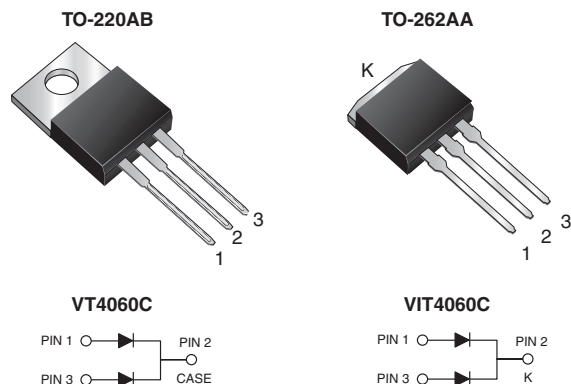


# Dual TMBS® (Trench MOS Barrier Schottky) Rectifier

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
- Solder dip  $275\text{ }^{\circ}\text{C}$  max. 10 s, per JESD 22-B106
- 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-220AB and TO-262AA

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-M3 - halogen-free, RoHS-compliant

**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 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 $^{\circ}\text{C}$
Package	TO-220AB, TO-262AA
Circuit configuration	Common cathode

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

PARAMETER	SYMBOL	VT4060C	VIT4060C	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	60		V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	40		A
		20		
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/ $\mu\text{s}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-40 to +150		$^{\circ}\text{C}$

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

PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode	$I_F = 5.0\text{ A}$	$V_F^{(1)}$	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	$V_R = 60\text{ V}$	$I_R^{(2)}$	-	6.0	mA
	$T_A = 125\text{ }^{\circ}\text{C}$		34	190	

### Notes

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

(2) Pulse test: Pulse width  $\leq 40\text{ ms}$

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

PARAMETER		SYMBOL	VT4060C	VIT4060C	UNIT
Typical thermal resistance	per diode	R <sub>θJC</sub>	1.5		°C/W
	per device		0.8		

**ORDERING INFORMATION** (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	VT4060C-M3/4W	1.89	4W	50/tube	Tube
TO-262AA	VIT4060C-M3/4W	1.46	4W	50/tube	Tube

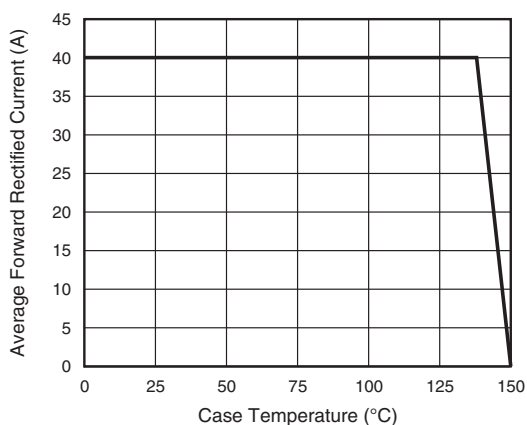
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

