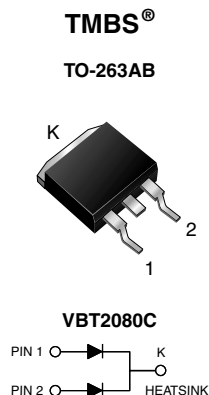


Dual Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.52 \text{ V}$ 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



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 10 A
V_{RRM}	80 V
I_{FSM}	100 A
V_F at $I_F = 10 \text{ A}$	0.60 V
$T_J \text{ max.}$	150 °C
Diode variation	Common cathode

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VB2080C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	80	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	20	A
per device		10	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	100	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 per diode ⁽¹⁾	I _F = 5 A	T _A = 25 °C	V _F	0.57	-	V
	I _F = 10 A			0.67	0.81	
	I _F = 5 A	T _A = 125 °C		0.52	-	
	I _F = 10 A			0.60	0.70	
Reverse current per diode ⁽²⁾	V _R = 80 V	T _A = 25 °C	I _R	20	600	μA
		T _A = 125 °C		10	20	mA

Notes

⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle

⁽²⁾ Pulse test: Pulse width ≤ 40 ms

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

PARAMETER		SYMBOL	VBT2080C	UNIT
Typical thermal resistance	per diode	$R_{\theta JC}$	3.0	$^{\circ}\text{C/W}$
	per device		2.0	

ORDERING INFORMATION (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-263AB	VBT2080C-M3/4W	1.36	4W	50/tube	Tube
TO-263AB	VBT2080C-M3/8W	1.36	8W	800/reel	Tape and reel

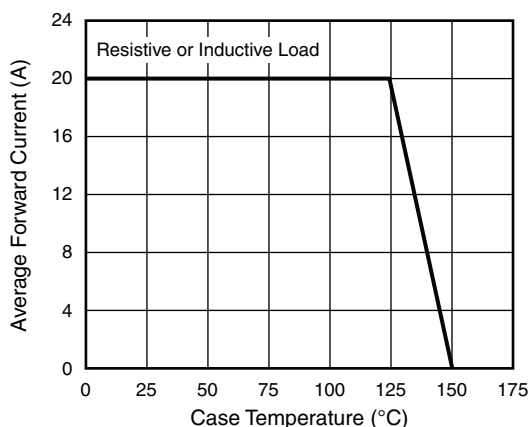
RATINGS AND CHARACTERISTICS CURVES($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

