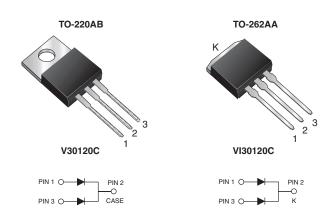


Vishay General Semiconductor

Dual High Voltage TMBS® (Trench MOS Barrier Schottky) Rectifier

Ultra Low $V_F = 0.50 \text{ V}$ at $I_F = 5 \text{ A}$



PRIMARY CHARACTERISTICS					
I _{F(AV)} 2 x 15 A					
V_{RRM}	120 V				
I _{FSM}	150 A				
V _F at I _F = 15 A	0.68 V				
T _J max.	150 °C				
Package	TO-220AB, TO-262AA				
Circuit configurations	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
- Material categorization: for definitions of compliance please see www.vishay.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

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 max.

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	V30120C	VI30120C	UNIT	
Max. repetitive peak reverse voltage		V _{RRM}	120		V	
Max. 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}	150		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	



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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⁾	0.56	-	V	
	I _F = 7.5 A			0.71	-		
	I _F = 15 A			0.86	0.97		
	I _F = 5 A	T _A = 125 °C		0.50	-		
	I _F = 7.5 A			0.60	-		
	I _F = 15 A			0.68	0.76		
Reverse current per diode	V _R = 90 V	T _A = 25 °C	I _R ⁽²⁾	11	-	μΑ	
		T _A = 125 °C		8	-	mA	
	I V _P = 120 V 	T _A = 25 °C		-	800	μΑ	
		T _A = 125 °C		17	50	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 °C unless otherwise noted)					
PARAMETER	SYMBOL	V30120C	VI30120C	UNIT	
Typical thermal resistance per diode	$R_{\theta JC}$	2.2		°C/W	

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N UNIT WEIGHT (g) PACKAGE CODE BASE QUAN		BASE QUANTITY	DELIVERY MODE			
TO-220AB	V30120C-M3/4W	1.89	4W	50/tube	Tube		
TO-262AA	VI30120C-M3/4W	1.45	4W	50/tube	Tube		

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

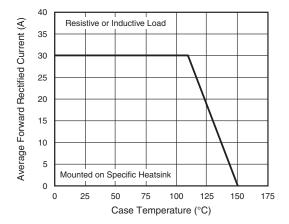


Fig. 1 - Maximum Forward Current Derating Curve

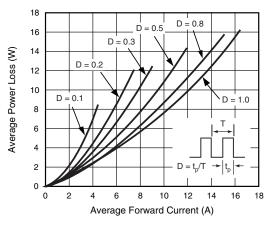


Fig. 2 - Forward Power Loss Characteristics Per Diode

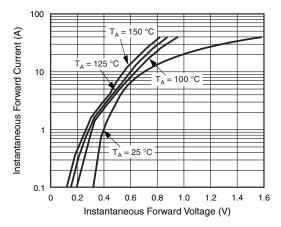


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

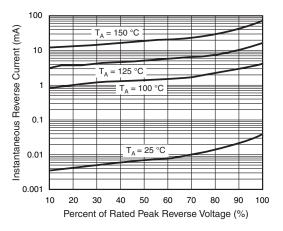


Fig. 4 - Typical Reverse Characteristics Per Diode

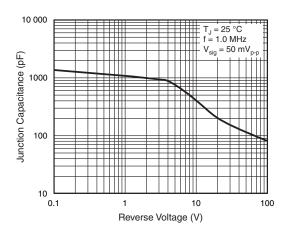


Fig. 5 - Typical Junction Capacitance Per Diode

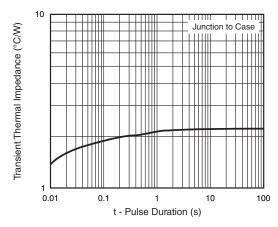
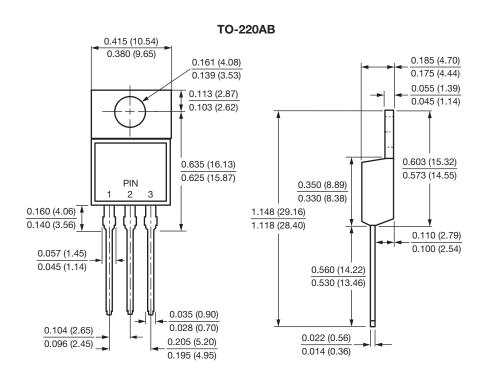


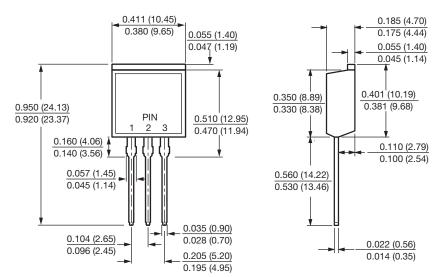
Fig. 6 - Typical Transient Thermal Impedance Per Diode

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



TO-262AA





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