HALOGEN

FREE



Vishay General Semiconductor

Trench MOS Barrier Schottky Rectifier

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

TMBS[®] D²PAK (TO-263AB)



VBT3080S



LINKS TO ADDITIONAL RESOURCES



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	D ² PAK (TO-263AB)			
Circuit configuration	Single			

FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: D²PAK (TO-263AB)

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 maximum

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	VBT3080S	UNIT	
Maximum repetitive peak reverse voltage	V_{RRM}	80	V	
Maximum average forward rectified current (fig. 1)	I _{F(AV)}	30	Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	200	А	
Operating junction and storage temperature range	T _J , T _{STG}	-55 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 (1)	I _F = 5 A	T _A = 25 °C	V _F	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 (2)	V _R = 80 V	T _A = 25 °C	- I _R	70	1000	μA	
	v _R = 00 v	T _A = 125 °C		23	45	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	VBT3080S	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	
D ² PAK (TO-263AB)	VBT3080S-M3/4W	1.37	4W	50/tube	Tube	
D ² PAK (TO-263AB)	VBT3080S-M3/8W	1.37	8W	800/reel	Tape and reel	

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

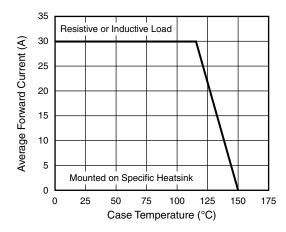


Fig. 1 - Maximum Forward Current Derating Curve

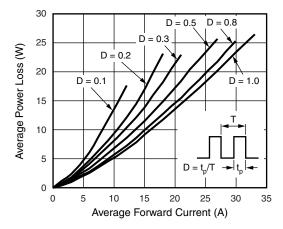


Fig. 2 - Forward Power Loss Characteristics Per Diode

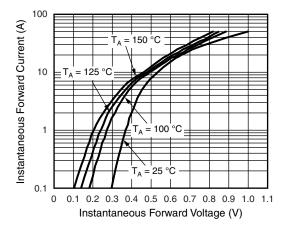


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

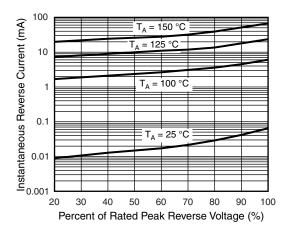


Fig. 4 - Typical Reverse Characteristics Per Diode

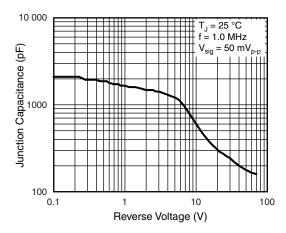


Fig. 5 - Typical Junction Capacitance Per Diode

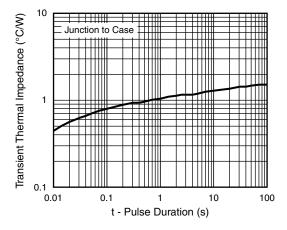
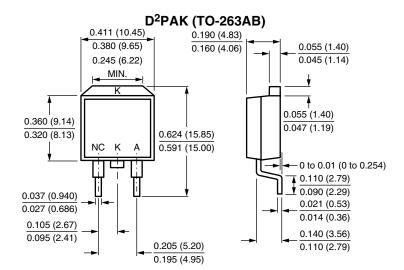


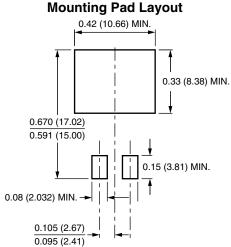
Fig. 6 - Typical Transient Thermal Impedance Per Device

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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