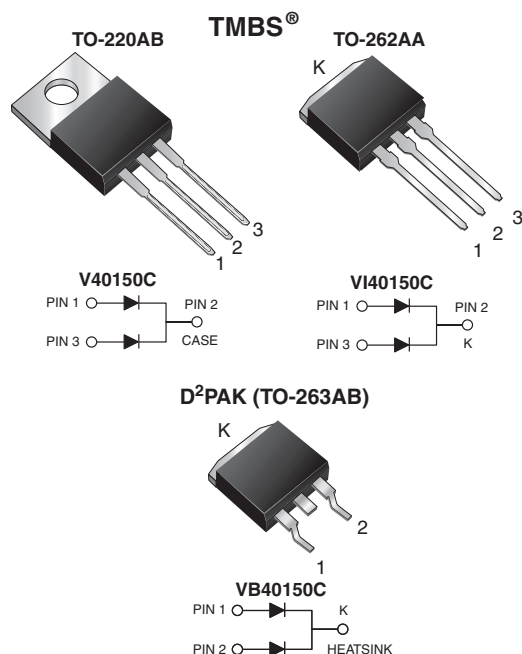


Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.55 \text{ V}$ at $I_F = 5 \text{ A}$



DESIGN SUPPORT TOOLS



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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
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- 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, TO-262AA, and D²PAK (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

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 20 A
V_{RRM}	150 V
I_{FSM}	160 A
V_F at $I_F = 20 \text{ A}$	0.75 V
T_J max.	150 °C
Package	TO-220AB, TO-262AA, D ² PAK (TO-263AB)
Circuit configuration	Common cathode

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

PARAMETER	SYMBOL	V40150C	VB40150C	VI40150C	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	150			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}	160			A
Voltage rate of change (rated V _R)	dV/dt	10 000			V/μs
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150			°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 A	T _A = 25 °C	V _F ⁽¹⁾	0.69	-	V
	I _F = 10 A			0.84	-	
	I _F = 20 A			1.15	1.43	
	I _F = 5 A	T _A = 125 °C		0.55	-	
	I _F = 10 A			0.64	-	
	I _F = 20 A			0.75	0.82	
Reverse current per diode	V _R = 100 V	T _A = 25 °C	I _R ⁽²⁾	2	-	μA
		T _A = 125 °C		2.5	-	mA
	V _R = 150 V	T _A = 25 °C		-	250	μA
		T _A = 125 °C		5	25	mA

Notes(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: Pulse width $\leq 40\text{ ms}$ **THERMAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	V40150C	VB40150C	VI40150C	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	1.8			$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	V40150C-M3/4W	1.89	4W	50/tube	Tube
TO-262AA	VI40150C-M3/4W	1.46	4W	50/tube	Tube
TO-263AB	VB40150C-M3/I	1.39	I	800/reel	Tape and reel



