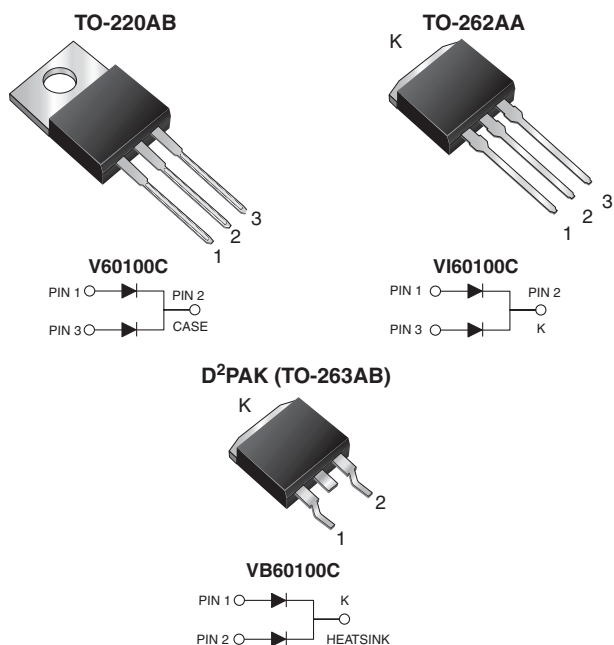


**Dual High Voltage TMBS® (Trench MOS Barrier Schottky) Rectifier**Ultra Low $V_F = 0.36\text{ V}$ at $I_F = 5\text{ A}$ **FEATURES**

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Low thermal resistance
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB and TO-262AA package)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

**RoHS**
COMPLIANT**TYPICAL APPLICATIONS**

For use in high frequency converters, switching power supplies, freewheeling diodes, OR-ing diode, DC/DC converters, and reverse battery protection.

MECHANICAL DATA**Case:** TO-220AB, D²PAK (TO-263AB), and TO-262AA

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

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

E3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

ADDITIONAL RESOURCES

3D Models

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 30 A
V_{RRM}	100 V
I_{FSM}	320 A
V_F at $I_F = 30\text{ A}$	0.66 V
T_J max.	150 °C
Package	TO-220AB, TO-262AA, D²PAK (TO-263AB)
Circuit configuration	Common cathode

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

PARAMETER	SYMBOL	V60100C	VI60100C	VB60100C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	100			V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	60			A
		30			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	320			A
Non-repetitive avalanche energy at $T_J = 25\text{ }^{\circ}\text{C}$, $L = 140\text{ mH}$ per diode	E_{AS}	450			mJ
Peak repetitive reverse current at $t_p = 2\text{ }\mu\text{s}$, 1 kHz, $T_J = 38\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ per diode	I_{RRM}	1.0			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			$^{\circ}\text{C}$

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

PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Breakdown voltage	I _R = 1.0 mA	T _A = 25 °C	V _{BR}	100 (minimum)	-	V
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 25 °C	V _F ⁽¹⁾	0.45	-	V
	I _F = 10 A			0.52	-	
	I _F = 15 A			0.58	0.63	
	I _F = 20 A			0.63	-	
	I _F = 30 A			0.73	0.79	
	I _F = 5 A	T _A = 125 °C		0.36	-	
	I _F = 10 A			0.45	-	
	I _F = 15 A			0.53	0.58	
	I _F = 20 A			0.58	-	
	I _F = 30 A			0.66	0.70	
Reverse current at rated V _R per diode	V _R = 80 V	T _A = 25 °C	I _R ⁽²⁾	24	500	μA
		T _A = 125 °C		13	20	mA
	V _R = 100 V	T _A = 25 °C		65	1000	μA
		T _A = 125 °C		30	-	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	V60100C	VI60100C	VB60100C	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	2.5	2.5	2.5	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	V60100C-E3/4W	1.89	4W	50/tube	Tube
TO-263AB	VB60100C-E3/4W	1.39	4W	50/tube	Tube
TO-263AB	VB60100C-E3/8W	1.39	8W	800/tube	Tape and reel
TO-262AA	VI60100C-E3/P	1.46	P	50/tube	Tube



