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[VBT3080C-M3/8W](#)

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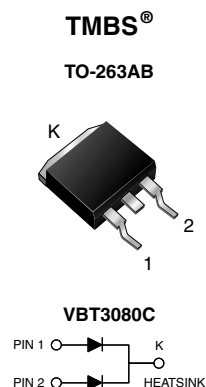
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## VBT3080C-M3

Vishay General Semiconductor

### Dual Trench MOS Barrier Schottky Rectifier

Ultra Low  $V_F = 0.46\text{ V}$  at  $I_F = 5\text{ A}$



#### 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:** 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	
Package	TO-263AB
$I_{F(AV)}$	2 x 15 A
$V_{RRM}$	80 V
$I_{FSM}$	150 A
$V_F$ at $I_F = 15\text{ A}$	0.65 V
$T_J$ max.	150 °C
Diode variation	Common cathode

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VBT3080C	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	80	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	per device	30
		per diode	15
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	150	A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150	°C

ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ °C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT			
Instantaneous forward voltage per diode <sup>(1)</sup>	$I_F = 5\text{ A}$	$V_F$			V			
						$T_A = 25\text{ °C}$	0.52	-
							$I_F = 7.5\text{ A}$	0.58
	$T_A = 125\text{ °C}$					$I_F = 15\text{ A}$	0.75	0.82
						$I_F = 5\text{ A}$	0.46	-
							$I_F = 7.5\text{ A}$	0.52
Reverse current per diode <sup>(2)</sup>	$V_R = 80\text{ V}$	$I_R$			μA			
						$T_A = 25\text{ °C}$	30	700
						$T_A = 125\text{ °C}$	20	35

#### Notes

<sup>(1)</sup> Pulse test: 300 μs pulse width, 1 % duty cycle

<sup>(2)</sup> Pulse test: Pulse width ≤ 40 ms



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THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER		SYMBOL	VBT3080C	UNIT
Typical thermal resistance	per diode	R <sub>θJC</sub>	2.5	°C/W
	per device		2.0	

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-263AB	VBT3080C-M3/4W	1.39	4W	50/tube	Tube
TO-263AB	VBT3080C-M3/8W	1.39	8W	800/reel	Tape and reel

