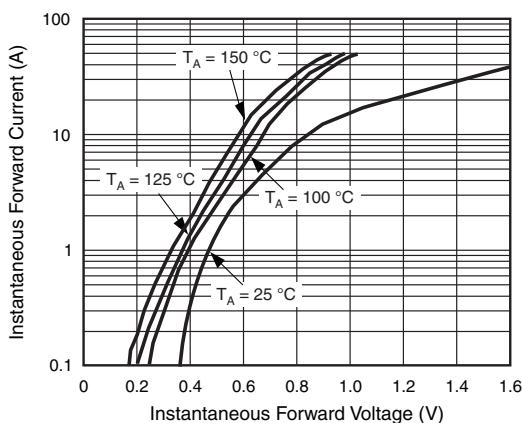


Fig. 3 - Typical Instantaneous Forward Characteristics

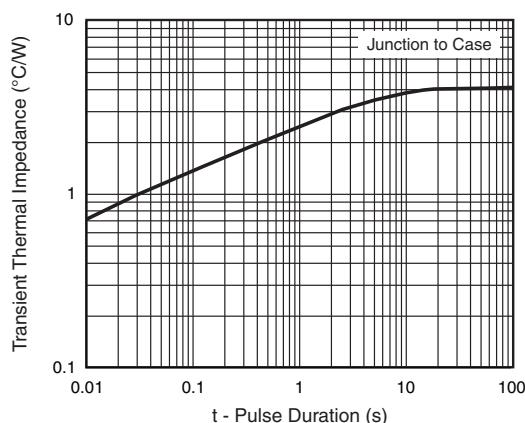


Fig. 5 - Typical Transient Thermal Impedance

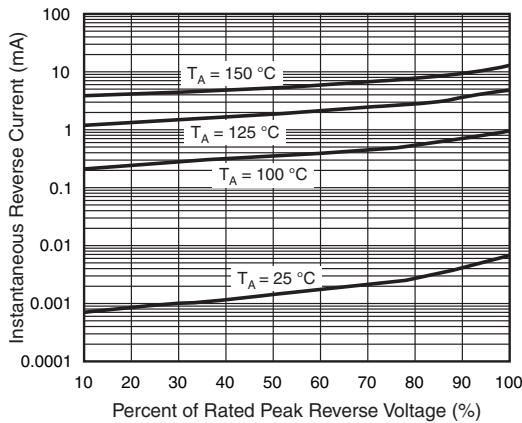


Fig. 4 - Typical Reverse Characteristics

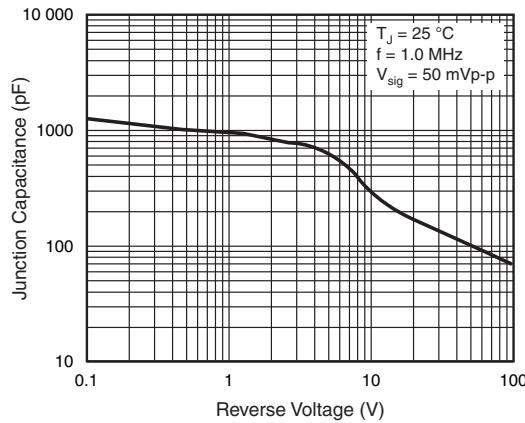
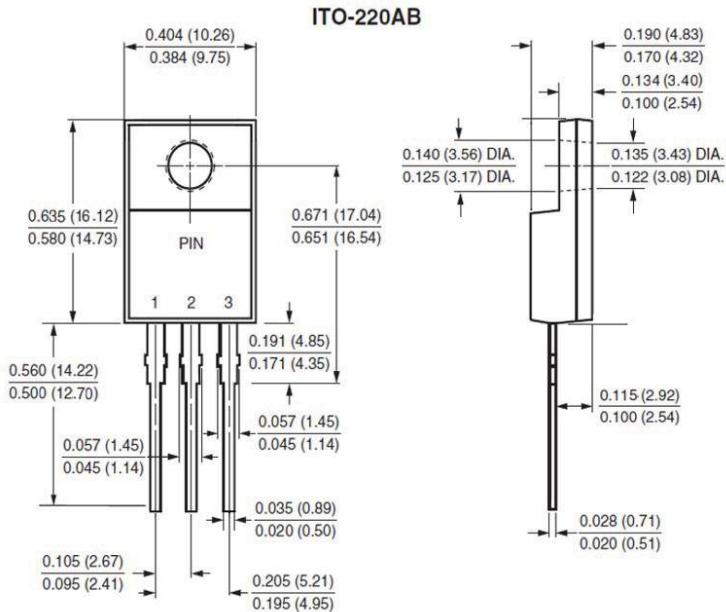


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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