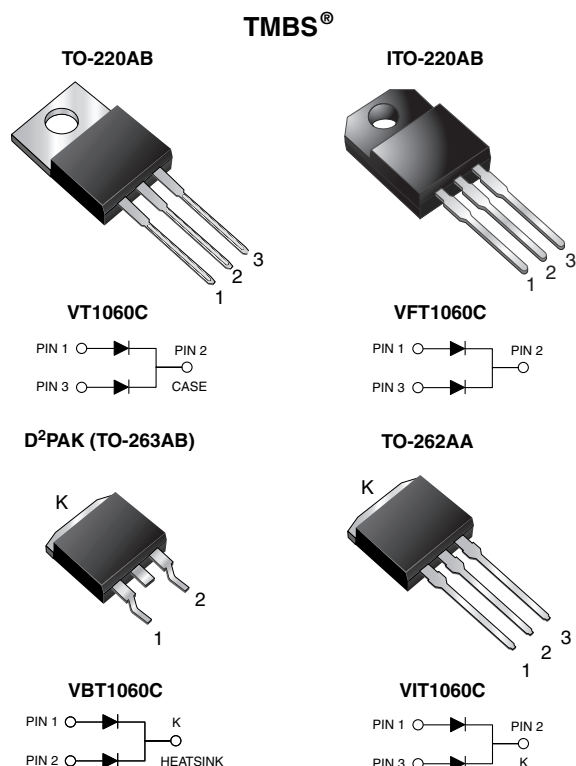




Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.39\text{ V}$ at $I_F = 2.5\text{ A}$



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 D²PAK (TO-263AB) package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB, ITO-220AB, and TO-262AA package)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?999912



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, ITO-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

LINKS TO ADDITIONAL RESOURCES



3D Models

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 5 A
V_{RRM}	60 V
I_{FSM}	100 A
V_F at $I_F = 5.0\text{ A}$	0.50 V
T_J max.	150 °C
Package	TO-220AB, ITO-220AB, D ² PAK (TO-263AB), TO-262AA
Circuit configuration	Common cathode



MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	VT1060C	VFT1060C	VBT1060C	VIT1060C	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	60				V
Maximum average forward rectified current (fig. 1) <div>per device</div> <div>per diode</div>	I _{F(AV)}	10				A
		5				
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I _{FSM}	100				
Non-repetitive avalanche energy at T _J = 25 °C, L = 60 mH	E _{AS}	65				mJ
Peak repetitive reverse current at t _p = 2 μs, 1 kHz, T _J = 38 °C ± 2 °C	I _{RRM}	1.0				A
Isolation voltage (ITO-220AB only) from terminal to heatsink t = 1 min	V _{AC}	1500				V
Operating junction and storage temperature range	T _{JL} , T _{STG}	-55 to +150				°C

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode ⁽¹⁾	I _F = 2.5 A	T _A = 25 °C	V _F	0.49	-	V
	I _F = 5.0 A			0.58	0.70	
	I _F = 2.5 A	T _A = 125 °C		0.39	-	
	I _F = 5.0 A			0.50	0.60	
Reverse current per diode ⁽²⁾	V _R = 60 V	T _A = 25 °C	I _R	-	700	μA
		T _A = 125 °C		6.9	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	VT1060C	VFT1060C	VBT1060C	VIT1060C	UNIT
Typical thermal resistance	$R_{\theta JC}$	3.5	6.5	3.5	3.5	$^{\circ}\text{C/W}$
		2.5	5.0	2.5	2.5	

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	VT1060C-E3/4W	1.87	4W	50/tube	Tube
ITO-220AB	VFT1060C-E3/4W	1.75	4W	50/tube	Tube
D ² PAK (TO-263AB)	VBT1060C-E3/4W	1.39	4W	50/tube	Tube
D ² PAK (TO-263AB)	VBT1060CE3/8W	1.39	8W	800/reel	Tape and reel
TO-262AA	VIT1060C-E3/4W	1.45	4W	50/tube	Tube



