

Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.59 \text{ V}$ at $I_F = 5 \text{ A}$





PIN 1 O-	>	PIN 2
PIN 3 O-	—	—0

PRIMARY CHARACTERISTICS			
I _{F(AV)}	2 x 10 A		
V _{RRM}	150 V		
I _{FSM}	120 A		
V _F at I _F = 10 A	0.69 V		
T _J max.	150 °C		
Package	ITO-220AB		
Circuit configuration	Common cathode		

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 <u>www.vishay.com/doc?99912</u>

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

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)				
PARAMETER		SYMBOL	VF20150C	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	150	V
Maximum average forward rectified current (fig. 1)	per device	I _{F(AV)}	20	۸
	per diode		10	A
Peak forward surge current 8.3 ms single half s superimposed on rated load	sine-wave	I _{FSM}	120	А
Voltage rating 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 ra	nge	T _J , T _{STG}	-55 to +150	°C



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 25 °C	0.79	-			
	I _F = 10 A		V _F ⁽¹⁾	1.05	1.20	V	
	I _F = 5 A	T _A = 125 °C		0.59	-		
	I _F = 10 A			0.69	0.75		
Reverse current per diode	V _R = 100 V	T _A = 25 °C	T _A = 25 °C 1.3 -	-	μA		
	VR = 100 V	T _A = 125 °C	I _R ⁽²⁾	1.2	-	mA	
	V _B = 150 V	T _A = 25 °C	IR (=)	-	150	μA	
	VR = 130 V	T _A = 125 °C		3	15	mA	

Notes

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

(2) Pulse test: Pulse width \leq 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VF20150C	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	5.0	°C/W

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
ITO-220AB	VF20150C-M3/4W	1.75	4W	50/tube	Tube		

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

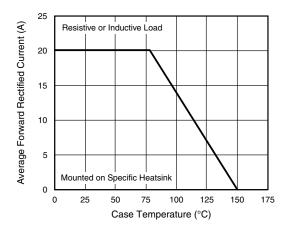


Fig. 1 - Maximum Forward Current Derating Curve

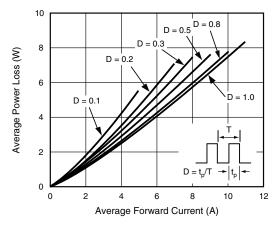


Fig. 2 - Forward Power Loss Characteristics Per Diode



Junction to Case

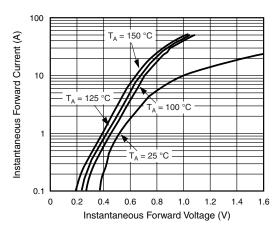
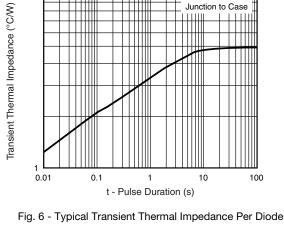


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode



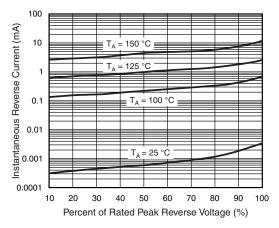


Fig. 4 - Typical Reverse Characteristics Per Diode

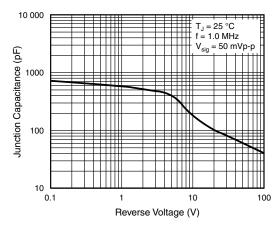
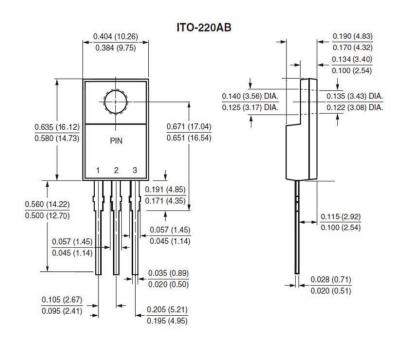


Fig. 5 - Typical Junction Capacitance Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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