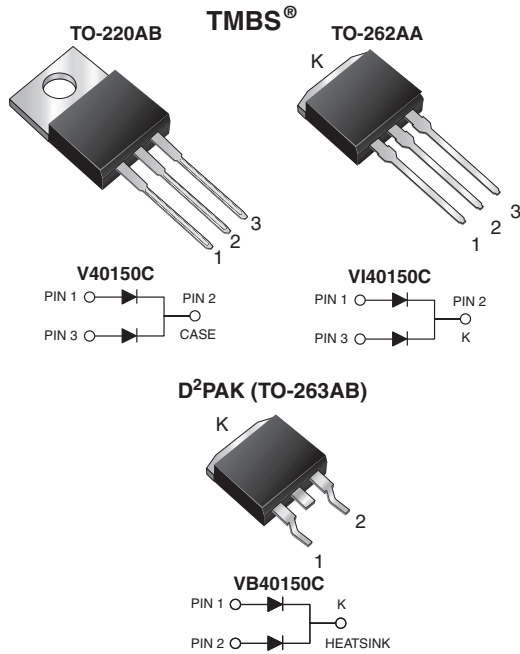


Dual High-Voltage Trench MOS Barrier Schottky Rectifier

 Ultra Low $V_F = 0.55 \text{ V}$ 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
- 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

DESIGN SUPPORT TOOLS

[click logo to get started](#)


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)	per device $I_{F(AV)}$	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/ μ s
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	$I_F = 5\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	$V_F^{(1)}$	0.69	-	V
	$I_F = 10\text{ A}$			0.84	-	
	$I_F = 20\text{ A}$			1.15	1.43	
	$I_F = 5\text{ A}$	$T_A = 125\text{ }^\circ\text{C}$		0.55	-	
	$I_F = 10\text{ A}$			0.64	-	
	$I_F = 20\text{ A}$			0.75	0.82	
Reverse current per diode	$V_R = 100\text{ V}$	$T_A = 25\text{ }^\circ\text{C}$	$I_R^{(2)}$	2	-	μA
		$T_A = 125\text{ }^\circ\text{C}$		2.5	-	mA
	$V_R = 150\text{ V}$	$T_A = 25\text{ }^\circ\text{C}$		-	250	μA
		$T_A = 125\text{ }^\circ\text{C}$		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 °C unless otherwise noted)

