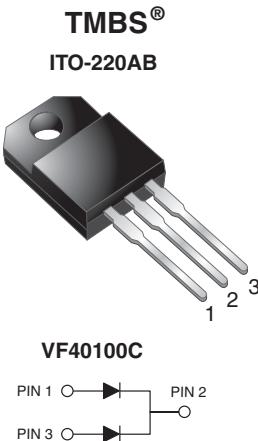


Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.38 V at I_F = 5 A



FEATURES

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



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, commercial grade
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}	100 V
I_{FSM}	250 A
V_F at I_F = 20 A	0.61 V
T_J max.	150 °C
Package	ITO-220AB
Circuit configuration	Common cathode

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VF40100C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	100	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 per diode	I_{FSM}	250	A
Voltage rate of change (rated V_R)	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}	-40 to +150	°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	
Instantaneous forward voltage per diode	$I_F = 5 \text{ A}$	$T_A = 25^\circ\text{C}$	$V_F^{(1)}$	0.47	-	
	$I_F = 10 \text{ A}$			0.54	-	
	$I_F = 20 \text{ A}$			0.67	0.73	
	$I_F = 5 \text{ A}$	$T_A = 125^\circ\text{C}$		0.38	-	
	$I_F = 10 \text{ A}$			0.45	-	
	$I_F = 20 \text{ A}$			0.61	0.67	
Reverse current at rated V_R per diode	$V_R = 70 \text{ V}$	$T_A = 25^\circ\text{C}$	$I_R^{(2)}$	9	-	
		$T_A = 125^\circ\text{C}$		10	-	
	$V_R = 100 \text{ V}$	$T_A = 25^\circ\text{C}$		-	1000	
		$T_A = 125^\circ\text{C}$		21	45	
					μA	
					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	VF40100C		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	VF40100C-M3/4W	1.75	4W	50/tube	Tube
ITO-220AB	VF40100C-E3/4W	1.75	4W	50/tube	Tube

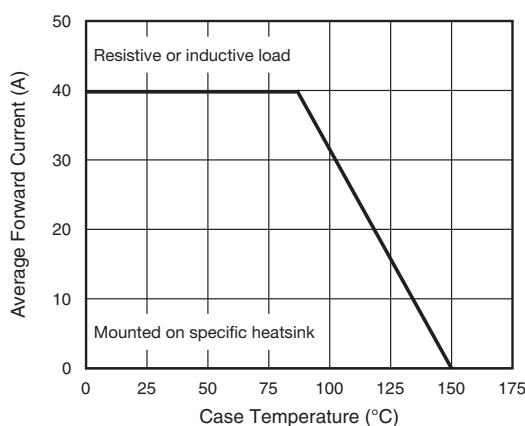
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

