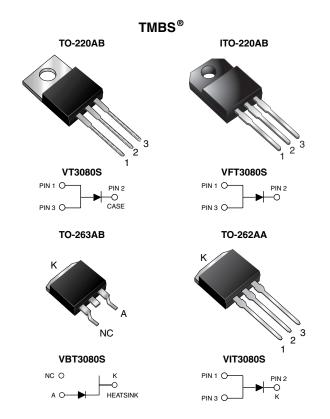


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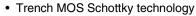
Trench MOS Barrier Schottky Rectifier

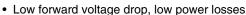
Ultra Low $V_F = 0.39 \text{ V}$ at $I_F = 5 \text{ A}$



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				

FEATURES





· High efficiency operation



 Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)

 Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB, ITO-220AB, and TO-262AA package)

 Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in high frequency converters, switching power supplies, freewheeling diodes, OR-ing diode, dc-to-dc converters and reverse battery protection.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, TO-263AB and TO-262AA

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS compliant, commercial grade

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 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	VT3080S	VFT3080S	VBT3080S	VIT3080S	UNIT		
Maximum repetitive peak reverse voltage	V _{RRM}	80				V		
Maximum average forward rectified current (fig. 1)	I _{F(AV)}	30						
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	200				Α		
Non-repetitive avalanche energy at T _J = 25 °C, L = 100 mH	E _{AS}	250				mJ		
Peak repetitive reverse current at t_p = 2 μ s, 1 kHz, T_J = 38 °C \pm 2 °C per diode	I _{RRM}	1.0			Α			
Isolation voltage (ITO-220AB only) from terminal to heatsink t = 1 min	V _{AC}	1500				V		
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to + 150						

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Breakdown voltage	I _R = 1.0 mA	T _A = 25 °C	V_{BR}	80 (minimum)	-	V	
Instantaneous forward voltage	I _F = 5 A	T _A = 25 °C	- V _F ⁽¹⁾	0.47	-	V	
	I _F = 15 A			0.61	-		
	I _F = 30 A			0.82	0.95		
	I _F = 5 A	T _A = 125 °C		0.39	-		
	I _F = 15 A			0.57	-		
	I _F = 30 A			0.73	0.82		
Reverse current	V - 90 V	T _A = 25 °C T _A = 125 °C	T _A = 25 °C	70	1000	μΑ	
	V _R = 80 V		I _R ⁽²⁾	23	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	VT3080S	VFT3080S	VBT3080S	VIT3080S	UNIT
Typical thermal resistance	$R_{ heta JC}$	1.5	5.0	1.5	1.5	°C/W

ORDERING INFORMATION (Example)								
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
TO-220AB	VT3080S-E3/4W	1.88	4W	50/tube	Tube			
ITO-220AB	VFT3080S-E3/4W	1.75	4W	50/tube	Tube			
TO-263AB	VBT3080S-E3/4W	1.37	4W	50/tube	Tube			
TO-263AB	VBT3080S-E3/8W	1.37	8W	800/reel	Tape and reel			
TO-262AA	VIT3080S-E3/4W	1.46	4W	50/tube	Tube			

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

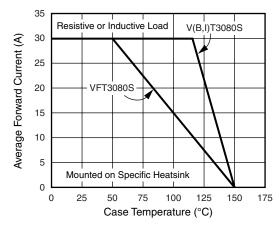


Fig. 1 - Forward Current Derating Curve

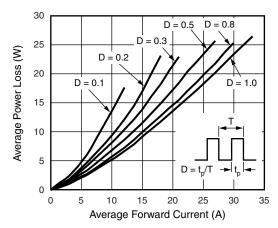


Fig. 2 - Forward Power Loss Characteristics



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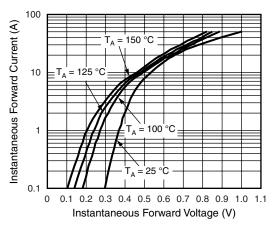


Fig. 3 - Typical Instantaneous Forward Characteristics

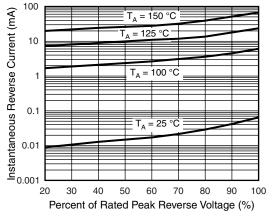


Fig. 4 - Typical Reverse Characteristics

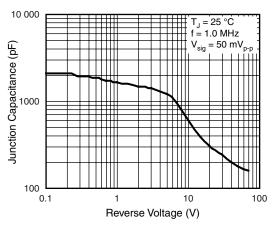


Fig. 5 - Typical Junction Capacitance

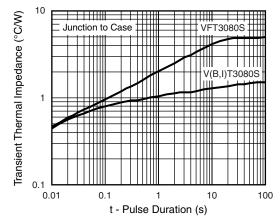
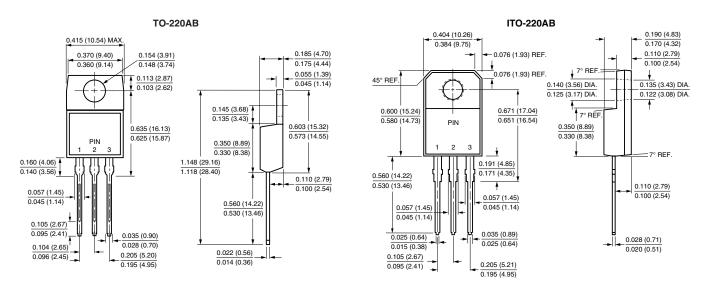


Fig. 6 - Typical Transient Thermal Impedance

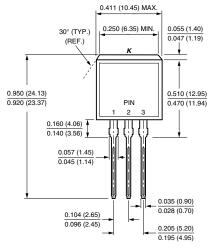
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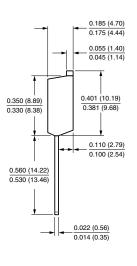


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

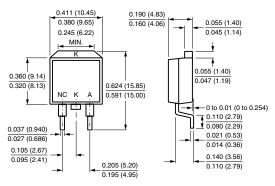


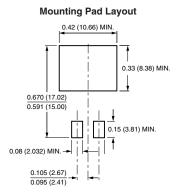
TO-262AA





TO-263AB







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