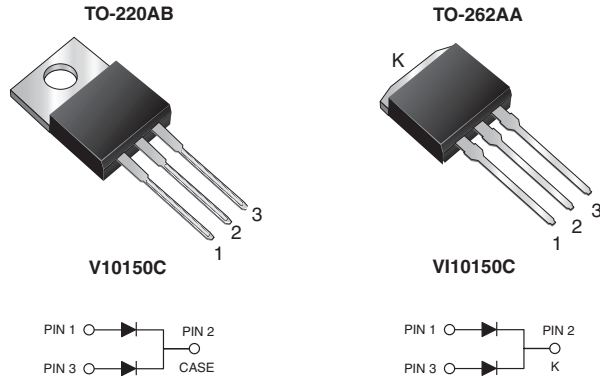


# Dual High Voltage TMBS<sup>®</sup> (Trench MOS Barrier Schottky) Rectifier

 Ultra Low  $V_F = 0.63$  at  $I_F = 3$  A


## FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder dip 275 °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 DC/DC converters, switching power supplies, freewheeling diodes, OR-ing diode, 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, 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 max.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 5.0 A
$V_{RRM}$	150 V
$I_{FSM}$	60 A
$V_F$ at $I_F = 5$ A	0.69 V
$T_J$ max.	150 °C
Package	TO-220AB, TO-262AA
Circuit configurations	Common cathode

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	V10150C	VI10150C	UNIT
Max. repetitive peak reverse voltage	$V_{RRM}$	150		V
Max. average forward rectified current (fig. 1)	$I_{F(AV)}$	per device	10	A
		per diode	5.0	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	60		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 ( $T_A = 25$ °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode	$I_F = 3$ A	$T_A = 25$ °C	$V_F^{(1)}$	0.82	-	V
				$I_F = 5$ A	0.99	
	$I_F = 3$ A	$T_A = 125$ °C		0.63	-	
				$I_F = 5$ A	0.69	
Reverse current per diode	$V_R = 100$ V	$T_A = 25$ °C	$I_R^{(2)}$	0.5	-	$\mu$ A
				$T_A = 125$ °C	0.5	-
	$V_R = 150$ V	$T_A = 25$ °C		-	100	$\mu$ A
				$T_A = 125$ °C	1.0	10

### Notes

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

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



THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	V10150C	VI10150C	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	4.0		$^\circ\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	V10150C-M3/4W	1.87	4W	50/tube	Tube
TO-262AA	VI10150C-M3/4W	1.45	4W	50/tube	Tube