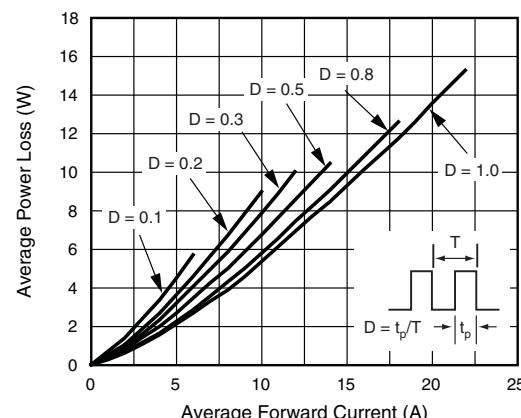


Fig. 2 - Forward Power Loss Characteristics Per Diode

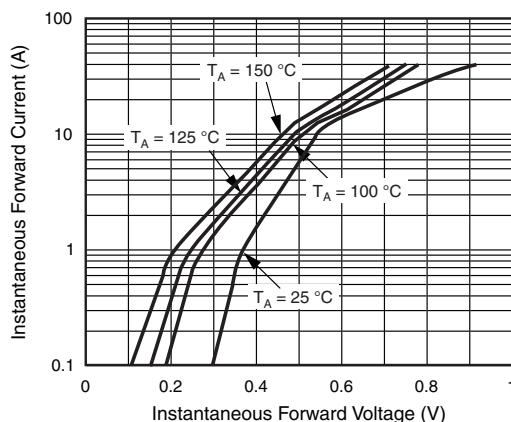


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

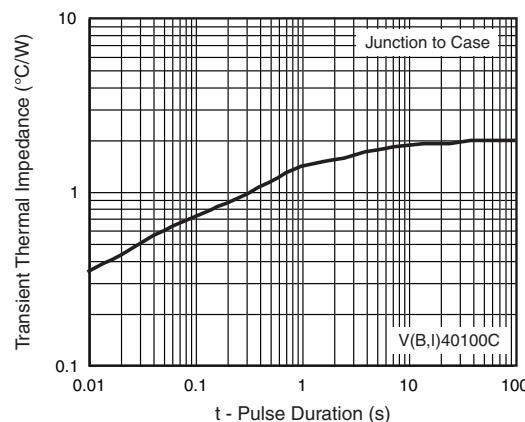


Fig. 6 - Typical Transient Thermal Impedance Per Diode

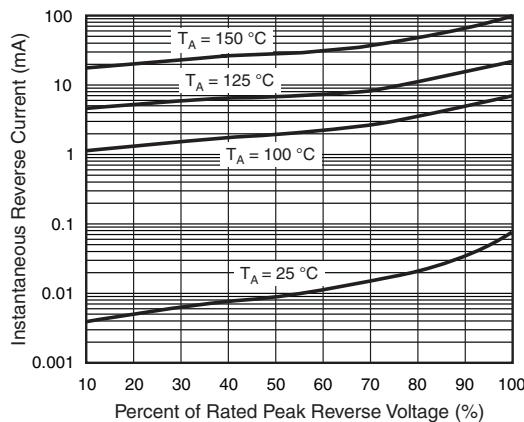


Fig. 4 - Typical Reverse Characteristics Per Diode

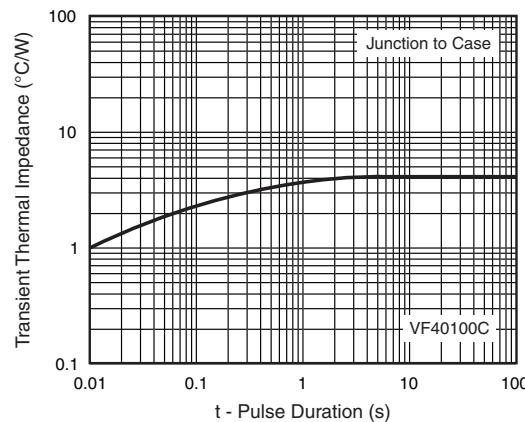


Fig. 7 - Typical Transient Thermal Impedance Per Diode

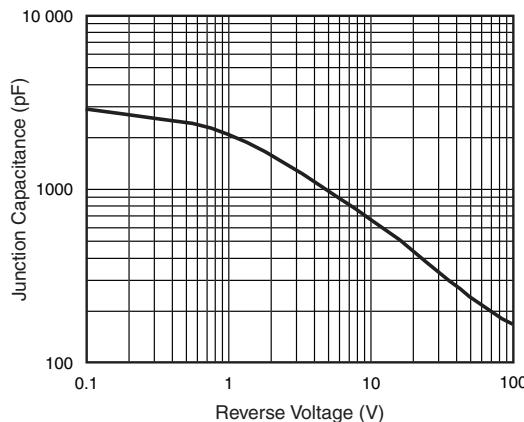
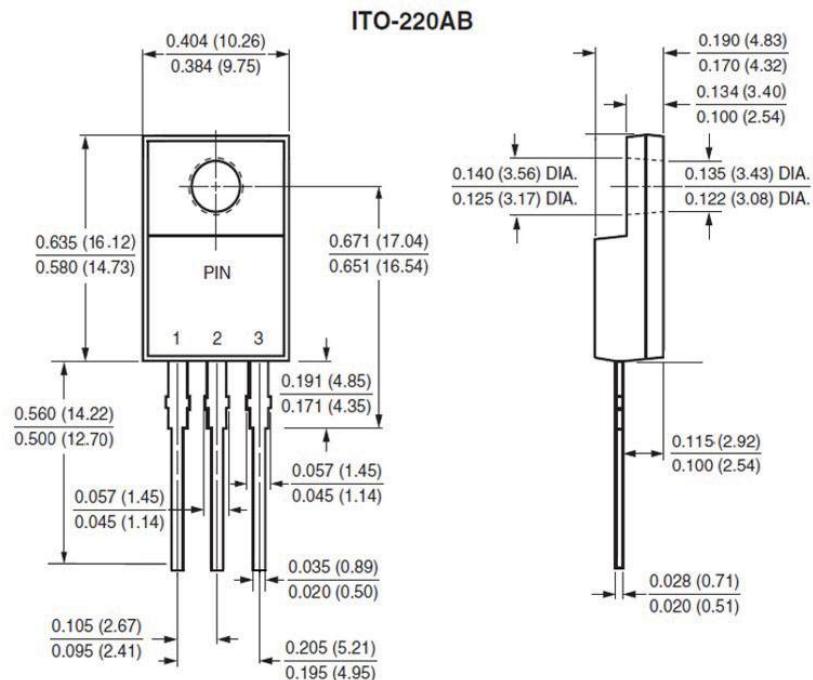


Fig. 5 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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