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

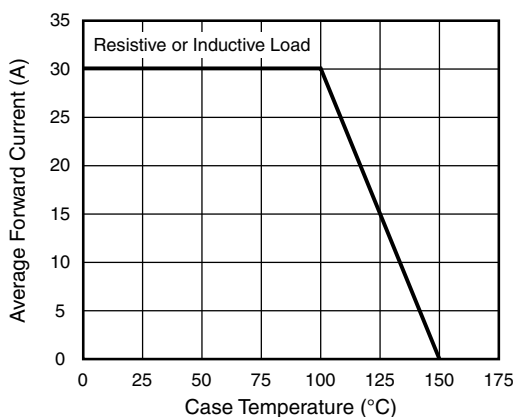


Fig. 1 - Maximum Forward Current Derating Curve

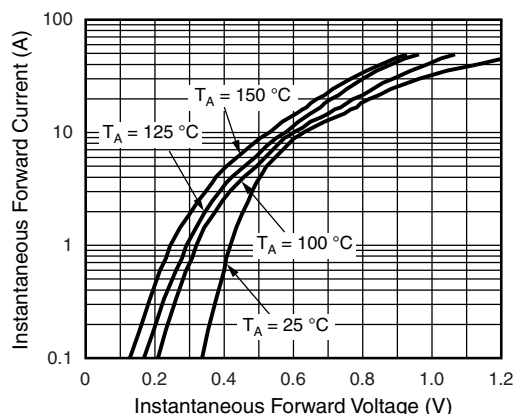


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

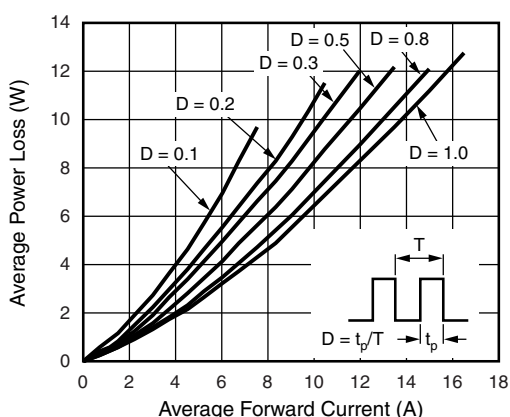


Fig. 2 - Forward Power Loss Characteristics Per Diode

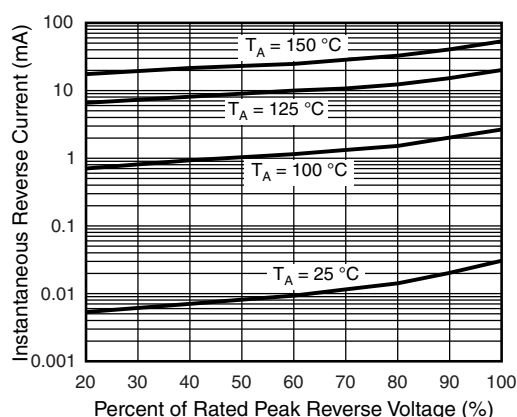


Fig. 4 - Typical Reverse Characteristics Per Diode



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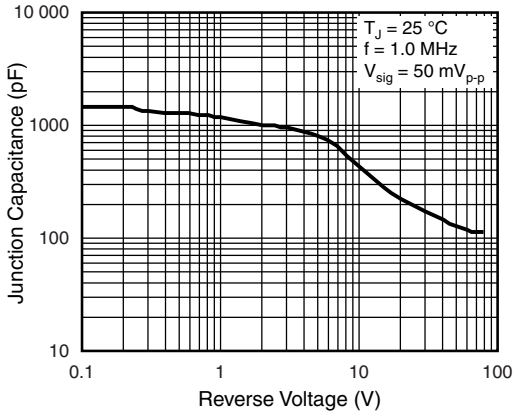


Fig. 5 - Typical Junction Capacitance Per Diode

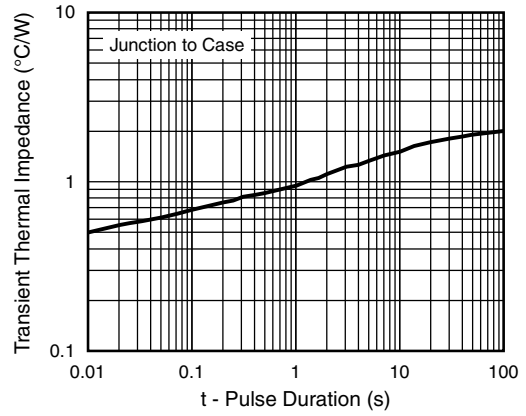
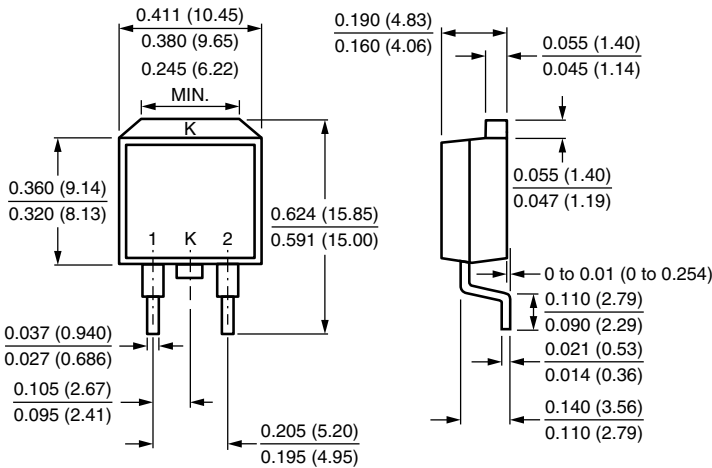


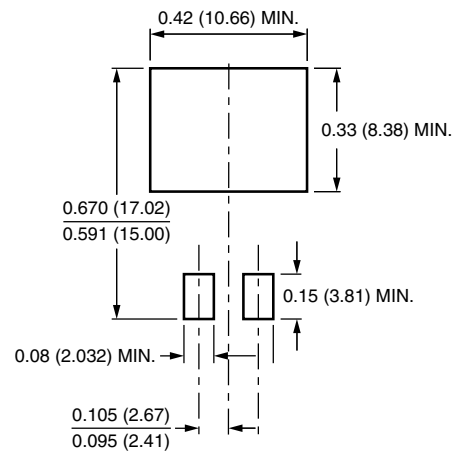
Fig. 6 - Typical Transient Thermal Impedance Per Device

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### TO-263AB



### Mounting Pad Layout





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