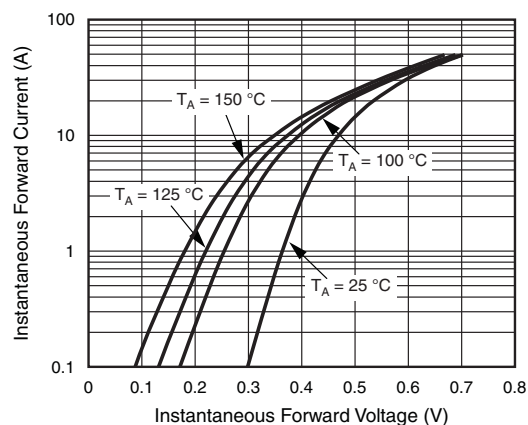


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

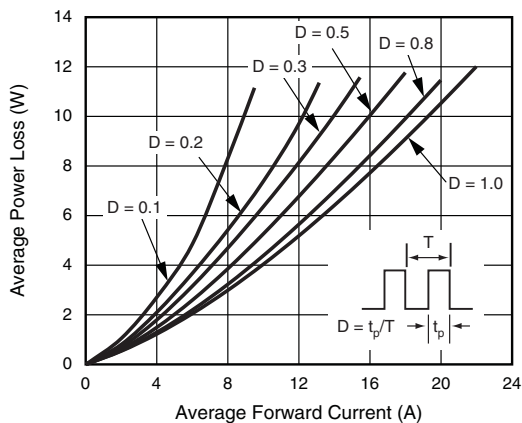


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

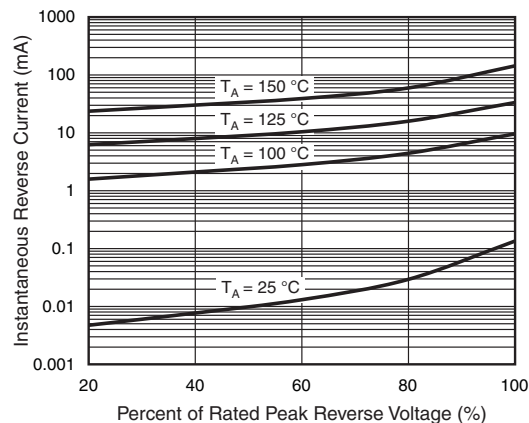


Fig. 4 - Typical Reverse Characteristics Per Diode

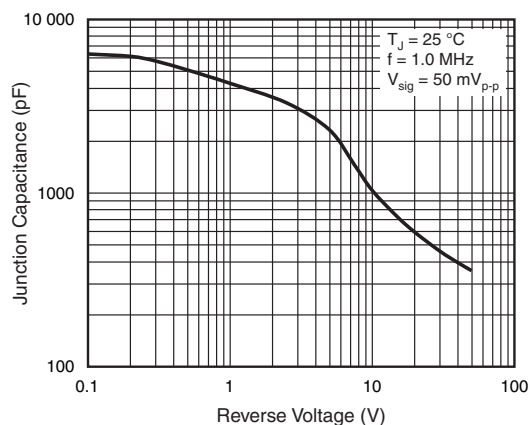


Fig. 5 - Typical Junction Capacitance Per Diode

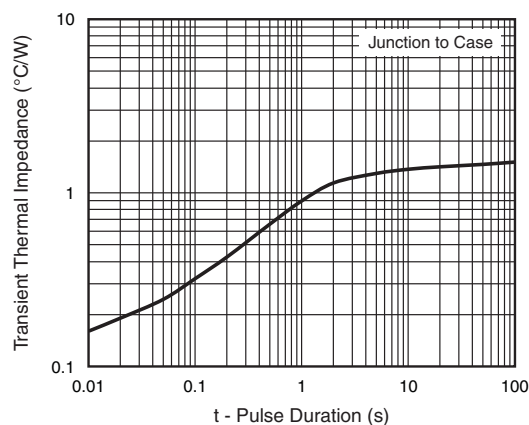
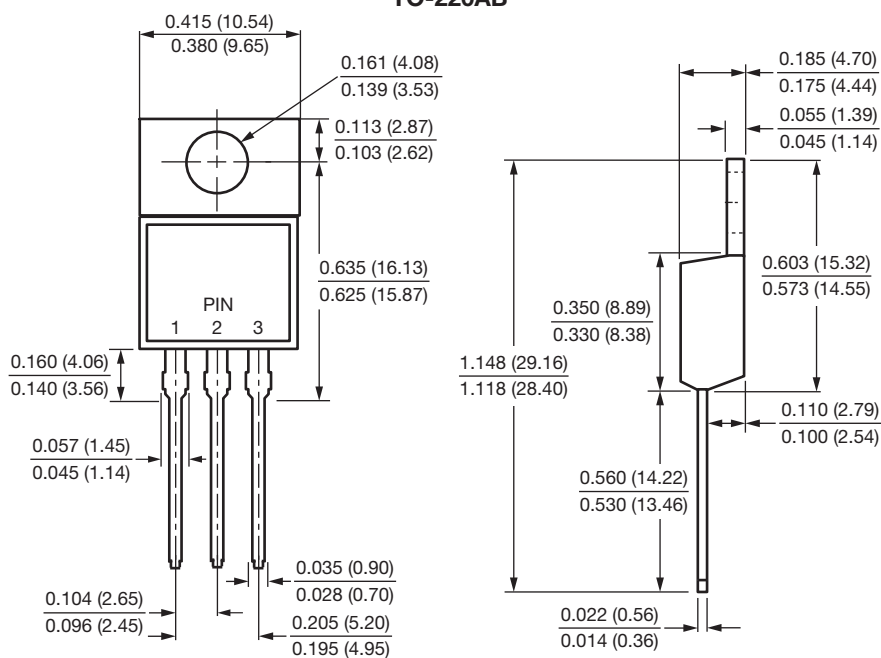
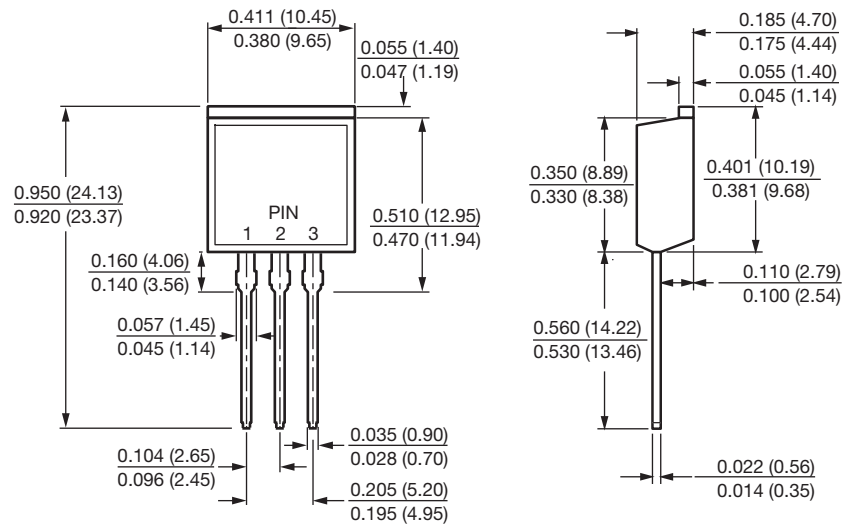


Fig. 6 - Typical Transient Thermal Impedance Per Diode

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

**TO-220AB**


**TO-262AA**




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