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

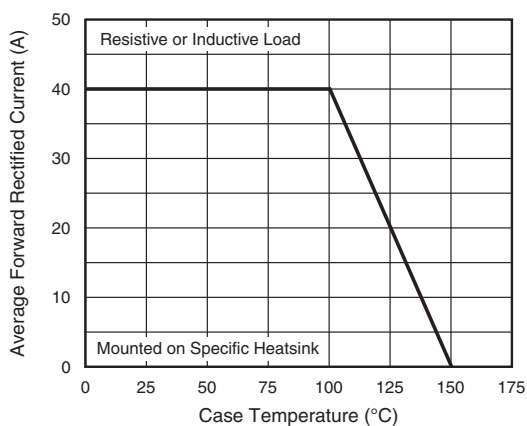


Fig. 1 - Maximum Forward Current Derating Curve

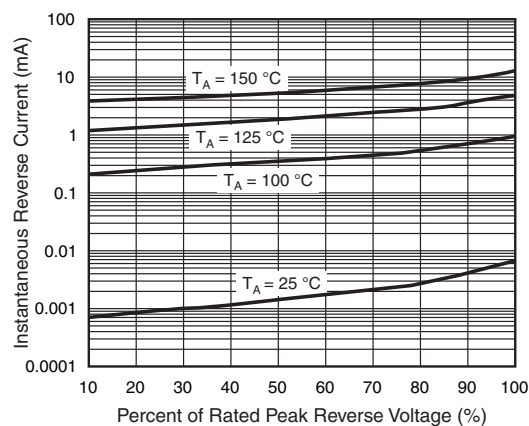


Fig. 4 - Typical Reverse Characteristics

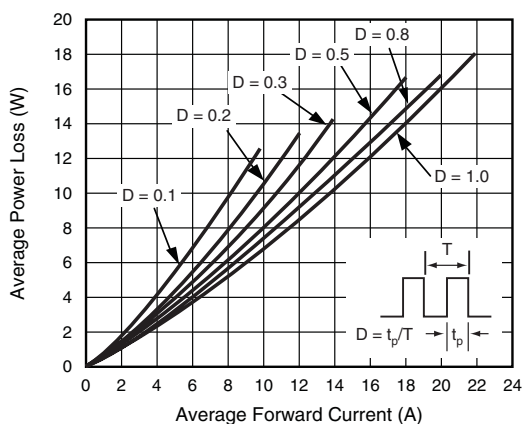


Fig. 2 - Forward Power Dissipation Characteristics

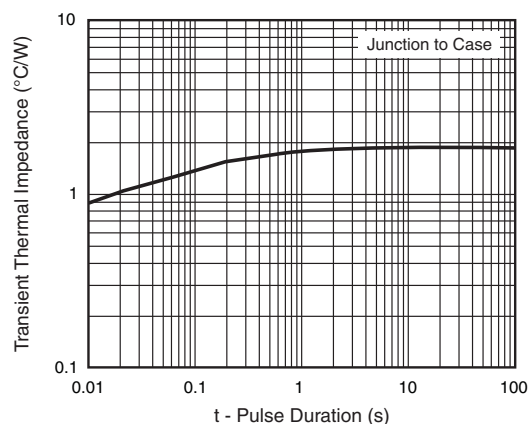


Fig. 5 - Typical Transient Thermal Impedance

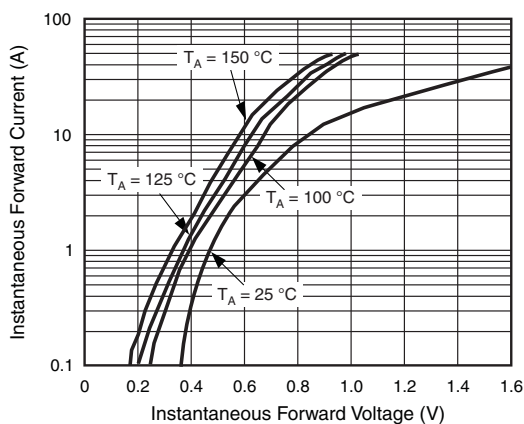


Fig. 3 - Typical Instantaneous Forward Characteristics

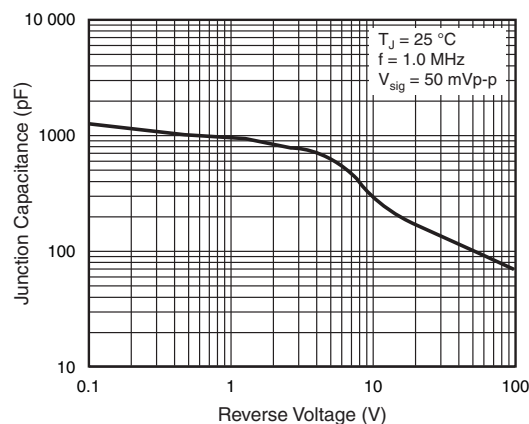
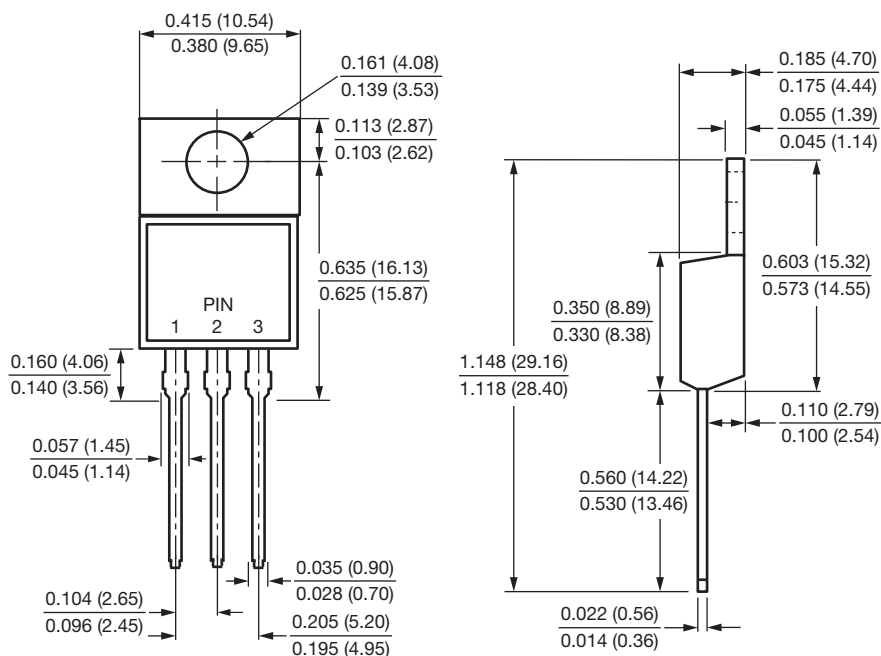


