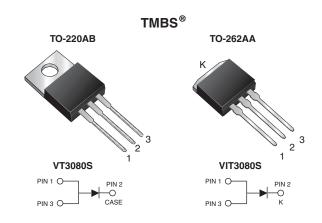


## Vishay General Semiconductor

## **Trench MOS Barrier Schottky Rectifier**

Ultra Low  $V_F = 0.39 \text{ V}$  at  $I_F = 5 \text{ A}$ 



PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	30 A			
$V_{RRM}$	80 V			
I <sub>FSM</sub>	200 A			
$V_F$ at $I_F = 30 A$	0.73 V			
T <sub>J</sub> max.	150 °C			
Package	TO-220AB, TO-262AA			
Diode variation	Single			

#### **FEATURES**

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

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



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

#### **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

T.......

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 <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	VT3080S	VIT3080S	UNIT	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	80		V	
Maximum average forward rectified current (fig. 1)	I <sub>F(AV)</sub>	30		А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	200		А	
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>	-55 to +150		°C	



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °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> <sup>(1)</sup>	0.47	-	V	
	I <sub>F</sub> = 15 A			0.61	-		
	I <sub>F</sub> = 30 A			0.82	0.95		
	I <sub>F</sub> = 5 A	T <sub>A</sub> = 125 °C		0.39	-		
	I <sub>F</sub> = 15 A			0.57	-		
	I <sub>F</sub> = 30 A			0.73	0.82		
Reverse current per diode	V <sub>R</sub> = 80 V	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	70	1000	μΑ	
	v <sub>R</sub> = 60 v	T <sub>A</sub> = 125 °C		23	45	mA	

#### **Notes**

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

(2) Pulse test: Pulse width  $\leq$  40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	VT3080S VIT3080S		UNIT
Typical thermal resistance	$R_{ heta JC}$	1.5		°C/W

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
TO-220AB	VT3080S-M3/4W	1.88	4W	50/tube	Tube	
TO-262AA	VIT3080S-M3/4W	1.45	4W	50/tube	Tube	

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### **RATINGS AND CHARACTERISTICS CURVES** (T<sub>A</sub> = 25 °C unless otherwise noted)

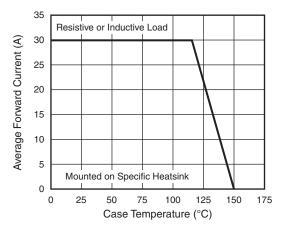


Fig. 1 - Maximum Forward Current Derating Curve

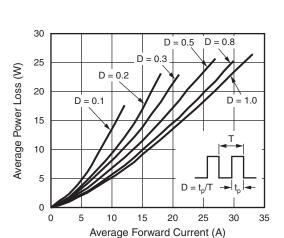


Fig. 2 - Forward Power Dissipation Characteristics

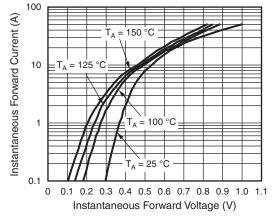


Fig. 3 - Typical Instantaneous Forward Characteristics

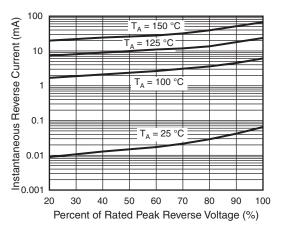


Fig. 4 - Typical Reverse Characteristics

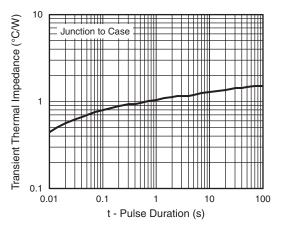


Fig. 5 - Typical Transient Thermal Impedance

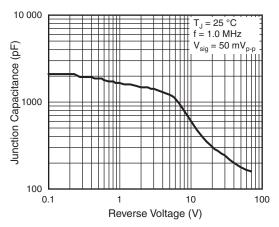
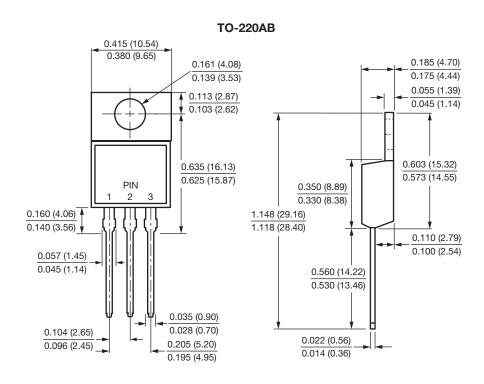


Fig. 6 - Typical Junction Capacitance

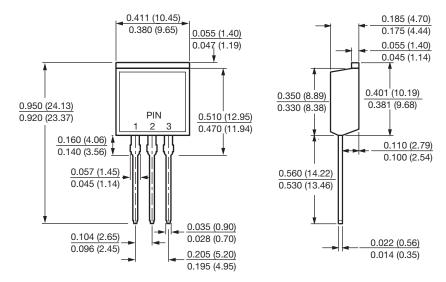


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### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



#### **TO-262AA**





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