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

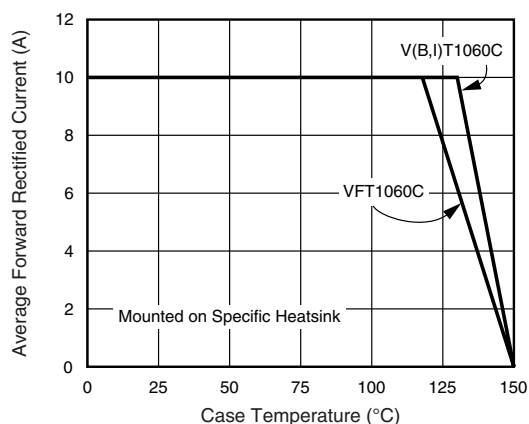


Fig. 1 - Maximum Forward Current Derating Curve

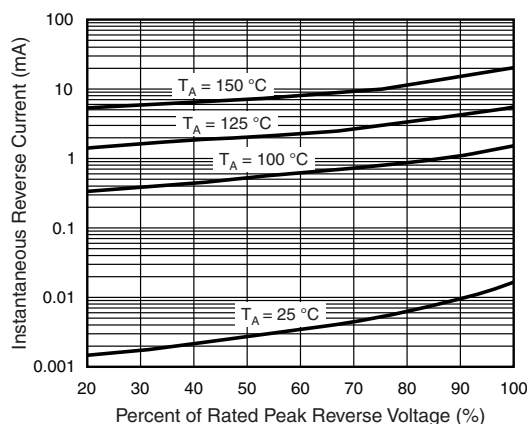


Fig. 4 - Typical Reverse Characteristics Per Diode

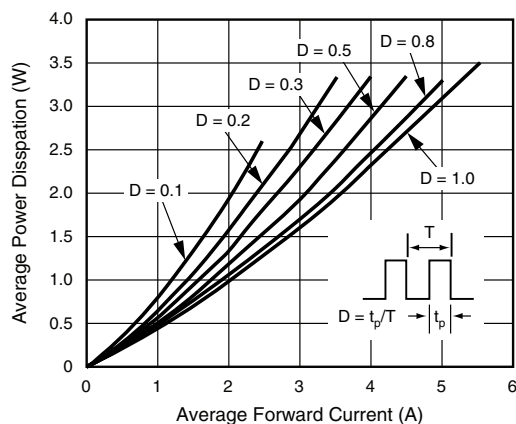


