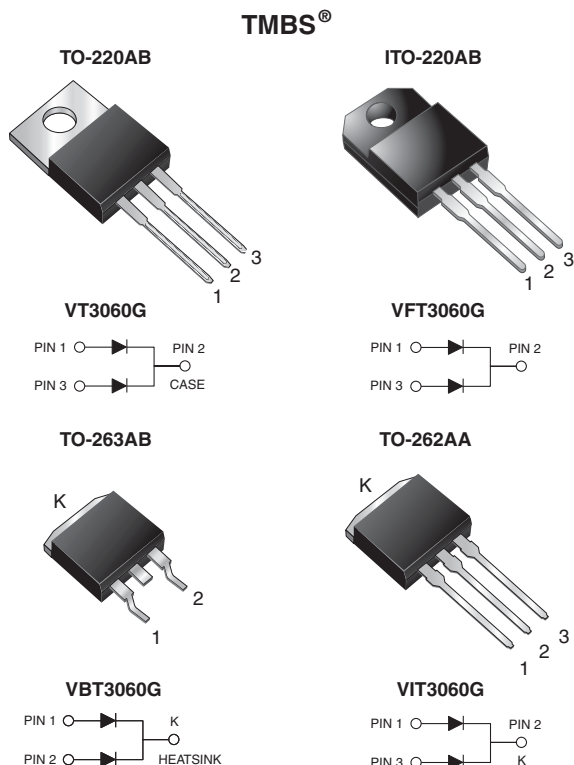


# Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low  $V_F = 0.40\text{ V}$  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)
- Not recommended for PCB bottom side wave mounting
- 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?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

## TYPICAL APPLICATIONS

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

## MECHANICAL DATA

**Case:** TO-220AB, ITO-220AB, TO-263AB and TO-262AA

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS compliant and 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 max.

## PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 15 A
$V_{RRM}$	60 V
$I_{FSM}$	150 A
$V_F$ at $I_F = 15\text{ A}$	0.61 V
$T_J$ max.	150 °C
Package	TO-220AB, ITO-220AB, TO-263AB, TO-262AA
Diode variations	Common cathode

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

PARAMETER	SYMBOL	VT3060G	VFT3060G	VBT3060G	VIT3060G	UNIT
Max. repetitive peak reverse voltage	V <sub>RRM</sub>	60				V
Max. average forward rectified current (fig. 1)	I <sub>F(AV)</sub>	30				A
		15				
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	150				A
Non-repetitive avalanche energy at T <sub>J</sub> = 25 °C, L = 60 mH per diode	E <sub>AS</sub>	120				mJ
Peak repetitive reverse current at t <sub>p</sub> = 2 μs, 1 kHz, T <sub>J</sub> = 38 °C ± 2 °C per diode	I <sub>R</sub> RM	1.0				A
Isolation voltage (ITO-220AB only) from terminal to heatsink t = 1 min	V <sub>AC</sub>	1500				V
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150				°C

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

PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Breakdown voltage	I <sub>R</sub> = 1.0 mA	T <sub>A</sub> = 25 °C	V <sub>BR</sub>	60 (min.)	-	V
Instantaneous forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 5 A	T <sub>A</sub> = 25 °C	V <sub>F</sub>	0.49	-	V
	I <sub>F</sub> = 7.5 A			0.53	-	
	I <sub>F</sub> = 15 A			0.65	0.73	
	I <sub>F</sub> = 5 A	T <sub>A</sub> = 125 °C		0.40	-	
	I <sub>F</sub> = 7.5 A			0.46	-	
	I <sub>F</sub> = 15 A			0.61	0.69	
Reverse current per diode <sup>(2)</sup>	V <sub>R</sub> = 60 V	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub>	- 14	850 40	μA mA

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

PARAMETER		SYMBOL	VT3060G	VFT3060G	VBT3060G	VIT3060G	UNIT
Typical thermal resistance	per diode	$R_{\theta JC}$	3.2	6.2	3.2	3.2	$^{\circ}\text{C/W}$
	per device		1.9	5.0	1.9	1.9	

**ORDERING INFORMATION (EXAMPLE)**

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	VT3060G-E3/4W	1.88	4W	50/tube	Tube
ITO-220AB	VFT3060G-E3/4W	1.76	4W	50/tube	Tube
TO-263AB	VBT3060G-E3/4W	1.39	4W	50/tube	Tube
TO-263AB	VBT3060G-E3/8W	1.39	8W	800/reel	Tape and reel
TO-262AA	VIT3060G-E3/4W	1.45	4W	50/tube	Tube

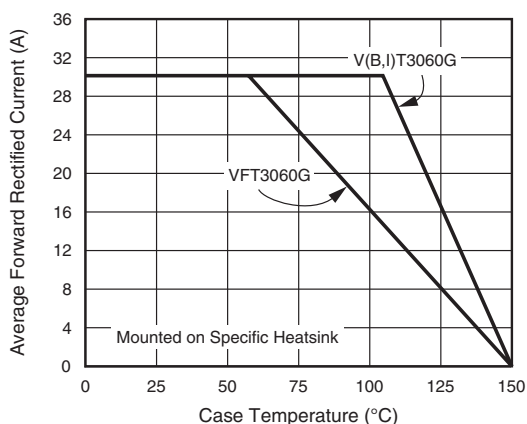
**RATINGS AND CHARACTERISTICS CURVES**( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