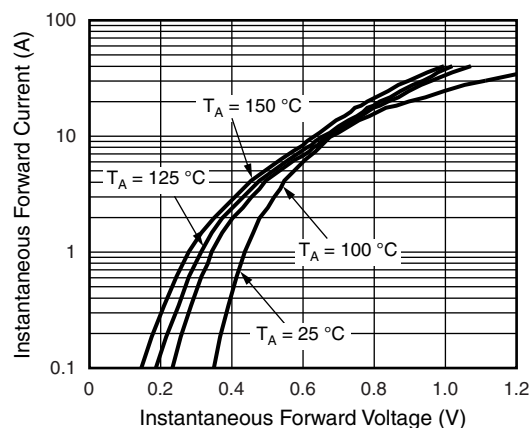


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

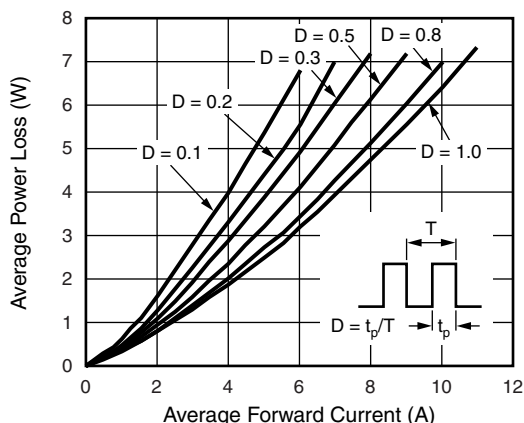


Fig. 2 - Forward Power Loss Characteristics Per Diode

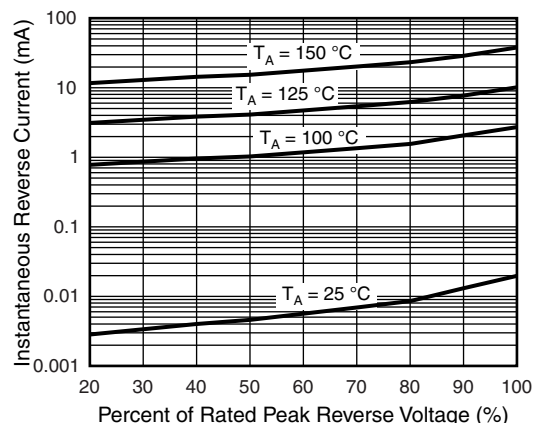


Fig. 4 - Typical Reverse Characteristics Per Diode

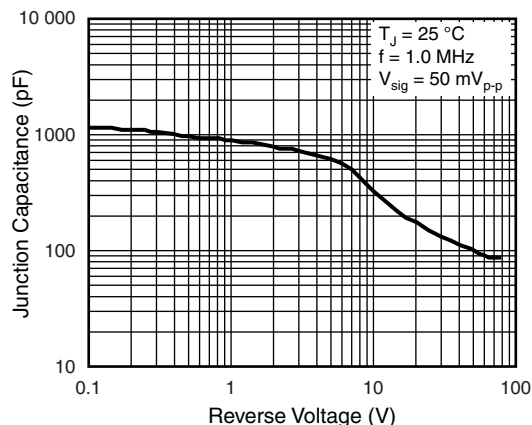


Fig. 5 - Typical Junction Capacitance Per Diode

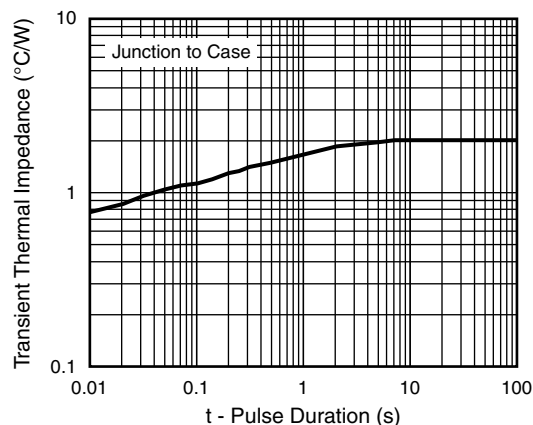
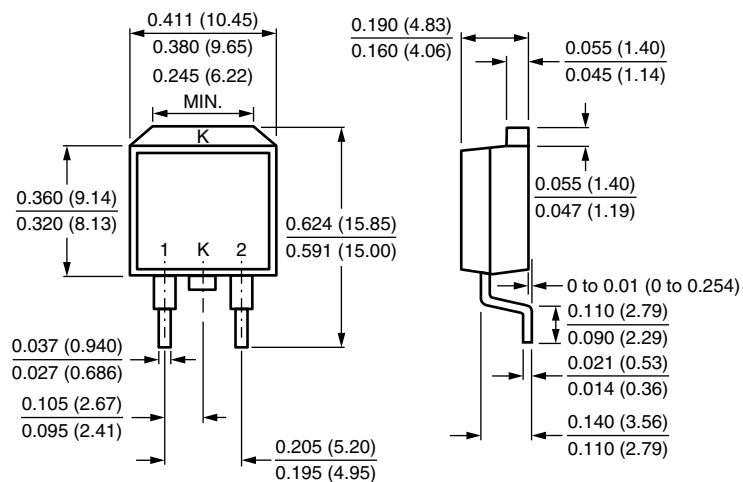
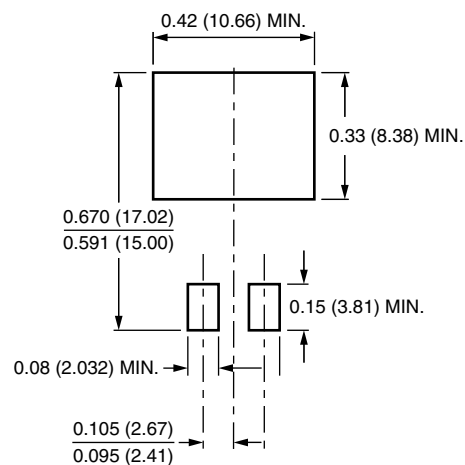


Fig. 6 - Typical Transient Thermal Impedance Per Device

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-263AB

Mounting Pad Layout




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