# **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 <sub>F(AV)</sub>	2 x 30 A			
V <sub>RRM</sub>	100 V			
I <sub>FSM</sub>	320 A			
$V_F$ at $I_F = 30$ A	0.66 V			
T <sub>J</sub> 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

<b>MAXIMUM RATINGS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)					
PARAMETER		SYMBOL	VF60100C	UNIT	
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	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 <sub>FSM</sub>	320	A	
Isolation voltage from terminal to heatsink t = 1 min		V <sub>AC</sub>	1500	V	
Voltage rate of change (rated V <sub>R</sub> )		dV/dt	10 000	V/µs	
Operating junction and storage temperature range		T <sub>J</sub> , T <sub>STG</sub>	-40 to +150	°C	



RoHS COMPLIANT

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

#### Notes

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

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ 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)

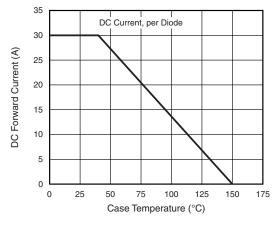


Fig. 1 - Maximum Forward Current Derating Curve

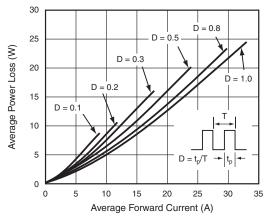


Fig. 2 - Forward Power Loss Characteristics Per Diode

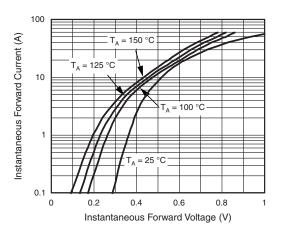


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

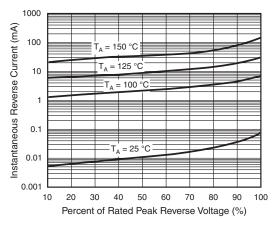


Fig. 4 - Typical Reverse Characteristics Per Diode

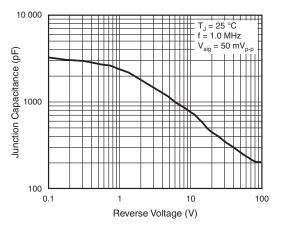


Fig. 5 - Typical Junction Capacitance Per Diode

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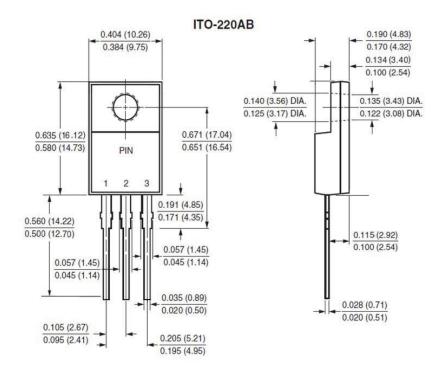
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## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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