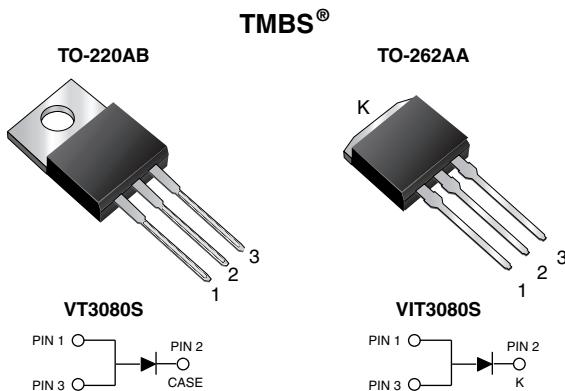


Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.39$ V at $I_F = 5$ A



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
- AEC-Q101 qualified
- 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

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 maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	30 A
V_{RRM}	80 V
I_{FSM}	200 A
V_F at $I_F = 30$ A	0.73 V
T_J max.	150 °C
Package	TO-220AB, TO-262AA
Diode variation	Single die

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	VT3080S	VIT3080S	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	80		V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	30		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	200		A
Voltage rate of change (rated V_R)	dV/dt	10 000		V/μs
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150		°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode	$I_F = 5 \text{ A}$	$T_A = 25^\circ\text{C}$	0.47	-	V
	$I_F = 15 \text{ A}$		0.61	-	
	$I_F = 30 \text{ A}$		0.82	0.95	
	$I_F = 5 \text{ A}$	$T_A = 125^\circ\text{C}$	0.39	-	
	$I_F = 15 \text{ A}$		0.57	-	
	$I_F = 30 \text{ A}$		0.73	0.82	
Reverse current per diode	$V_R = 80 \text{ V}$	$T_A = 25^\circ\text{C}$	70	1000	μA
		$T_A = 125^\circ\text{C}$	23	45	mA

Notes

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

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

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	VT3080S		VIT3080S	UNIT
Typical thermal resistance		$R_{\theta\text{JC}}$		1.5	$^\circ\text{C/W}$

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
TO-220AB	VT3080SHM3/4W (1)	1.88	4W	50/tube	Tube
TO-262AA	VIT3080SHM3/4W (1)	1.45	4W	50/tube	Tube

Note

(1) AEC-Q101 qualified

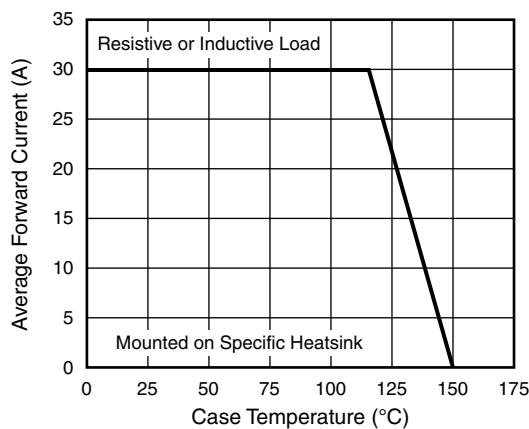
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

