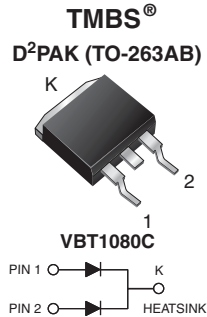


# Dual Trench MOS Barrier Schottky Rectifier

 Ultra Low  $V_F = 0.49\text{ V}$  at  $I_F = 3\text{ A}$ 

**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:** D<sup>2</sup>PAK (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	
$I_{F(AV)}$	2 x 5 A
$V_{RRM}$	80 V
$I_{FSM}$	80 A
$V_F$ at $I_F = 5\text{ A}$	0.57 V
$T_J$ max.	150 °C
Package	D <sup>2</sup> PAK (TO-263AB)
Circuit configurations	Common cathode

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VBT1080C	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	80	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	per device	10
		per diode	5
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	80	A
Voltage rate of change (rated $V_R$ )	dV/dt	10 000	V/ $\mu$ s
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>	$I_F = 3\text{ A}$	$V_F$	0.54	-	V	
	$I_F = 5\text{ A}$		0.63	0.72		
	$I_F = 3\text{ A}$		0.49	-		
	$I_F = 5\text{ A}$		0.57	0.66		
Reverse current per diode <sup>(2)</sup>	$V_R = 80\text{ V}$	$I_R$	$T_A = 25\text{ °C}$	12	400	$\mu$ A
			$T_A = 125\text{ °C}$	6	15	mA

**Notes**
<sup>(1)</sup> Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle

<sup>(2)</sup> Pulse test: Pulse width  $\leq 40\text{ ms}$



THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	VBT1080C	UNIT
Typical thermal resistance	per diode	$R_{\theta JC}$	3.5	$^\circ\text{C/W}$
	per device		2.5	

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-263AB	VBT1080C-M3/4W	1.35	4W	50/tube	Tube
TO-263AB	VBT1080C-M3/8W	1.35	8W	800/reel	Tape and reel