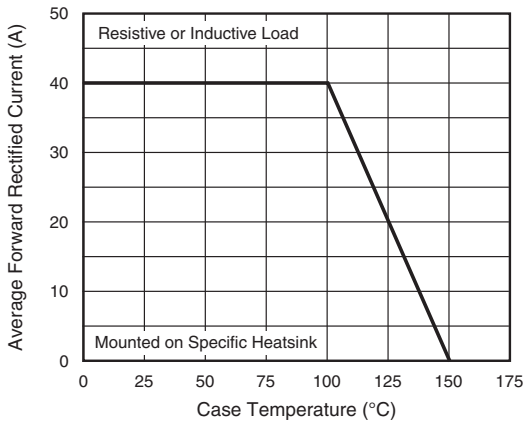


Fig. 1 - Maximum Forward Current Derating Curve

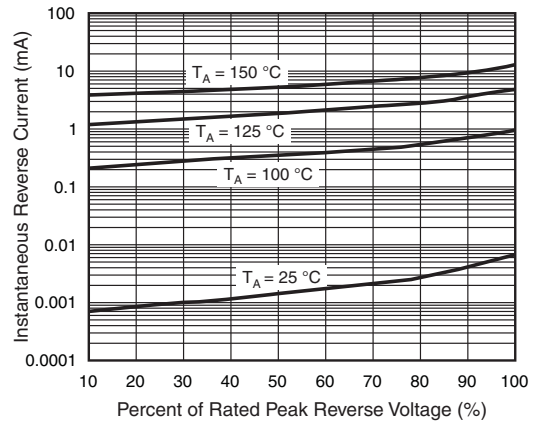


Fig. 4 - Typical Reverse Characteristics

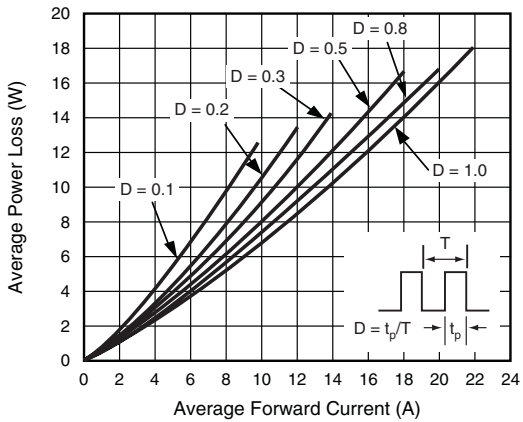


Fig. 2 - Forward Power Dissipation Characteristics

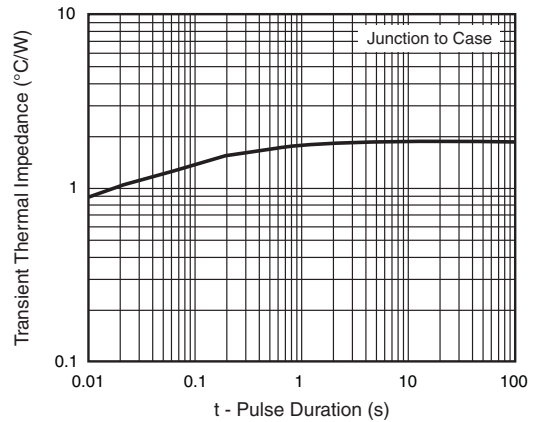


Fig. 5 - Typical Transient Thermal Impedance

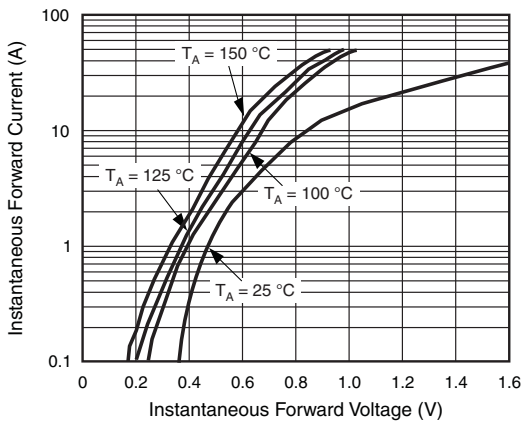


Fig. 3 - Typical Instantaneous Forward Characteristics

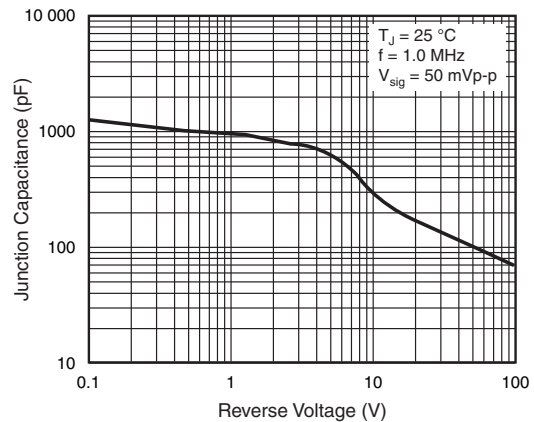
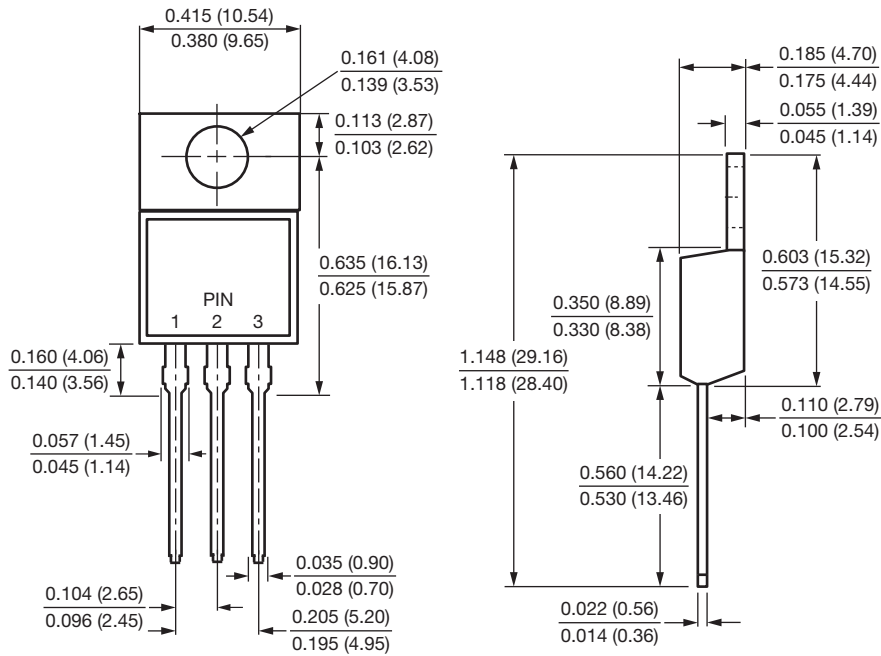