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

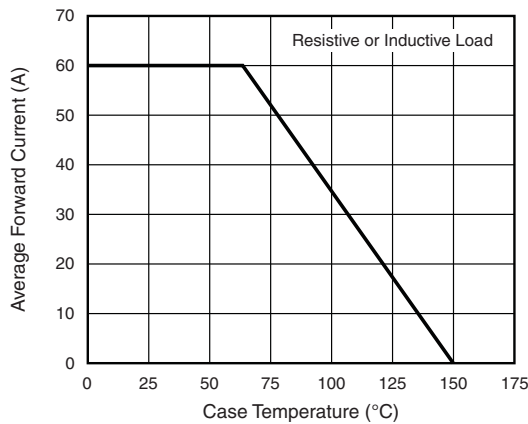


Fig. 1 - Forward Current Derating Curve

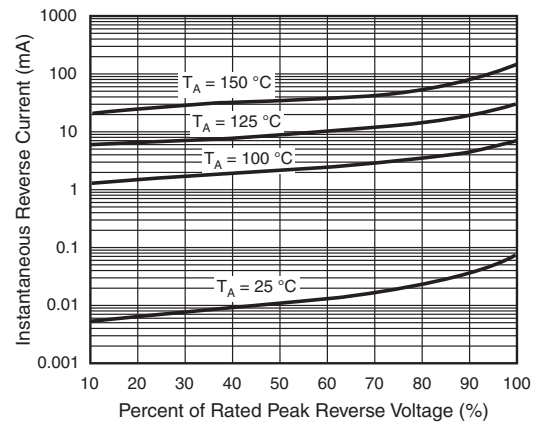


Fig. 4 - Typical Reverse Characteristics Per Diode

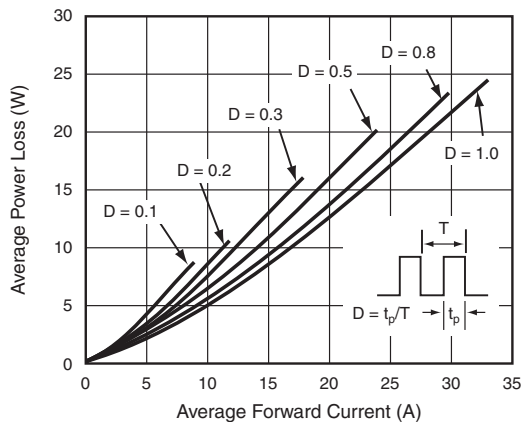


Fig. 2 - Forward Power Loss Characteristics Per Diode

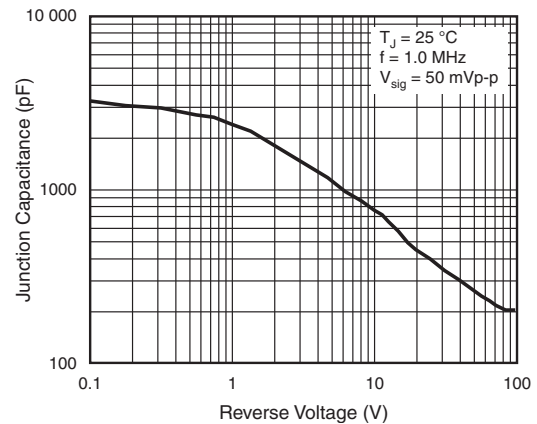


Fig. 5 - Typical Junction Capacitance Per Diode

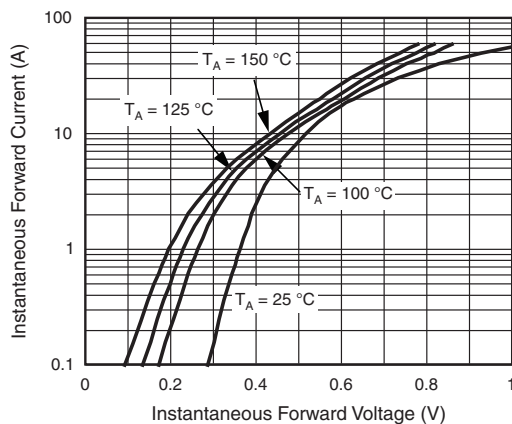


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

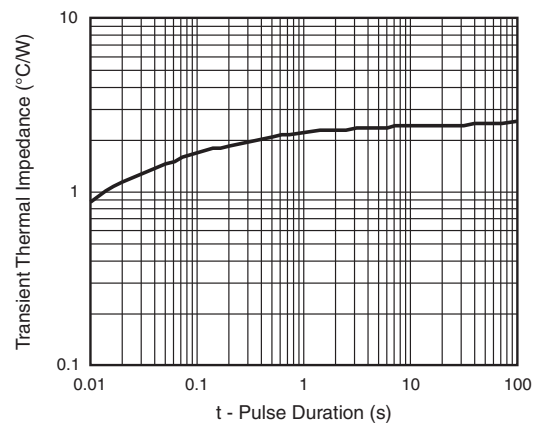
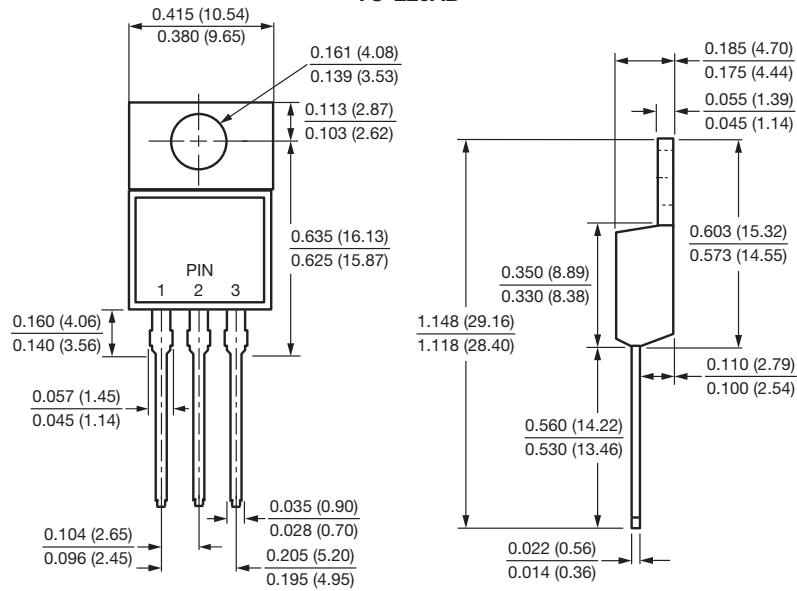


