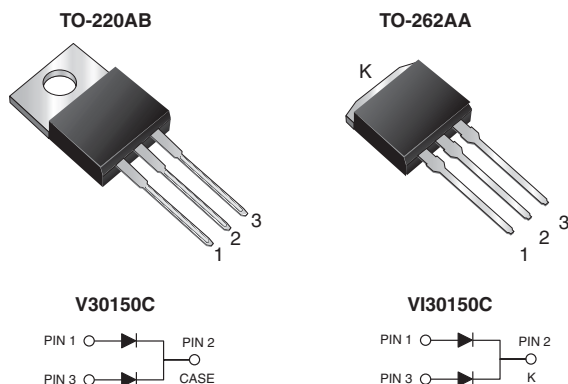


# Dual High-Voltage TMBS® (Trench MOS Barrier Schottky) Rectifier

Ultra Low  $V_F = 0.56\text{ V}$  at  $I_F = 5\text{ A}$



## FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder bath temperature 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 maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 15 A
$V_{RRM}$	150 V
$I_{FSM}$	140 A
$V_F$ at $I_F = 15\text{ A}$	0.71 V
$T_J$ max.	150 °C
Package	TO-220AB, TO-262AA
Circuit configuration	Common cathode

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	V30150C	VI30150C	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	150		V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	30		A
		15		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	140		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 <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode	I <sub>F</sub> = 5 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.72	-	V
	I <sub>F</sub> = 7.5 A			0.81	-	
	I <sub>F</sub> = 15 A			1.11	1.36	
	I <sub>F</sub> = 5 A	T <sub>A</sub> = 125 °C		0.56	-	
	I <sub>F</sub> = 7.5 A			0.61	-	
	I <sub>F</sub> = 15 A			0.71	0.79	
Reverse current per diode	V <sub>R</sub> = 100 V	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	1.5	-	μA
		T <sub>A</sub> = 125 °C		2	-	mA
	V <sub>R</sub> = 150 V	T <sub>A</sub> = 25 °C		-	200	μA
		T <sub>A</sub> = 125 °C		4	20	mA

### Notes

(1) Pulse test: 300  $\mu$ 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	V30150C	VI30150C	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	2.2		$^{\circ}\text{C/W}$

**ORDERING INFORMATION** (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	V30150C-M3/4W	1.89	4W	50/tube	Tube
TO-262AA	VI30150C-M3/4W	1.46	4W	50/tube	Tube

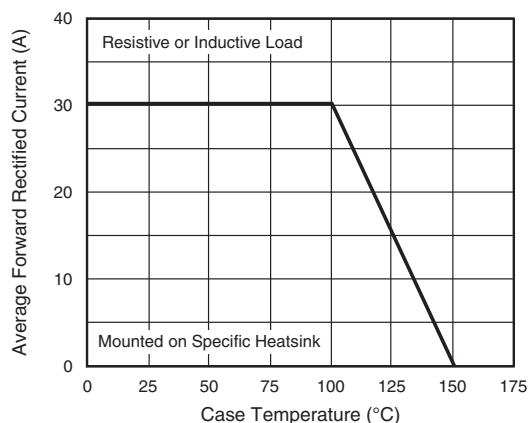
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