Fig. 6 - Typical Junction Capacitance

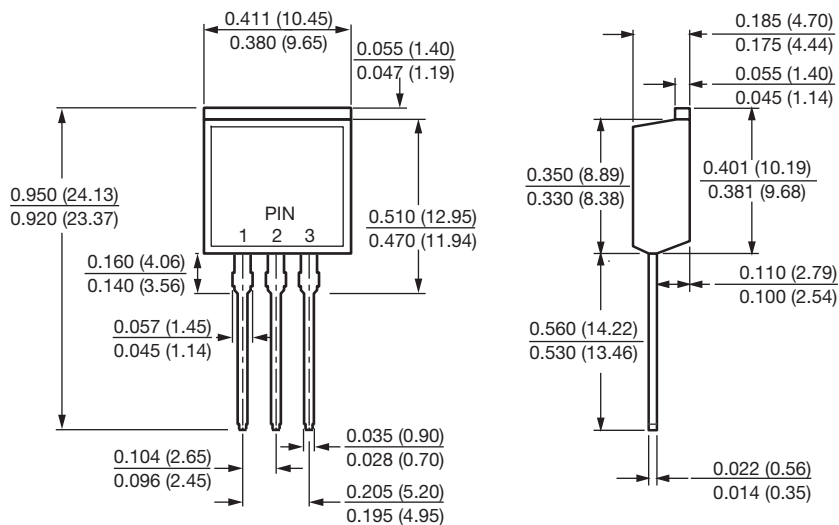


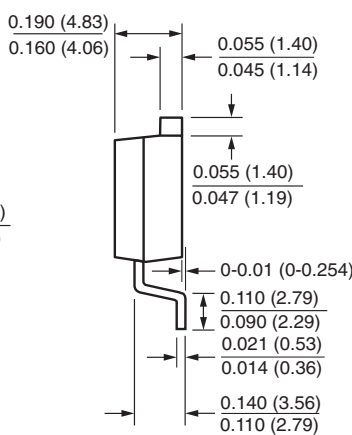
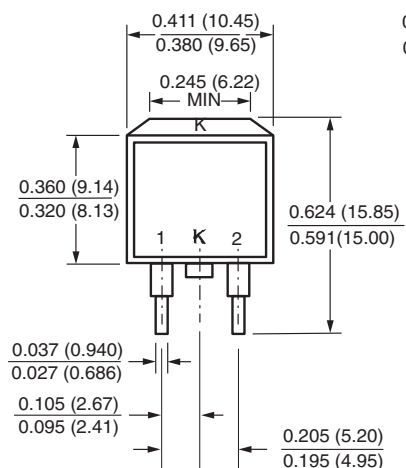
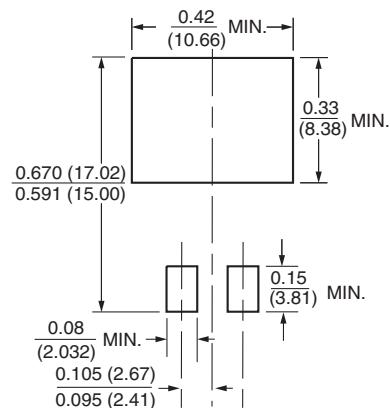
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



TO-262AA



D²PAK (TO-263AB)

Mounting Pad Layout




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