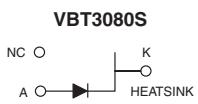
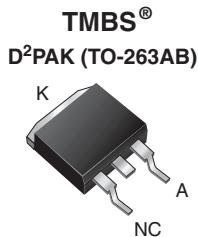


## Trench MOS Barrier Schottky Rectifier

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



### DESIGN SUPPORT TOOLS


[click logo to get started](#)

### 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](http://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.

### 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** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage (1)	$I_F = 5 \text{ A}$	$T_A = 25^\circ\text{C}$	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 (2)	$V_R = 80 \text{ V}$	$T_A = 25^\circ\text{C}$	70	1000	$\mu\text{A}$
		$T_A = 125^\circ\text{C}$	23	45	mA

**Notes**

(1) Pulse test: 300  $\mu\text{s}$  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	VBT3080S	UNIT
Typical thermal resistance	$R_{\text{th}JC}$	1.5	$^\circ\text{C}/\text{W}$

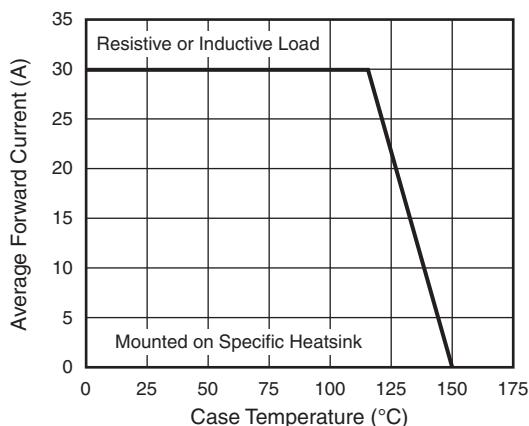
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