Fig. 6 - Typical Junction Capacitance

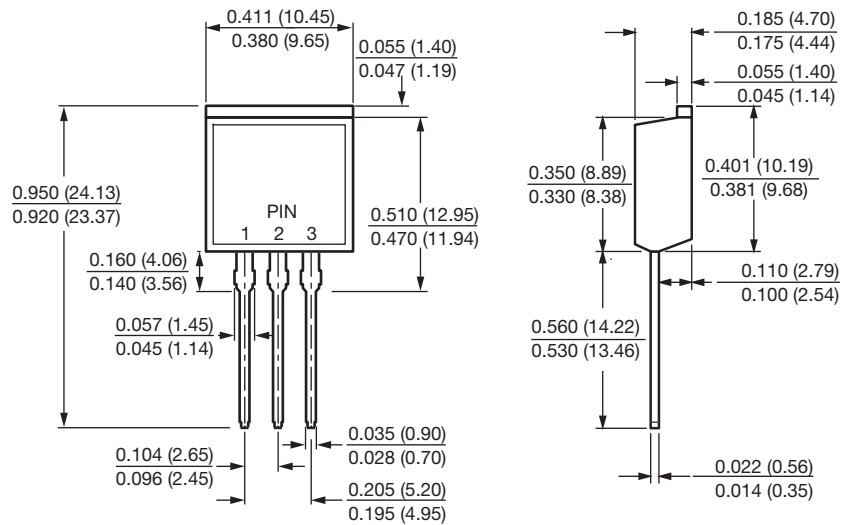


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB

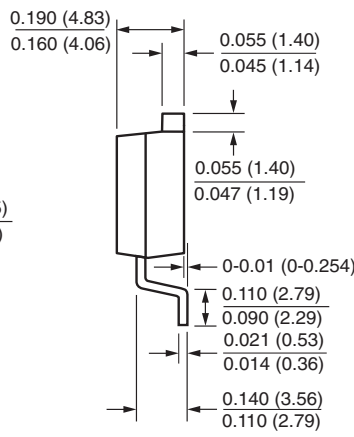
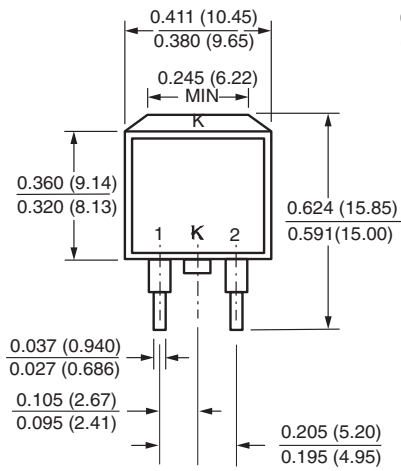


TO-262AA

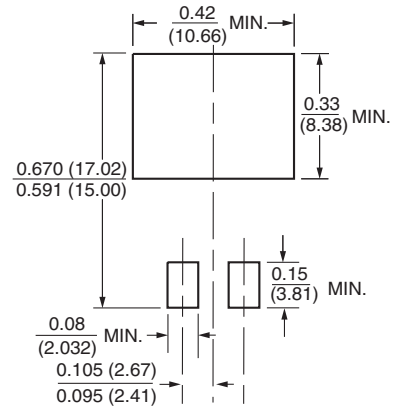




D²PAK (TO-263AB)



Mounting Pad Layout





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