

Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.36 \text{ V}$ at $I_F = 5 \text{ A}$





VF60100C



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



• High efficiency operation

• Solder dip 275 °C max. 10 s, per JESD 22-B106 FREE

 Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

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.

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	VF60100C	UNIT	
Maximum repetitive peak reverse voltage		V_{RRM}	100	V	
Maximum average forward rectified current (fig. 1)	per device	,	60	^	
	per diode	I _{F(AV)}	30	— A	
Peak forward surge current 8.3 ms single half sine-w superimposed on rated load per diode	I _{FSM}	320	А		
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	



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	V _F ⁽¹⁾	0.45	-	V	
	I _F = 10 A			0.52	-		
	I _F = 15 A			0.58	0.63		
	I _F = 20 A			0.63	-		
	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	μΑ	
		T _A = 125 °C		13	20	mA	
	V 100 V	T _A = 25 °C		65	1000	μΑ	
	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 ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	VF60100C	UNIT		
Typical thormal registance	per diode	$R_{ hetaJC}$	5.0	°C/W	
Typical thermal resistance	per device		3.5		

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)

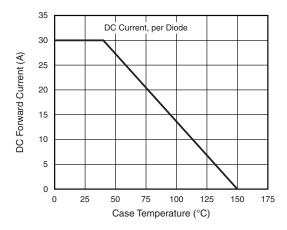


Fig. 1 - Maximum Forward Current Derating Curve

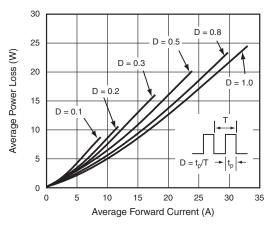


Fig. 2 - Forward Power Loss Characteristics Per Diode

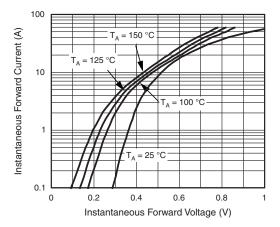


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

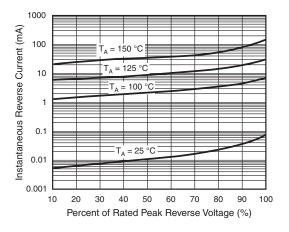


Fig. 4 - Typical Reverse Characteristics Per Diode

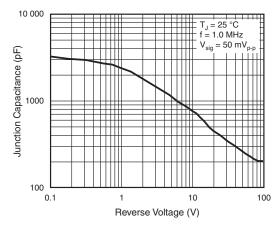
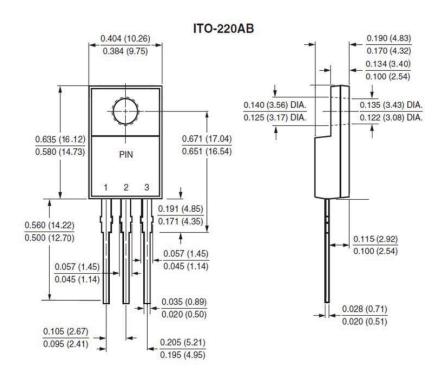


Fig. 5 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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