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

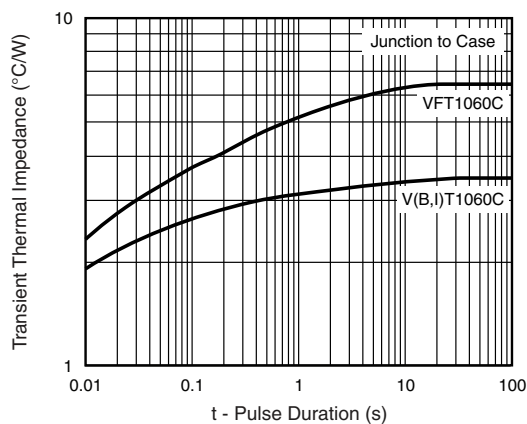


Fig. 5 - Typical Transient Thermal Impedance Per Diode

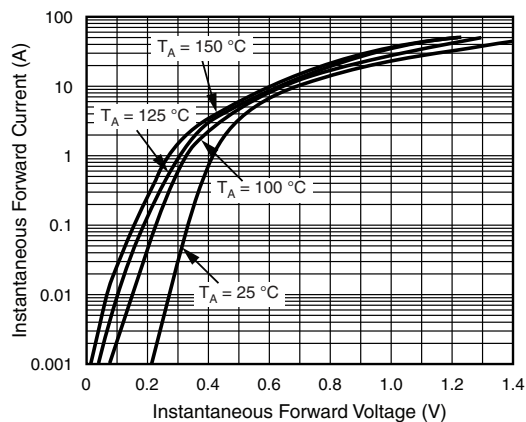


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

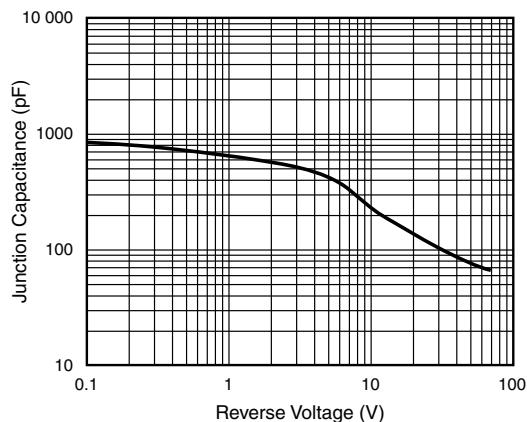
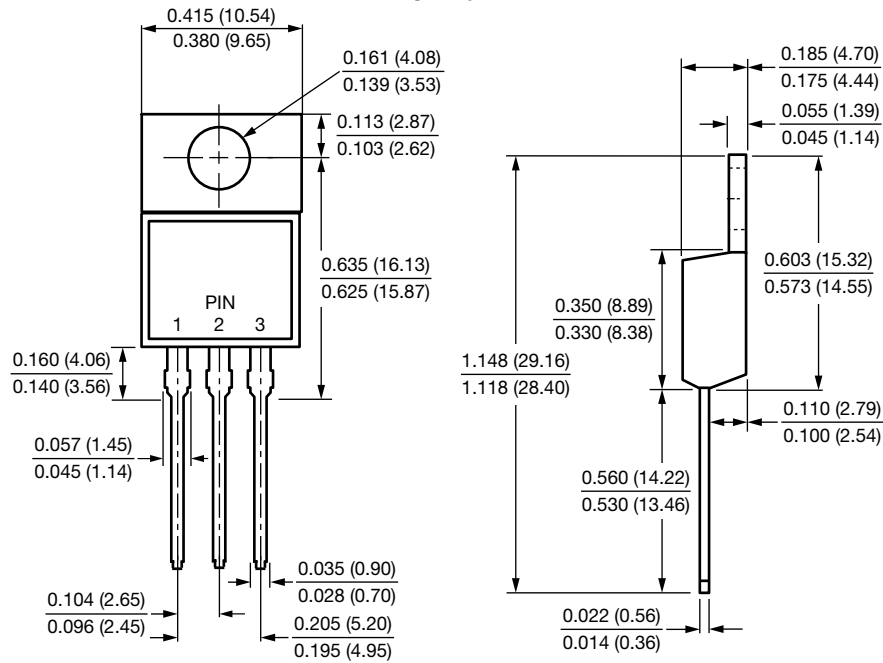


