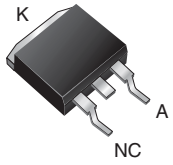
Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.39 V at I_F = 5 A

TMBS®

D²PAK (TO-263AB)



VBT3080S

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 www.vishay.com/doc?99912

RoHS COMPLIANT

HALOGEN FREE

TYPICAL APPLICATIONS

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

DESIGN SUPPORT TOOLS

click logo to get started

3D Models Available

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

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	D²PAK (TO-263AB)
Circuit configuration	Single

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	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	200	A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

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
		T_A = 125 °C		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**	**VBT3080S**	**UNIT**
Typical thermal resistance	$R_{\theta JC}$	1.5	°C/W

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

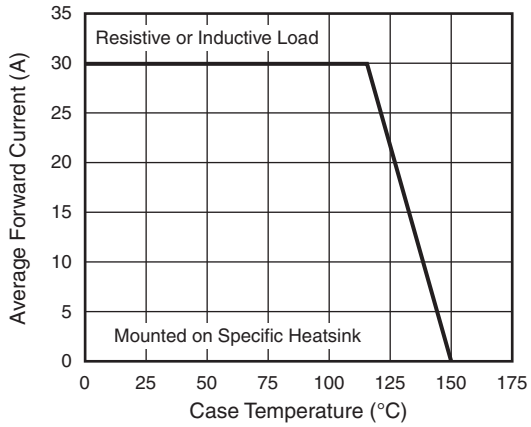


Fig. 1 - Maximum Forward Current Derating Curve

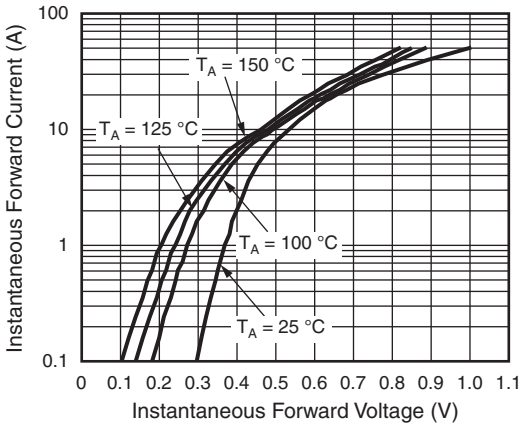


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

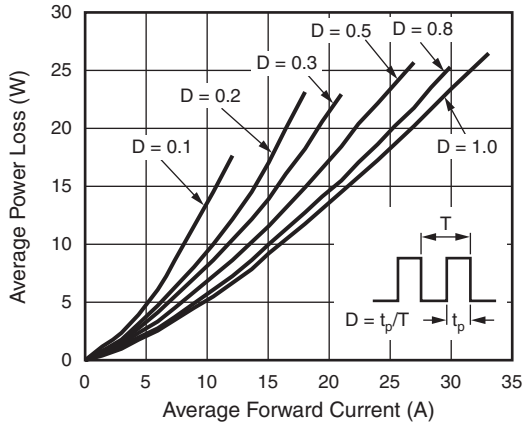


Fig. 2 - Forward Power Loss Characteristics Per Diode

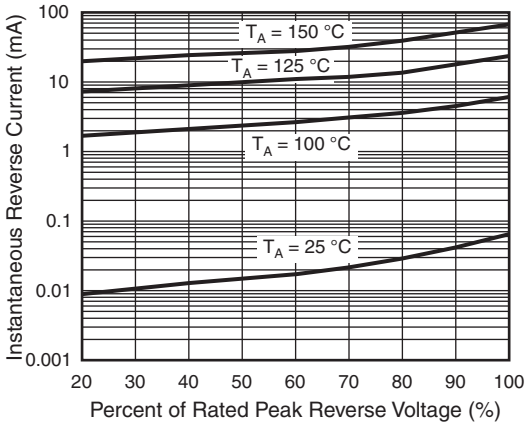


Fig. 4 - Typical Reverse Characteristics Per Diode

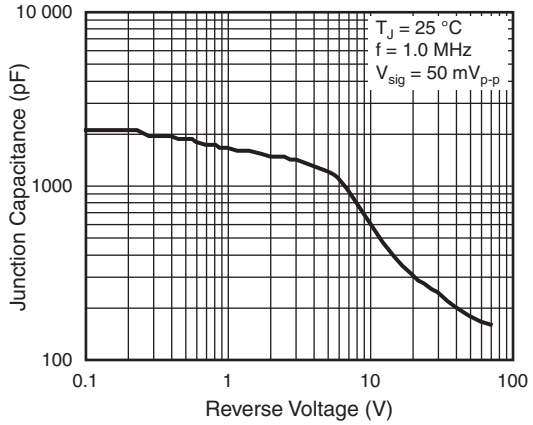


Fig. 5 - Typical Junction Capacitance Per Diode

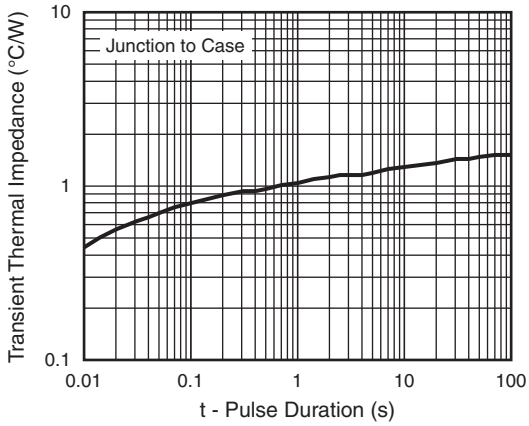
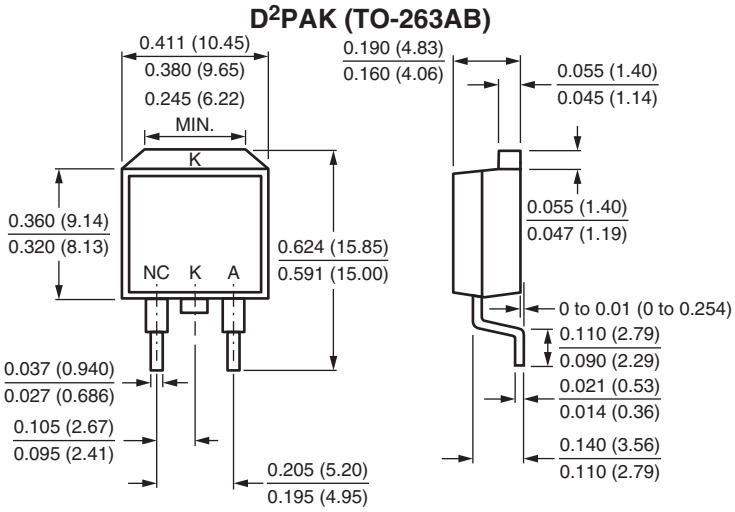
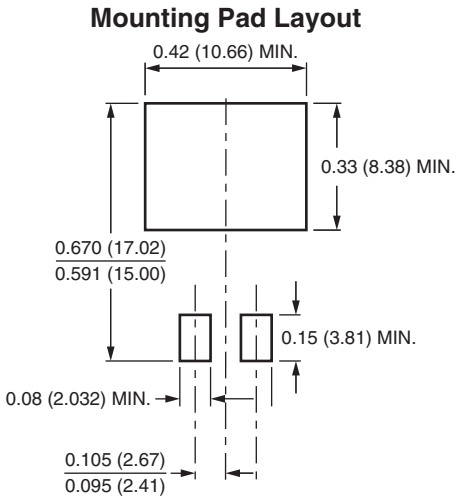


Fig. 6 - Typical Transient Thermal Impedance Per Device

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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