Fig. 6 - Typical Transient Thermal Impedance Per Diode

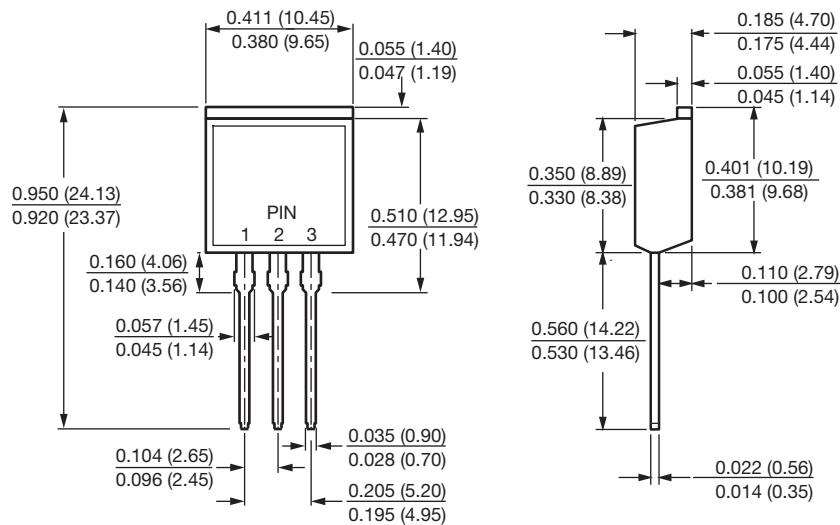


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB

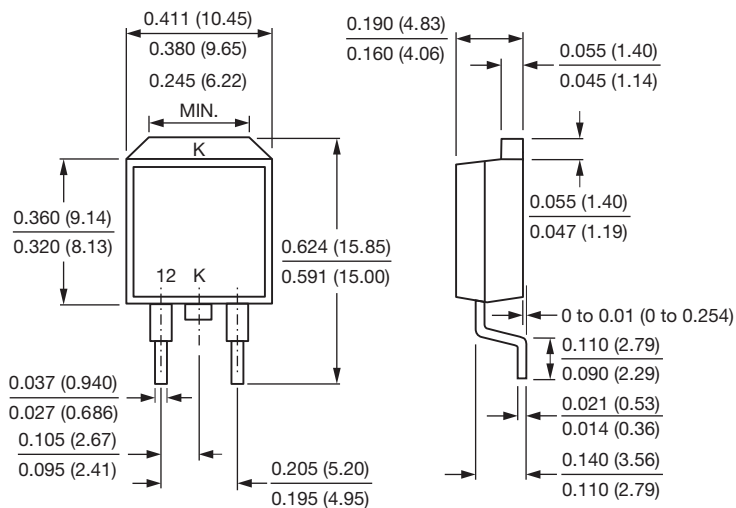


TO-262AA

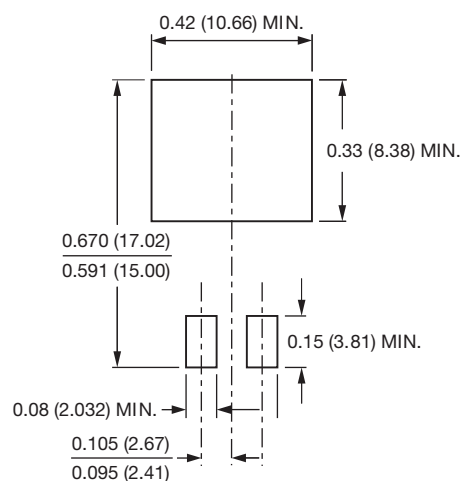




D²PAK (TO-263AB)



Mounting Pad Layout





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