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

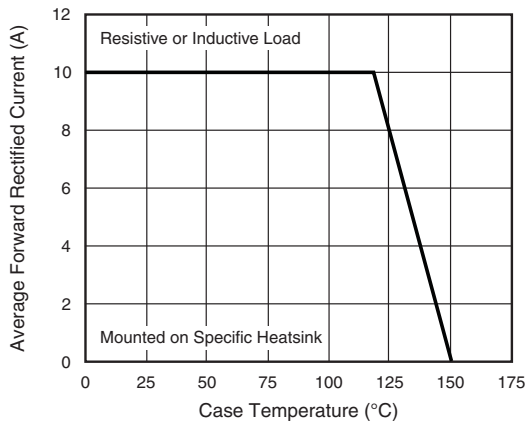


Fig. 1 - Maximum Forward Current Derating Curve

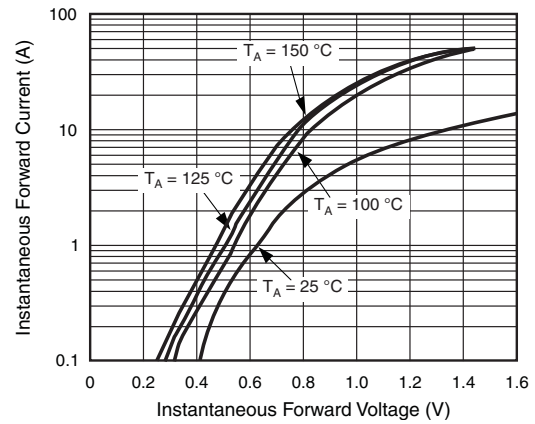


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

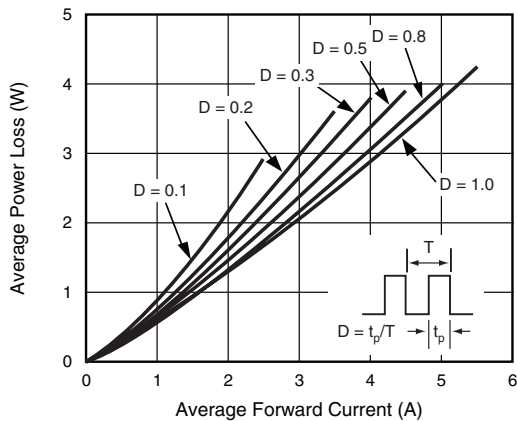


Fig. 2 - Forward Power Loss Characteristics Per Diode

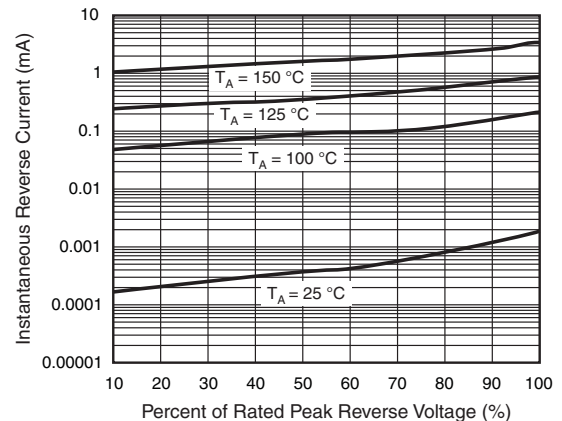


Fig. 4 - Typical Reverse Characteristics Per Diode

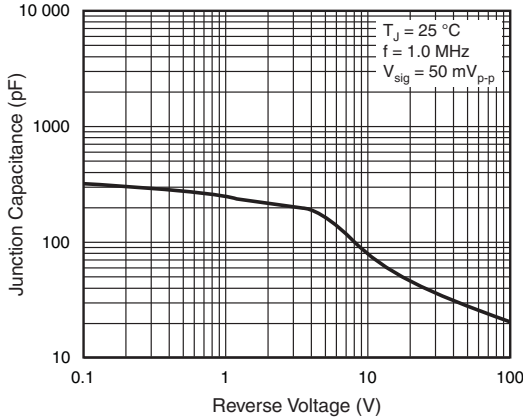


Fig. 5 - Typical Junction Capacitance Per Diode

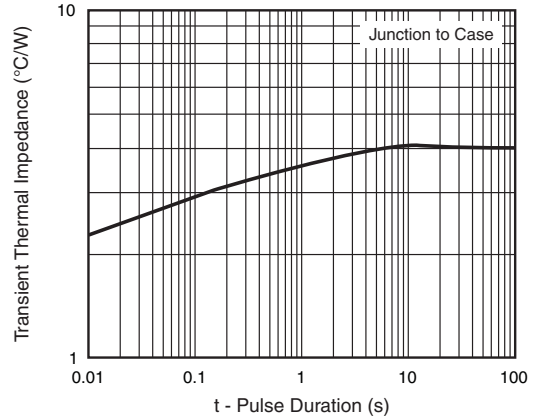
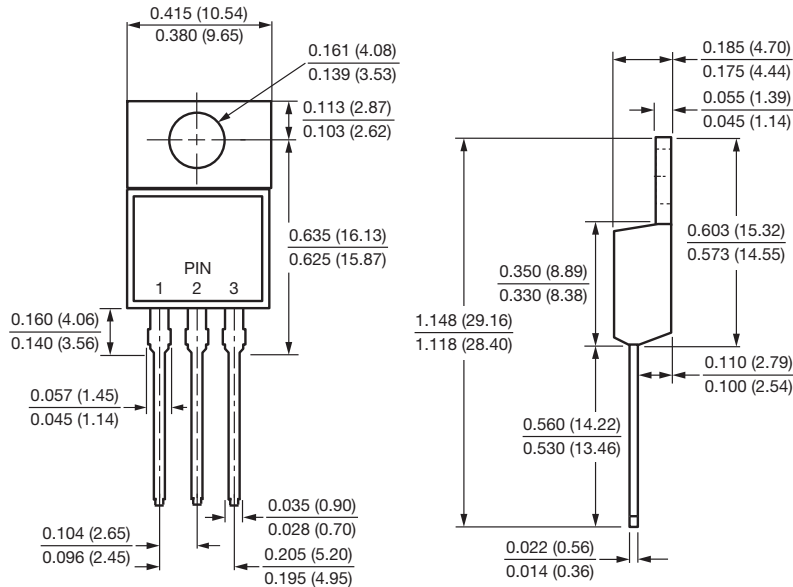


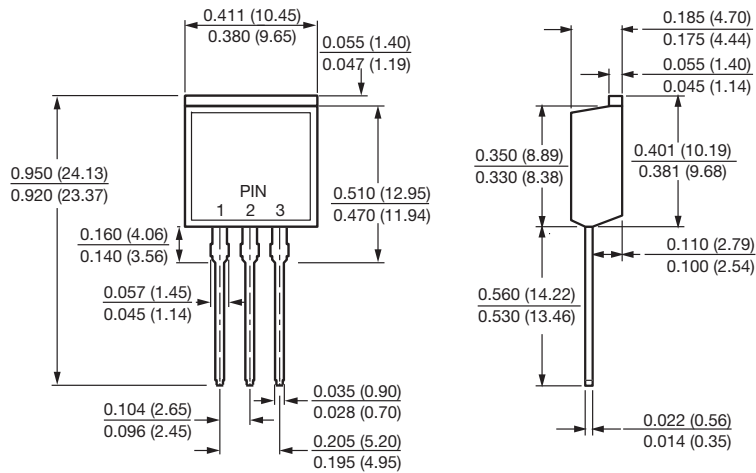
Fig. 6 - Typical Transient Thermal Impedance Per Diode

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

**TO-220AB**



**TO-262AA**





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