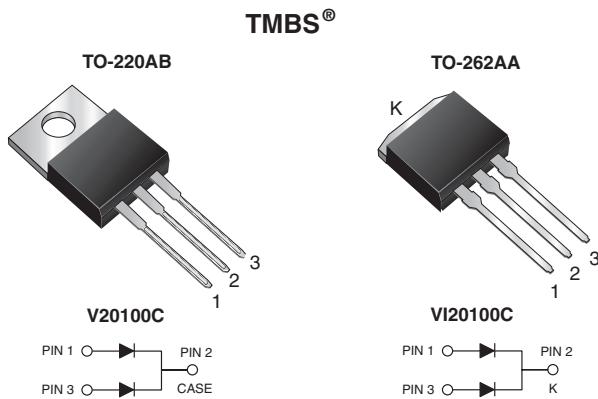


Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.50 V at I_F = 5 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
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see 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

Base P/NHM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs max.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 10 A
V_{RRM}	100 V
I_{FSM}	150 A
V_F at I_F = 10 A	0.58 V
T_J max.	150 °C
Package	TO-220AB, TO-262AA
Diode variation	Common cathode

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	V20100C	VI20100C	UNIT
Max. repetitive peak reverse voltage	V_{RRM}	100		V
Max. average forward rectified current (fig. 1)	per device	20		A
	per diode	10		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	150		A
Voltage rate of change (rated V_R)	dV/dt	10 000		V/μs
Operating junction and storage temperature range	T_J, T_{STG}	- 40 to + 150		°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	$I_F = 5 \text{ A}$	$T_A = 25^\circ\text{C}$	$V_F^{(1)}$	0.55	-	V	
	$I_F = 10 \text{ A}$			0.65	0.79		
	$I_F = 5 \text{ A}$	$T_A = 125^\circ\text{C}$		0.50	-		
	$I_F = 10 \text{ A}$			0.58	0.68		
Reverse current per diode	$V_R = 70 \text{ V}$	$T_A = 25^\circ\text{C}$	$I_R^{(2)}$	17	-	μA	
		$T_A = 125^\circ\text{C}$		5.3	-	mA	
	$V_R = 100 \text{ V}$	$T_A = 25^\circ\text{C}$		-	800	μA	
		$T_A = 125^\circ\text{C}$		12	25	mA	

Notes

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

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

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	V20100C	VI20100C	UNIT	
Typical thermal resistance per diode	$R_{\theta\text{JC}}$	2.8		$^\circ\text{C/W}$	

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	V20100C-M3/4W	1.881	4W	50/tube	Tube
TO-262AA	VI20100C-M3/4W	1.45	4W	50/tube	Tube
TO-220AB	V20100CHM3/4W ⁽¹⁾	1.881	4W	50/tube	Tube
TO-262AA	VI20100CHM3/4W ⁽¹⁾	1.45	4W	50/tube	Tube

