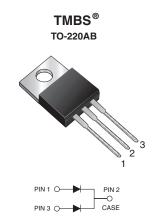


Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.43 \text{ V}$ at $I_F = 5 \text{ A}$



PRIMARY CHARACTERISTICS				
I _{F(AV)}	2 x 15 A			
V_{RRM}	100 V			
I _{FSM}	160 A			
V _F at I _F = 15 A (125 °C)	0.62 V			
T _J max.	150 °C			
Package	TO-220AB			
Circuit configuration	Common cathode			

FEATURES

- Trench MOS Schottky technology
- · Low forward voltage drop, low power losses

• High efficiency operation

RoHS COMPLIANT HALOGEN

FREE

- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see <u>www.vishav.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: TO-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	V30100CI	UNIT	
Maximum repetitive peak reverse voltage		V_{RRM}	100	V	
Maximum DC reverse voltage		V_{DC}	80		
Maximum average forward rectified current (fig. 1)	per device	I _{F(AV)}	30	А	
	per diode		15		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I _{FSM}	160	Α	
Operating junction temperature range		T _J ⁽¹⁾	-40 to +150	°C	
Storage temperature range		T _{STG}	-55 to +150		

Note

 $^{^{(1)}}$ The heat generated must be less than the thermal conductivity from junction to ambient: $dP_D/dT_J < 1/R_{\theta JA}$



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⁾	0.50	-	. v
	I _F = 7.5 A			0.55	-	
	I _F = 15 A			0.70	0.77	
	I _F = 5 A	T _A = 125 °C		0.43	-	
	I _F = 7.5 A			0.50	-	
	I _F = 15 A			0.62	0.68	
Reverse current per diode	V _R = 80 V	T _A = 25 °C	I _R ⁽²⁾	0.01	-	- mA
		T _A = 125 °C		7.0	-	
	V _R = 100 V	T _A = 25 °C		-	0.5	
		T _A = 125 °C		12.0	30	
Junction capacitance	4 V, 1MHz		CJ	1450	-	pF

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width $\leq 5 \text{ ms}$

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	V30100CI	UNIT		
Typical thermal resistance per device	$R_{ heta JC}$	1.8	°C/W		

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
V30100CI-M3/P	1.88	Р	50/tube	Tube		



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

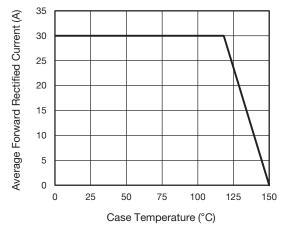


Fig. 1 - Forward Current Derating Curve

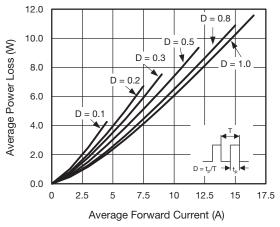


Fig. 2 - Forward Power Loss Characteristics Per Diode

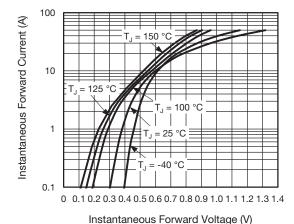


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

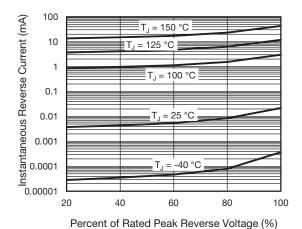


Fig. 4 - Typical Reverse Characteristics Per Diode

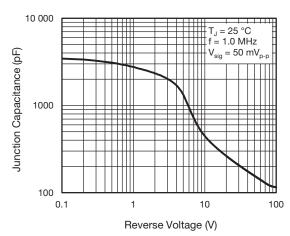


Fig. 5 - Typical Junction Capacitance

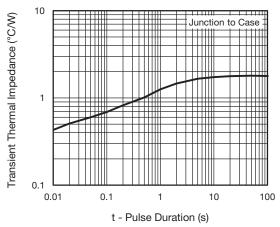
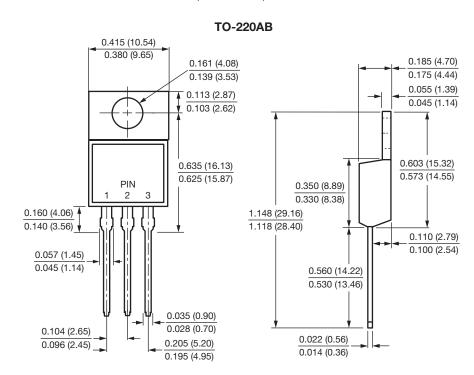


Fig. 6 - Typical Transient Thermal Impedance Per Device



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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