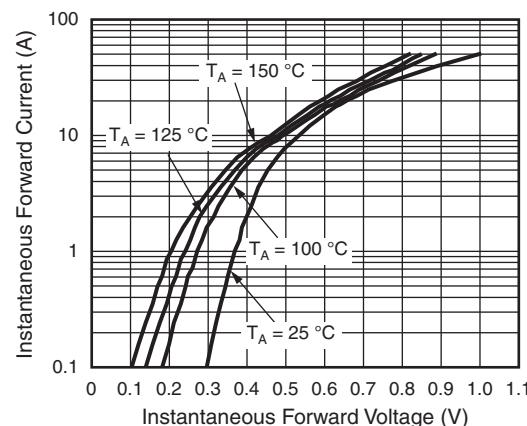


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

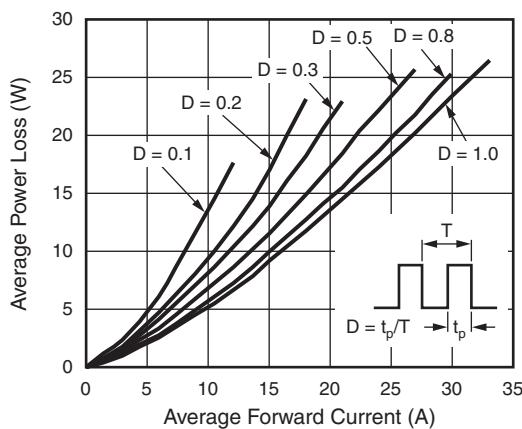


Fig. 2 - Forward Power Loss Characteristics Per Diode

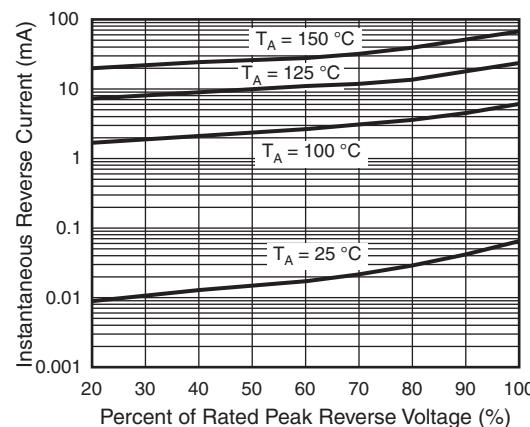


Fig. 4 - Typical Reverse Characteristics Per Diode

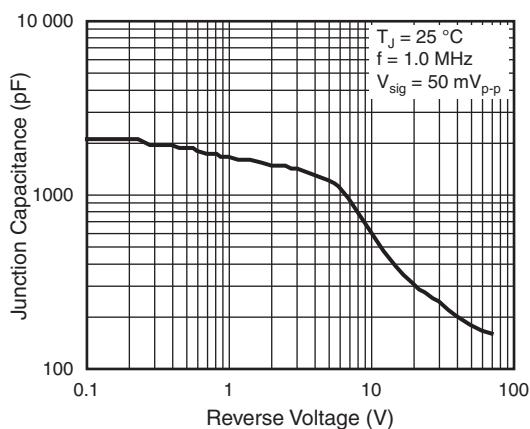


Fig. 5 - Typical Junction Capacitance Per Diode

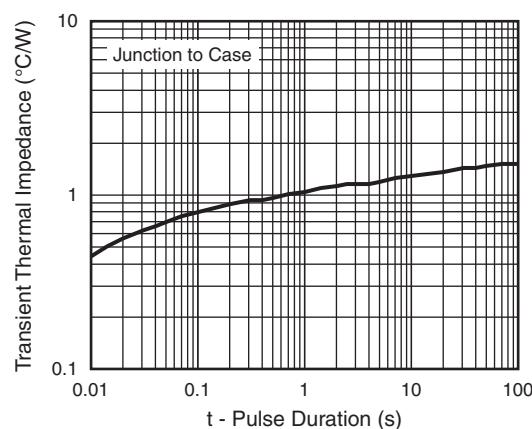
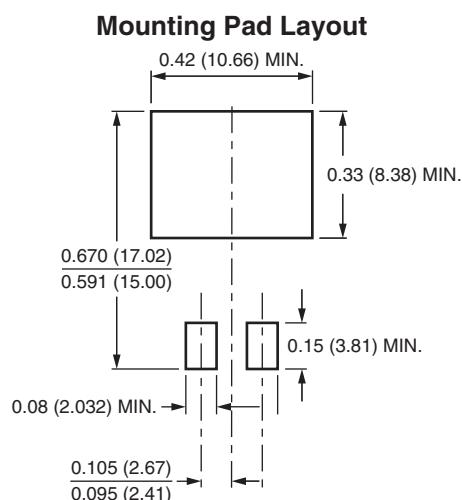
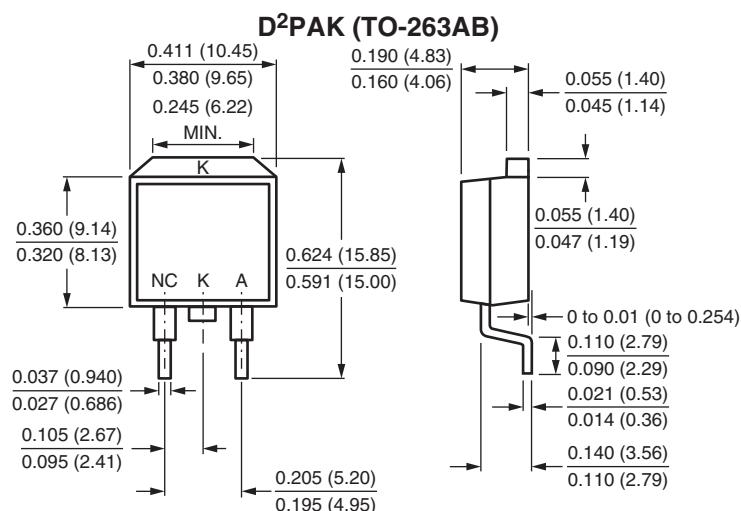


Fig. 6 - Typical Transient Thermal Impedance Per Device

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)



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