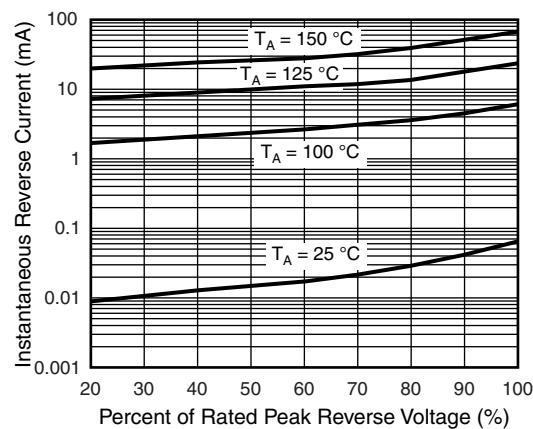


Fig. 4 - Typical Reverse Characteristics

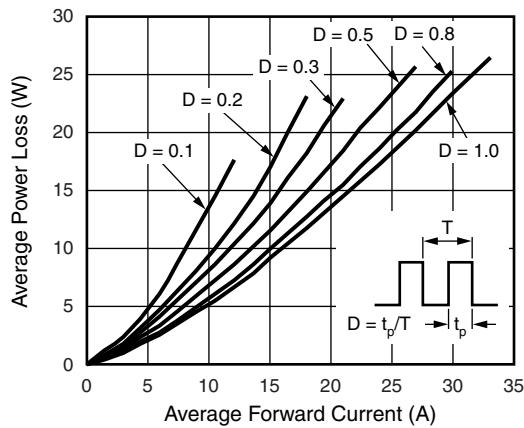


Fig. 2 - Forward Power Dissipation Characteristics

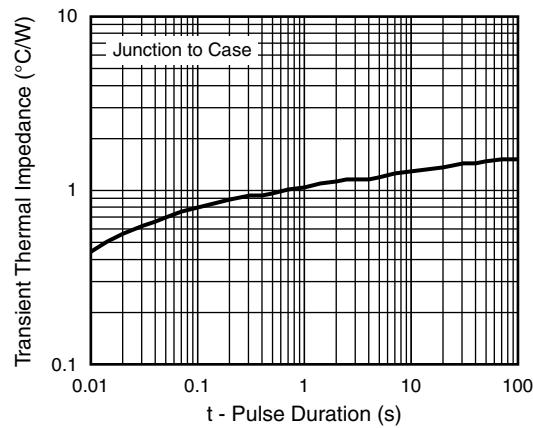


Fig. 5 - Typical Transient Thermal Impedance

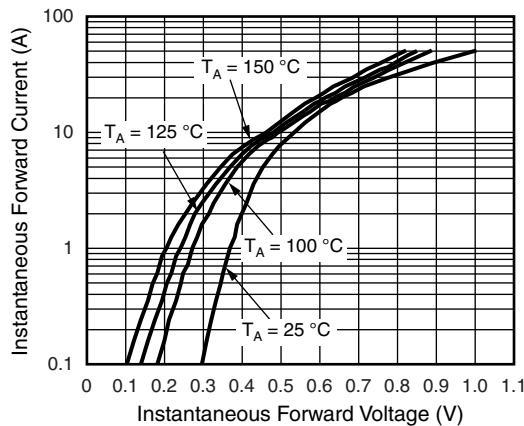


Fig. 3 - Typical Instantaneous Forward Characteristics

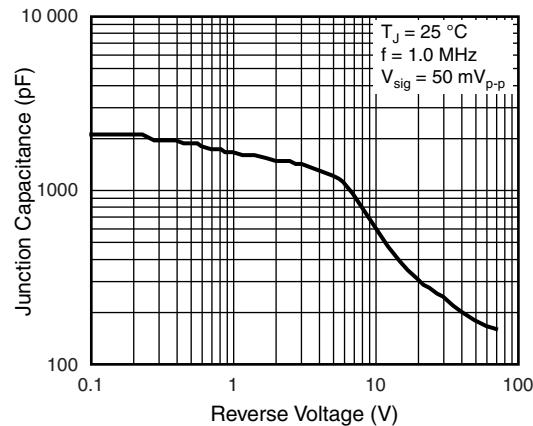
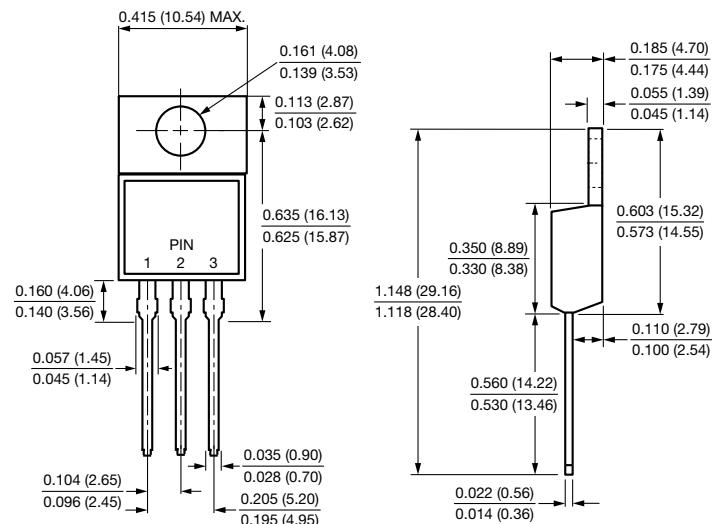
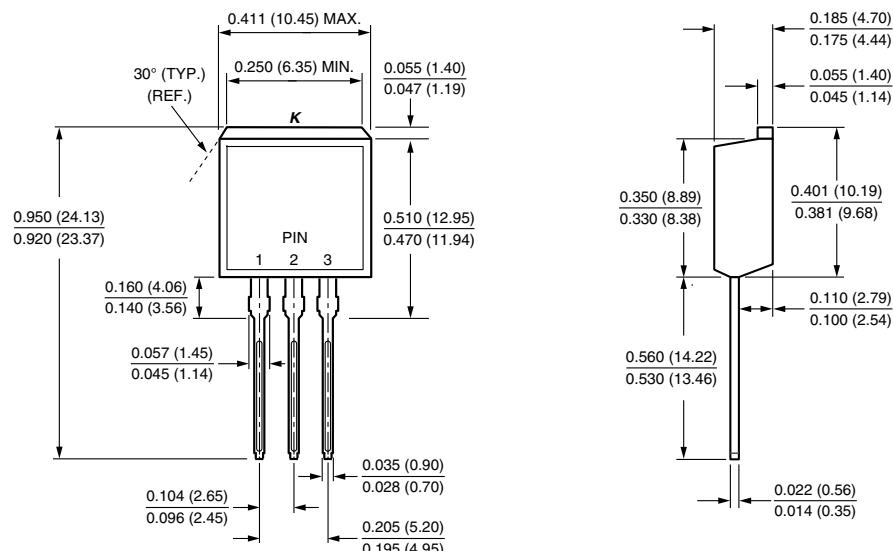


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB

TO-262AA


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