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

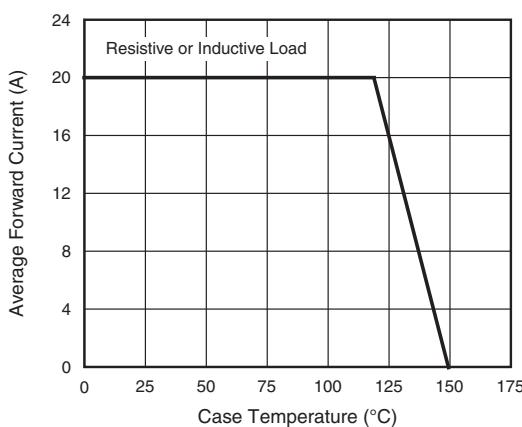


Fig. 1 - Maximum Forward Current Derating Curve

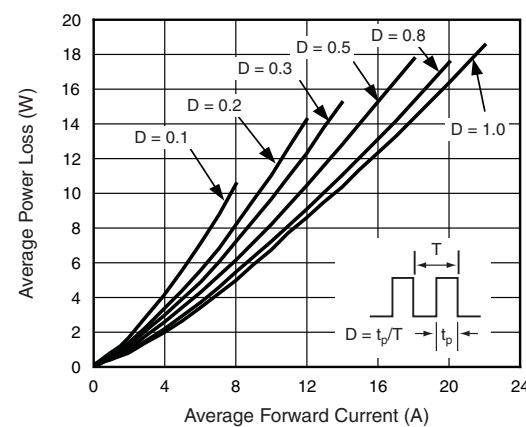


Fig. 2 - Forward Power Loss Characteristics Per Diode

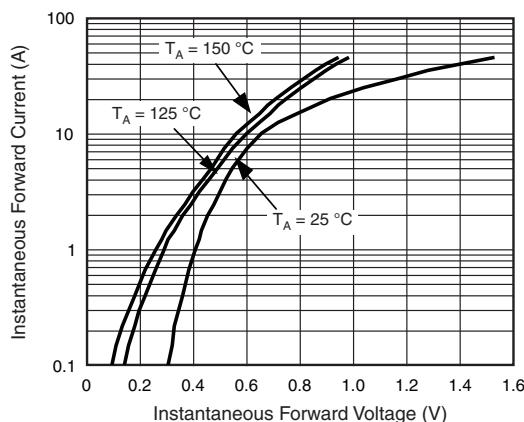


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

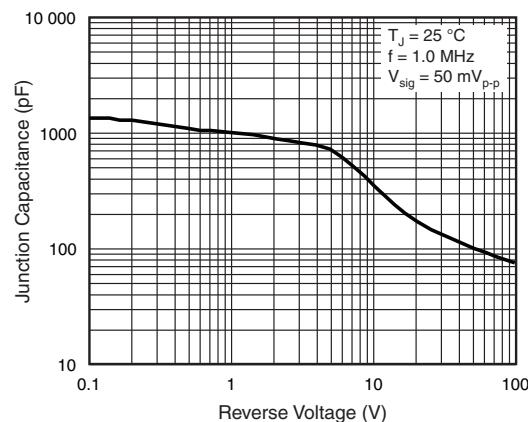


Fig. 5 - Typical Junction Capacitance Per Diode

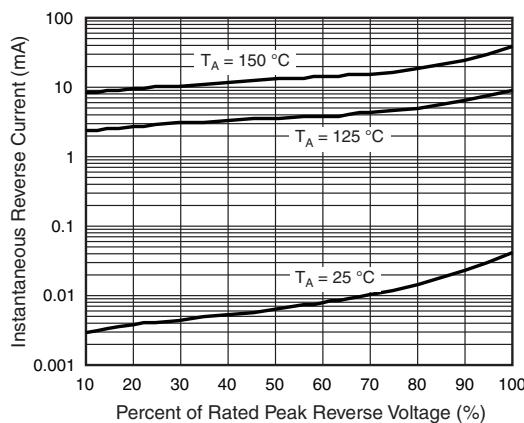


Fig. 4 - Typical Reverse Characteristics Per Diode

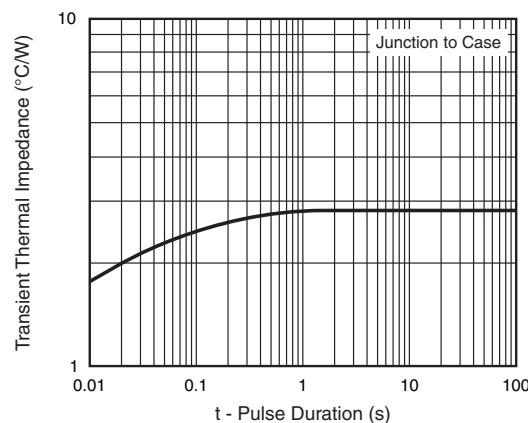
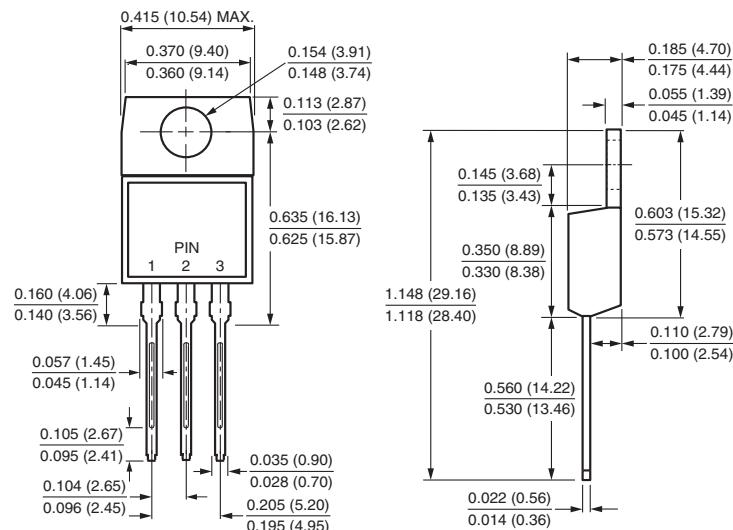
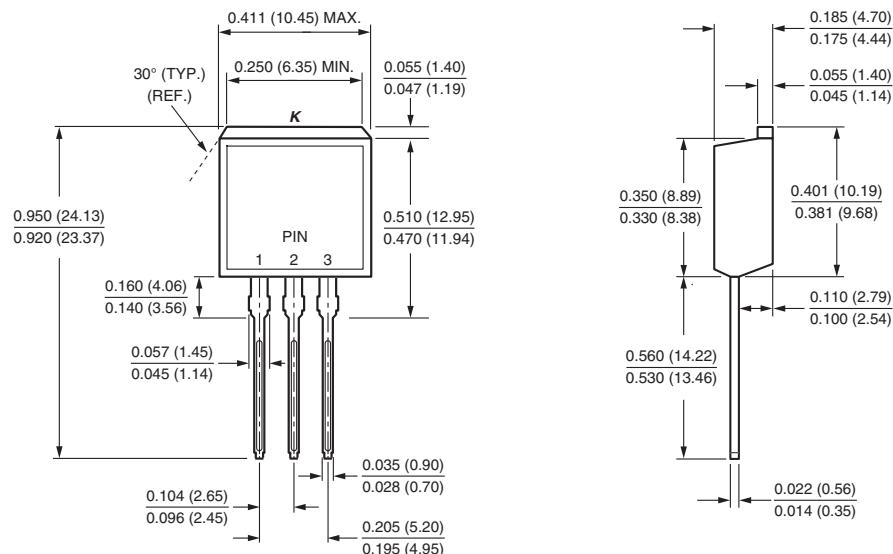


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB

TO-262AA


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