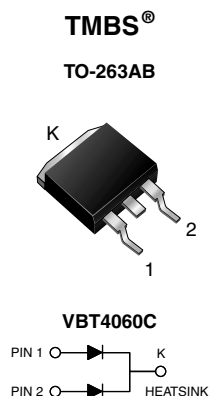


# Dual Trench MOS Barrier Schottky Rectifier

Ultra Low  $V_F = 0.32\text{ V}$  at  $I_F = 5.0\text{ A}$



## 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.

## PRIMARY CHARACTERISTICS

Package	TO-263AB
$I_{F(AV)}$	2 x 20 A
$V_{RRM}$	60 V
$I_{FSM}$	240 A
$V_F$ at $I_F = 20\text{ A}$	0.48 V
$T_J$ max.	150 °C
Diode variation	Common cathode

## 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

## MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	VB T4060C	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	60	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	40 20	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	240	A
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000	V/ $\mu$ s
Operating junction and storage temperature range	$T_J, T_{STG}$	- 40 to + 150	°C

## ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MIN.	UNIT
Instantaneous forward voltage per diode <sup>(1)</sup>	$I_F = 5.0\text{ A}$	$V_F$	0.43	-	V
	$I_F = 10\text{ A}$		0.48	-	
	$I_F = 20\text{ A}$		0.53	0.62	
	$I_F = 5.0\text{ A}$		0.32	-	
	$I_F = 10\text{ A}$		0.39	-	
	$I_F = 20\text{ A}$		0.48	0.57	
Reverse current per diode <sup>(2)</sup>	$V_R = 60\text{ V}$	$I_R$	-	6.0	mA
			34	190	

### 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	VBT4060C	UNIT
Typical thermal resistance	per diode	$R_{\theta JC}$	1.5	$^{\circ}\text{C/W}$
	per device		0.8	

**ORDERING INFORMATION** (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-263AB	VBT4060C-M3/4W	1.39	4W	50/tube	Tube
TO-263AB	VBT4060C-M3/8W	1.39	8W	800/reel	Tape and reel

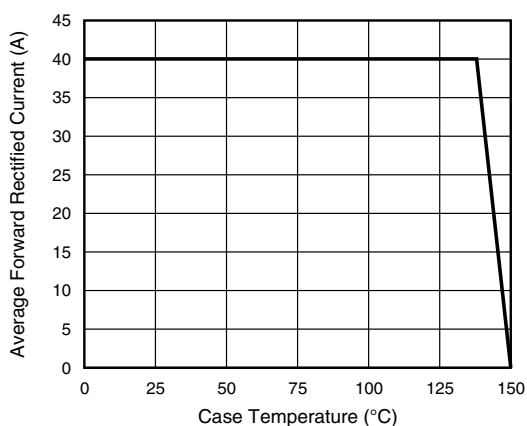
**RATINGS AND CHARACTERISTICS CURVES**( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