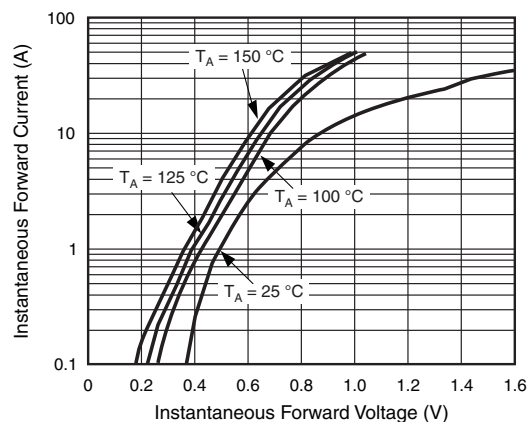


Fig. 3 - Typical Instantaneous Forward Characteristics

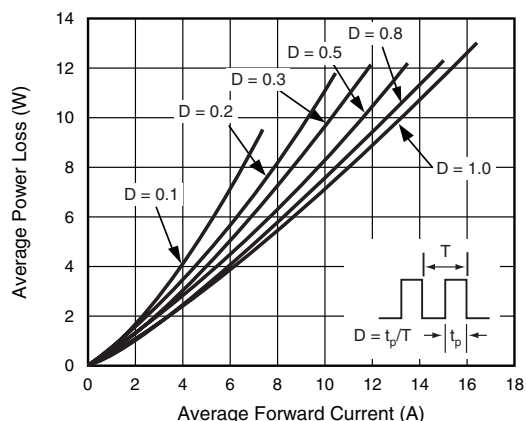


Fig. 2 - Forward Power Dissipation Characteristics

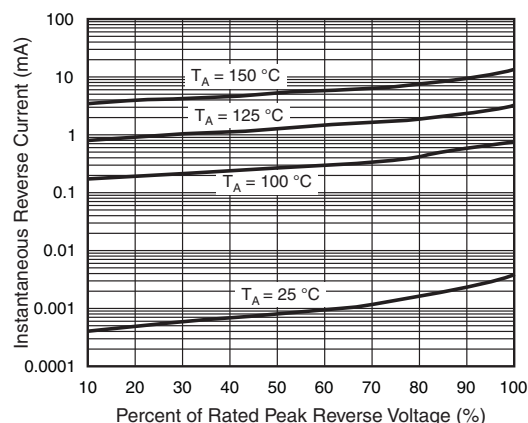


Fig. 4 - Typical Reverse Characteristics

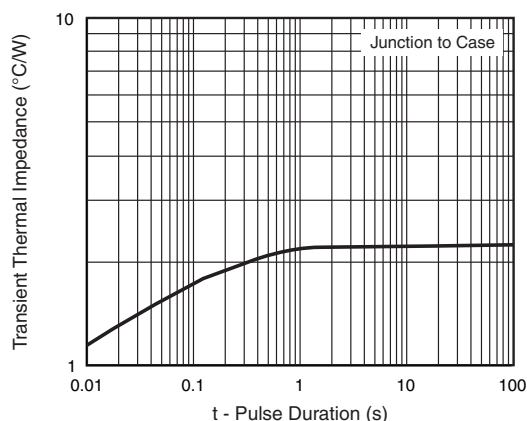


Fig. 5 - Typical Transient Thermal Impedance

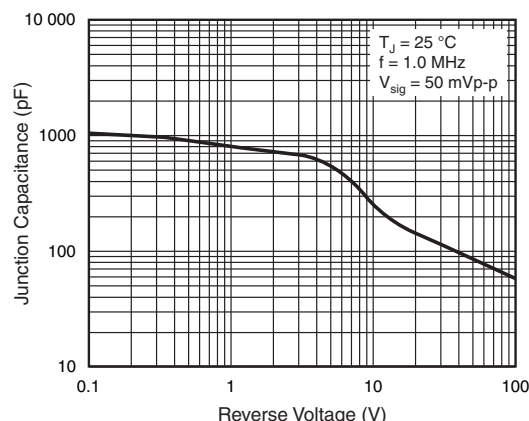
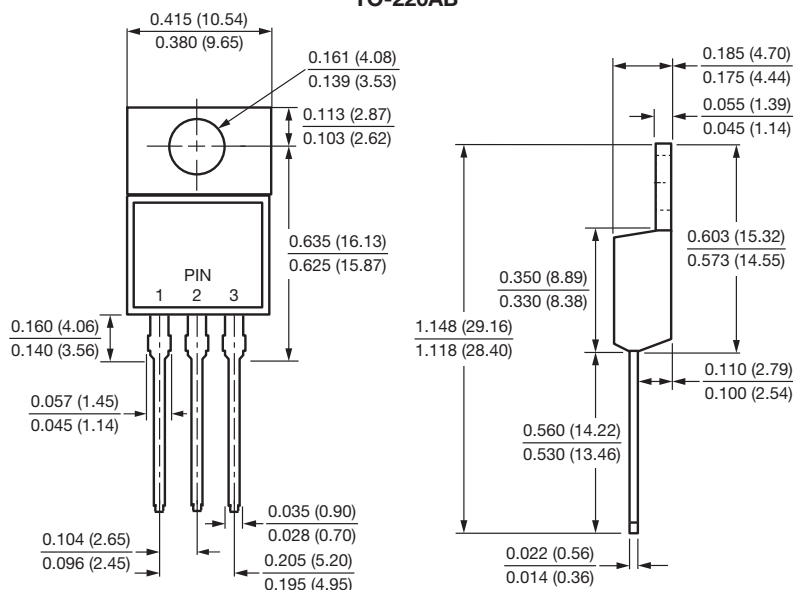
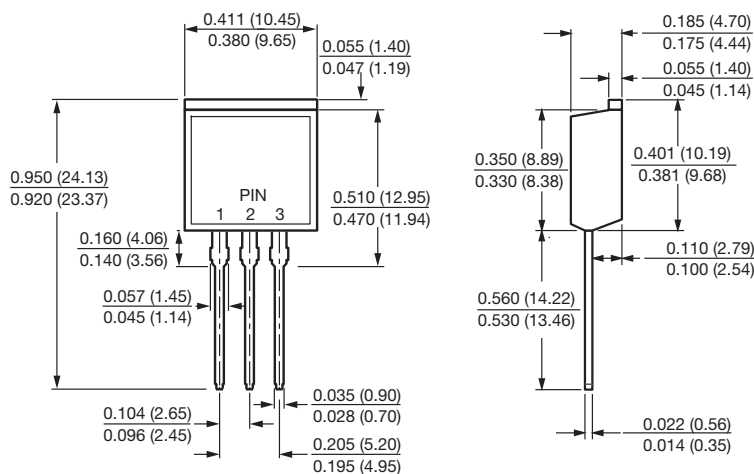


Fig. 6 - Typical Junction Capacitance

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

**TO-220AB**

**TO-262AA**




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