Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.36$ V at $I_F = 5$ A

TMBS® ITO-220AB

VF60100C PIN 1 O PIN 2 PIN 3 O--

PRIMARY CHARACTERISTICS				
I _{F(AV)}	2 x 30 A			
V _{RRM}	100 V			
I _{FSM}	320 A			
V_F at $I_F = 30$ A	0.66 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
- HALOGEN Solder dip 275 °C max. 10 s, per JESD 22-B106 FREE
- 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-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	VF60100C	UNIT	
Maximum repetitive peak reverse voltage		V _{RRM}	100	V	
Maximum average forward rectified current (fig. 1)	per device		60	٨	
	per diode	IF(AV)	30	— A	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I _{FSM}	320	A	
Isolation voltage from terminal to heatsink t = 1 min		V _{AC}	1500	V	
Voltage rate of change (rated V _R)		dV/dt	10 000	V/µs	
Operating junction and storage temperature range		T _J , T _{STG}	-40 to +150	°C	



RoHS COMPLIANT

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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 25 °C	V _F (1)	0.45	-		
	I _F = 10 A			0.52	-		
	I _F = 15 A			0.58	0.63		
	I _F = 20 A			0.63	-	- V	
	I _F = 30 A			0.73	0.79		
	I _F = 5 A	T _A = 125 °C		0.36	-		
	I _F = 10 A			0.45	-		
	I _F = 15 A			0.53	0.58		
	I _F = 20 A			0.58	-		
	I _F = 30 A	-		0.66	0.70		
Reverse current at rated V_R per diode	V _R = 80 V	T _A = 25 °C	I _R ⁽²⁾	24	500	μA	
		T _A = 125 °C		13	20	mA	
	V 100 V	T _A = 25 °C		65	1000	μA	
	V _R = 100 V	T _A = 125 °C		30	-	mA	

Notes

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

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)					
PARAMETER		SYMBOL	VF60100C	UNIT	
Typical thermal resistance	per diode	$R_{ extsf{ heta}JC}$	5.0	°C/W	
	per device		3.5	0/10	

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
ITO-220AB	VF60100C-M3/4W	1.76	4W	50/tube	Tube	



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

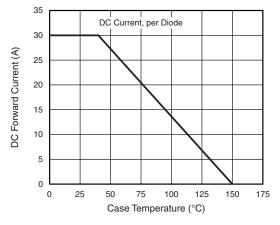


Fig. 1 - Maximum Forward Current Derating Curve

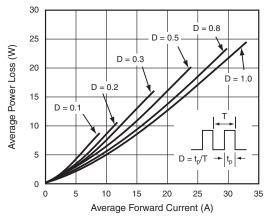


Fig. 2 - Forward Power Loss Characteristics Per Diode

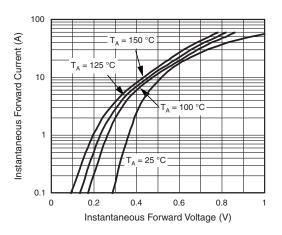


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

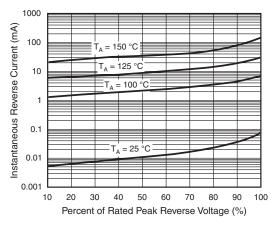


Fig. 4 - Typical Reverse Characteristics Per Diode

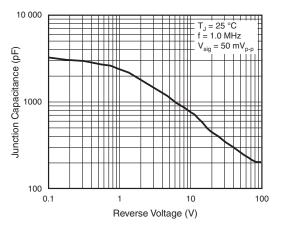


Fig. 5 - Typical Junction Capacitance Per Diode

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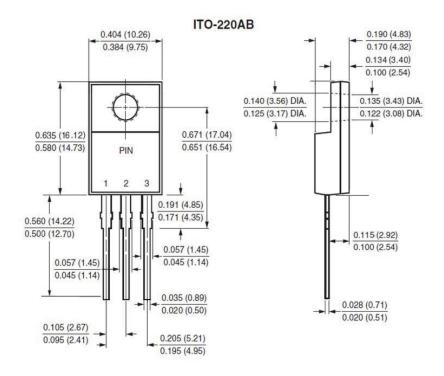
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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