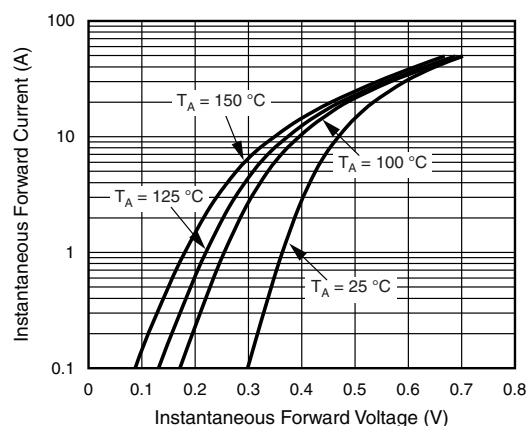


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

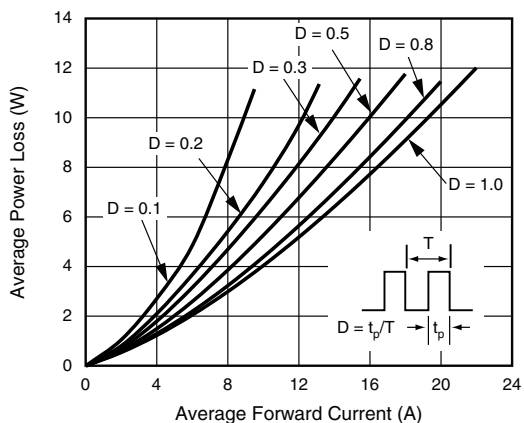


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

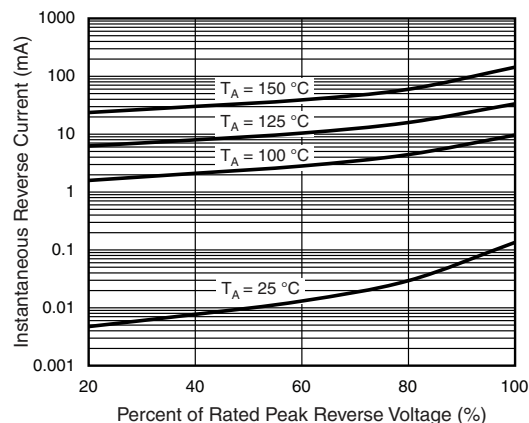


Fig. 4 - Typical Reverse Characteristics Per Diode

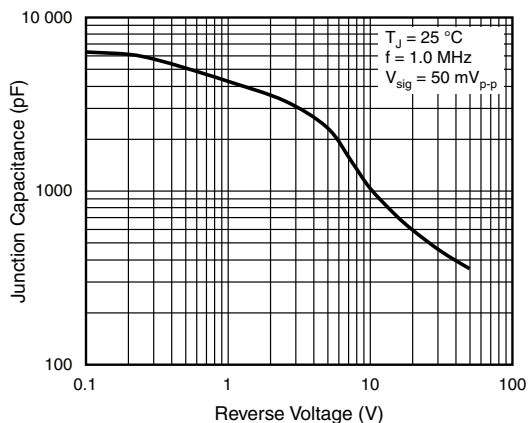


Fig. 5 - Typical Junction Capacitance Per Diode

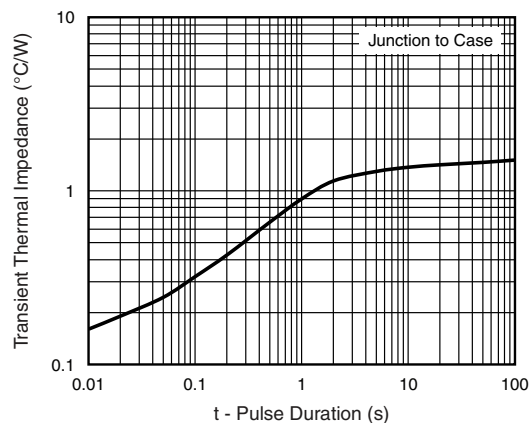
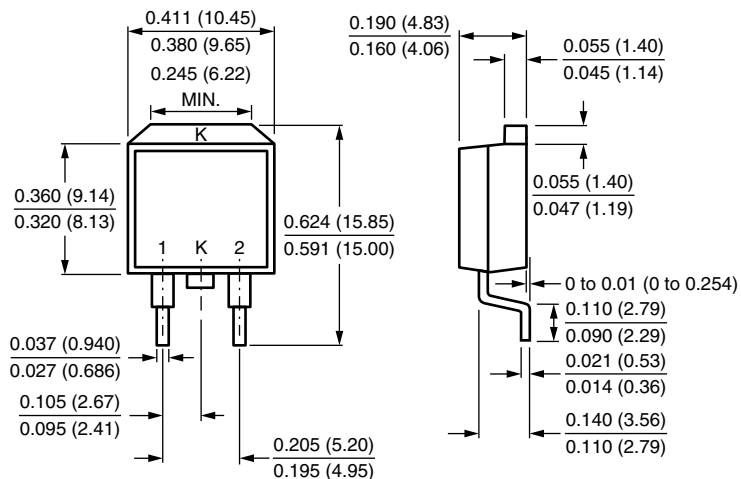
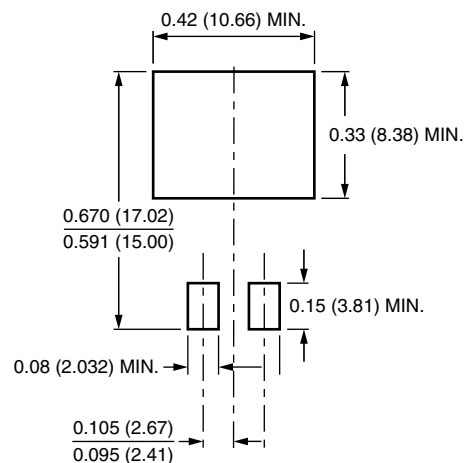


Fig. 6 - Typical Transient Thermal Impedance Per Diode

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

**TO-263AB**

**Mounting Pad Layout**




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