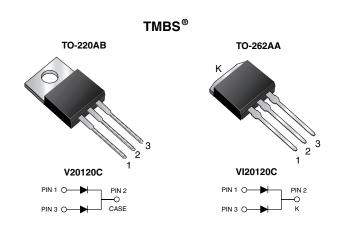


Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.54 \text{ V}$ at $I_F = 5 \text{ A}$



PRIMARY CHARACTERISTICS					
I _{F(AV)}	2 x 10 A				
V_{RRM}	120 V				
I _{FSM}	120 A				
V_F at $I_F = 10 A$	0.64 V				
T _J max.	150 °C				
Package	TO-220AB, TO-262AA				
Diode variation	Common cathode				

FEATURES

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

· High efficiency operation

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

COMPLIANT HALOGEN FREE

- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishav.com/doc?99912

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: TO-220AB and TO-262AA

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS compliant, and

commercial grade

Base P/NHM3 - halogen-free, RoHS compliant, and AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs max.

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	V20120C	VI20120C	UNIT	
Max. repetitive peak reverse voltage		V_{RRM}	120		V	
Max. average forward rectified current (fig. 1)	per device	I _{F(AV)}	20		А	
	per diode		10			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I _{FSM}	120		А	
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⁾	0.62	-	V	
	I _F = 10 A			0.81	0.90		
	I _F = 5 A	T _A = 125 °C		0.54	-		
	I _F = 10 A			0.64	0.72		
Reverse current per diode	V _R = 90 V	T _A = 25 °C	I _R ⁽²⁾	8	-	μΑ	
		T _A = 125 °C		6	-	mA	
	V _R = 120 V	T _A = 25 °C		-	700	μΑ	
		T _A = 125 °C		14	45	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	V20120C	VI20120C	UNIT	
Typical thermal resistance per diode	$R_{ heta JC}$	2.8		°C/W	

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AB	V20120C-M3/4W	1.88	4W	50/tube	Tube		
TO-262AA	VI20120C-M3/4W	1.45	4W	50/tube	Tube		
TO-220AB	V20120CHM3/4W (1)	1.88	4W	50/tube	Tube		
TO-262AA	VI20120CHM3/4W (1)	1.45	4W	50/tube	Tube		

Note

(1) AEC-Q101 qualified

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

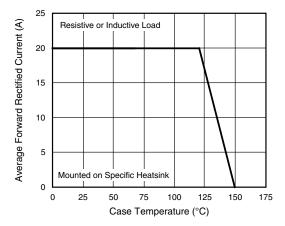


Fig. 1 - Maximum Forward Current Derating Curve

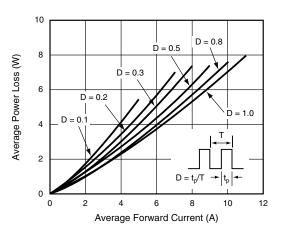


Fig. 2 - Forward Power Loss Characteristics Per Diode

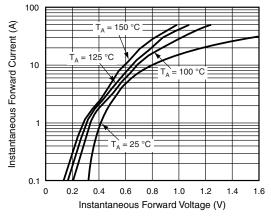


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

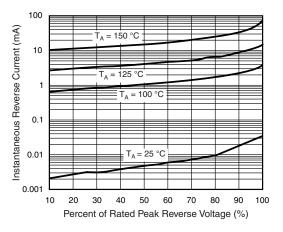


Fig. 4 - Typical Reverse Characteristics Per Diode

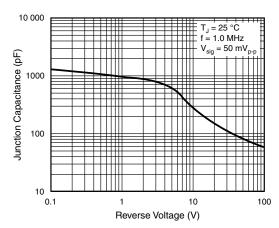


Fig. 5 - Typical Junction Capacitance Per Diode

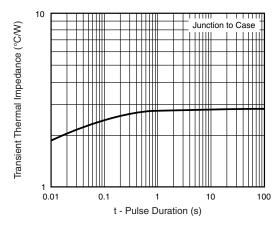
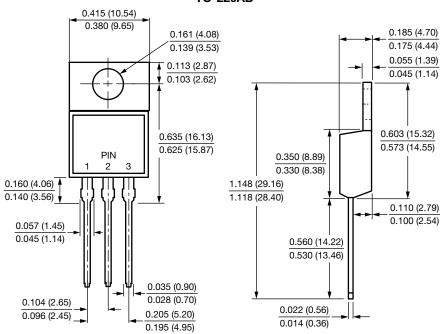


Fig. 6 - Typical Transient Thermal Impedance Per Diode

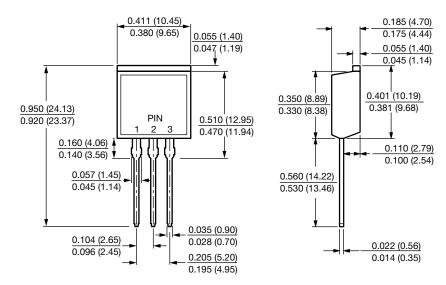


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



TO-262AA





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