Fig. 6 - Typical Junction Capacitance Per Diode

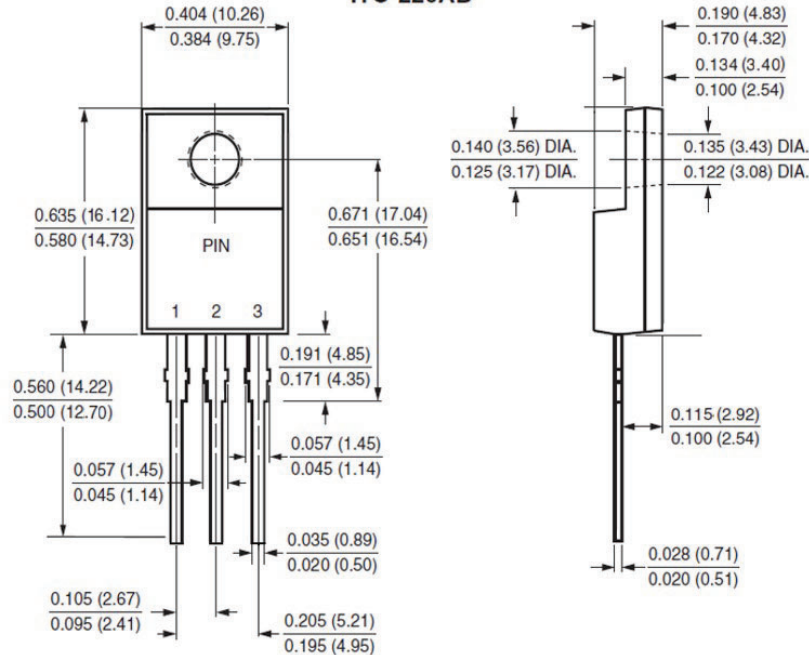


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB

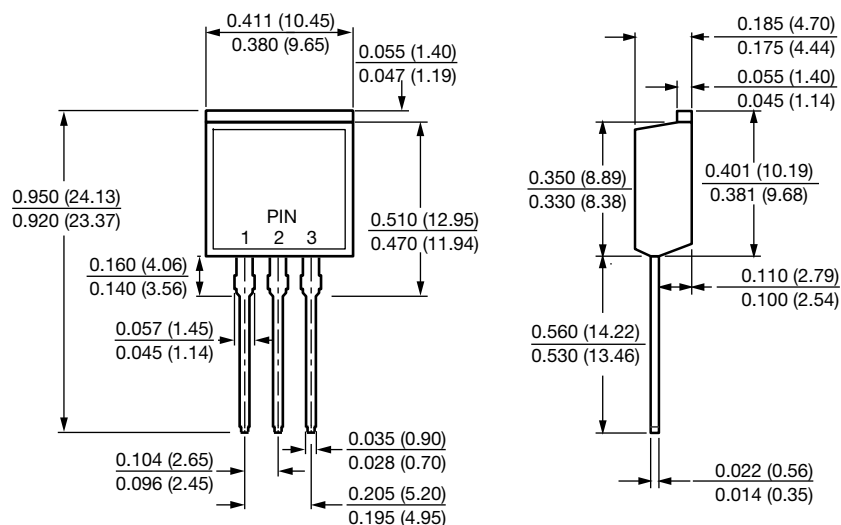


ITO-220AB

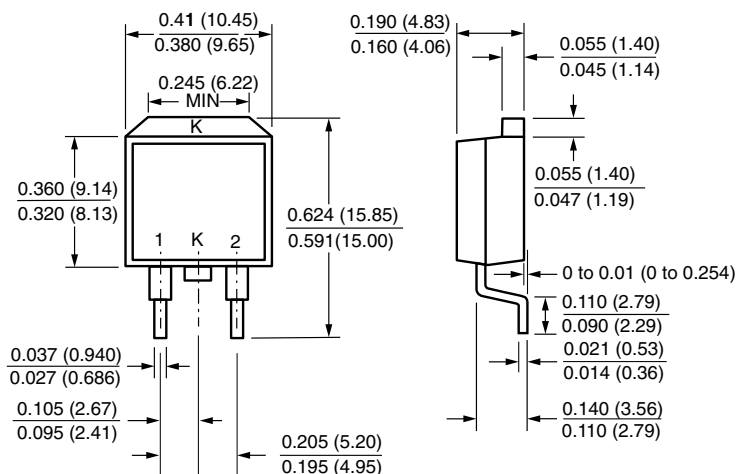




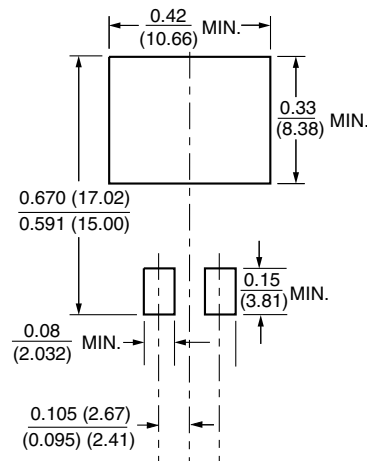
TO-262AA



D²PAK (TO-263AB)



Mounting Pad Layout





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