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

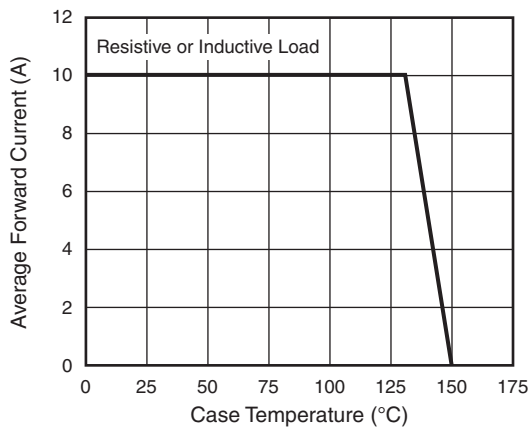


Fig. 1 - Maximum Forward Current Derating Curve

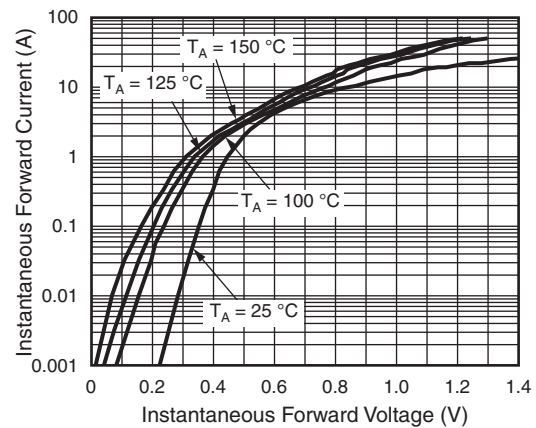


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

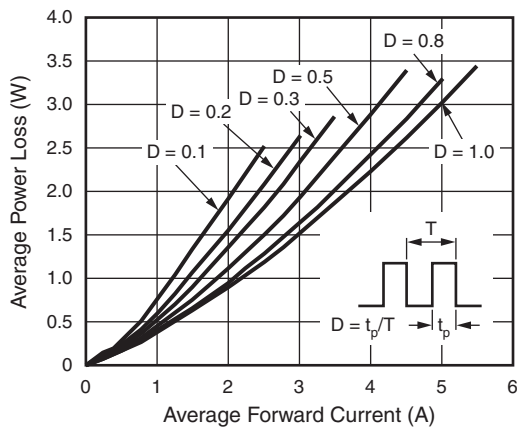


Fig. 2 - Forward Power Loss Characteristics Per Diode

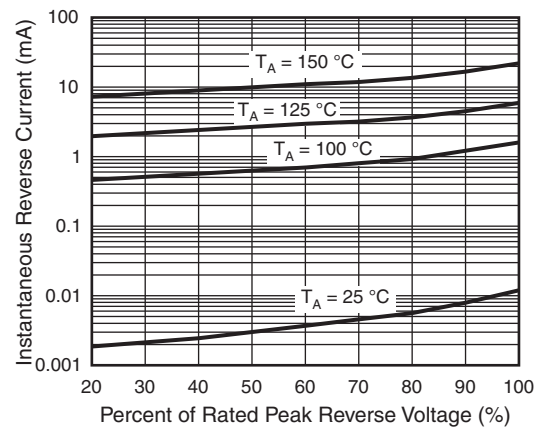


Fig. 4 - Typical Reverse Characteristics Per Diode

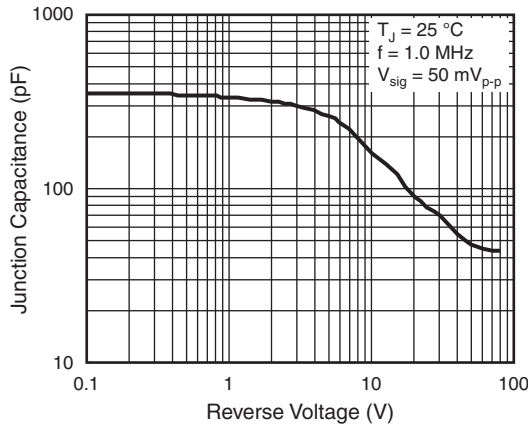


Fig. 5 - Typical Junction Capacitance Per Diode

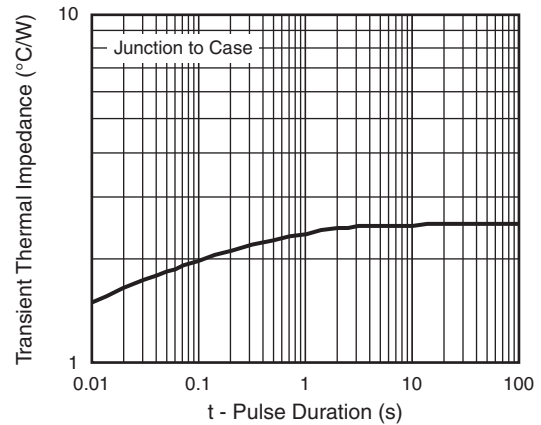
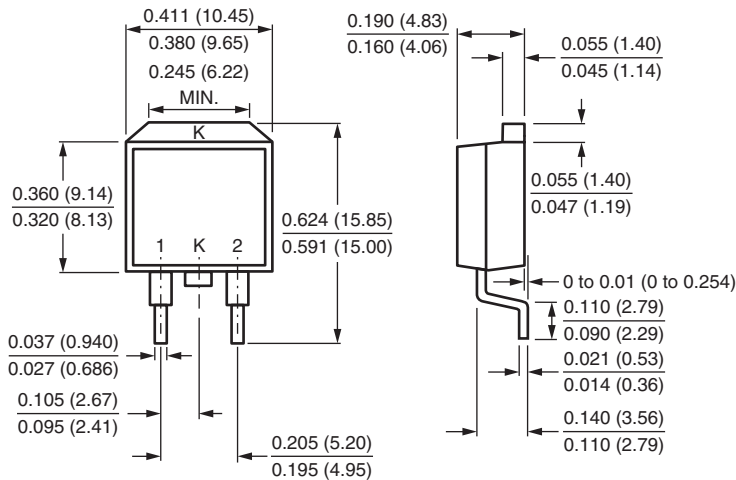


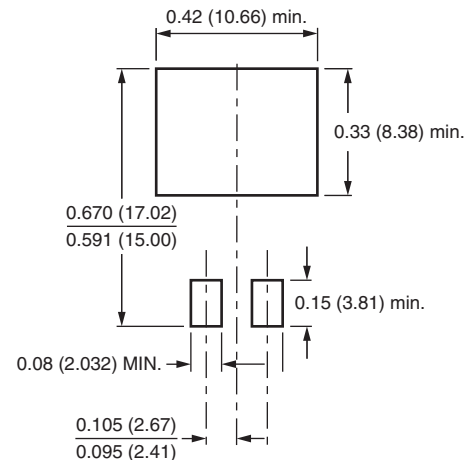
Fig. 6 - Typical Transient Thermal Impedance Per Diode

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

**D<sup>2</sup>PAK (TO-263AB)**



**Mounting Pad Layout**





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