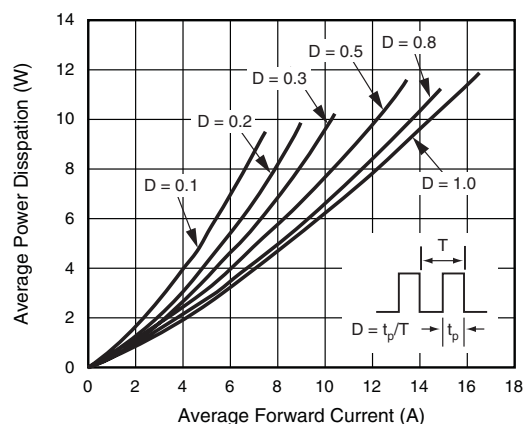


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

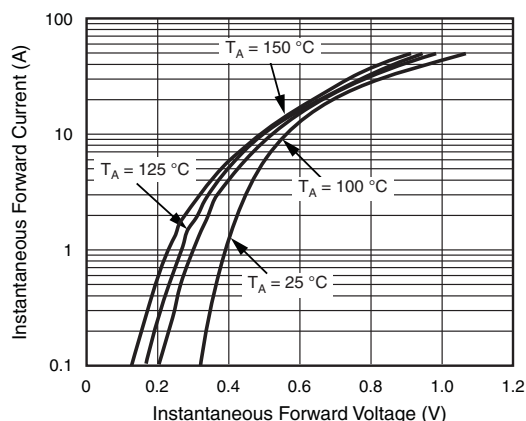


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

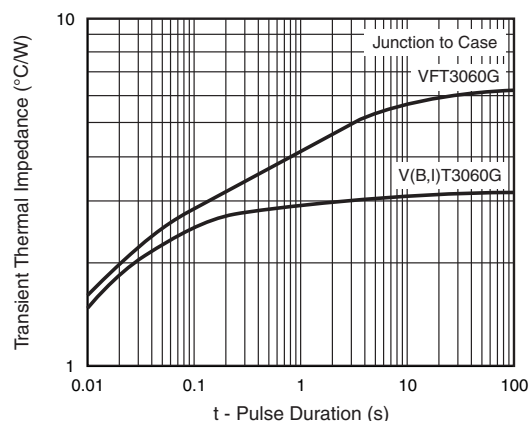


Fig. 5 - Typical Transient Thermal Impedance Per Diode

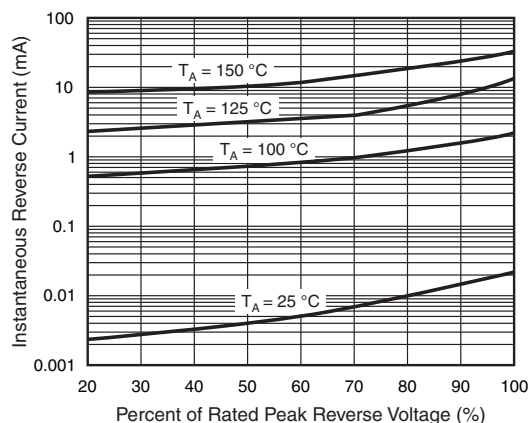


Fig. 4 - Typical Reverse Characteristics Per Diode

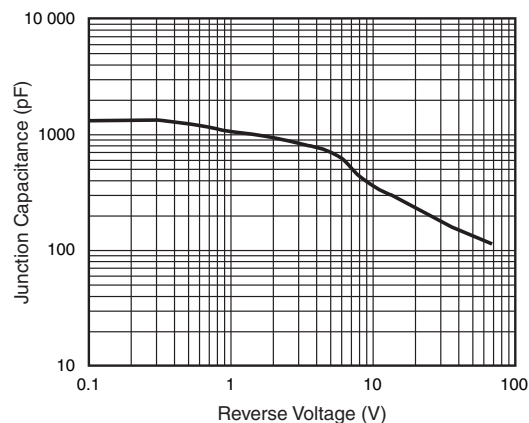
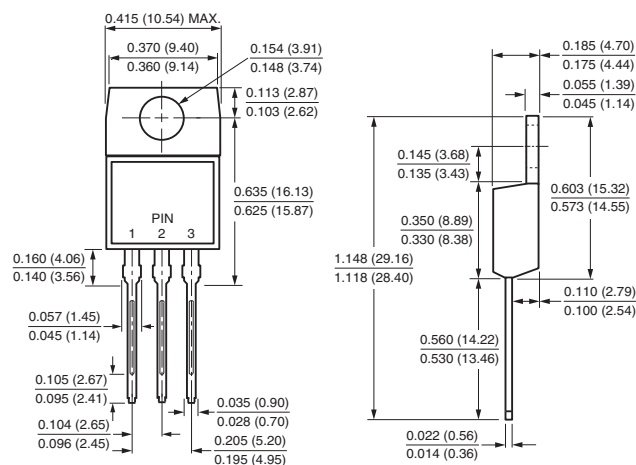
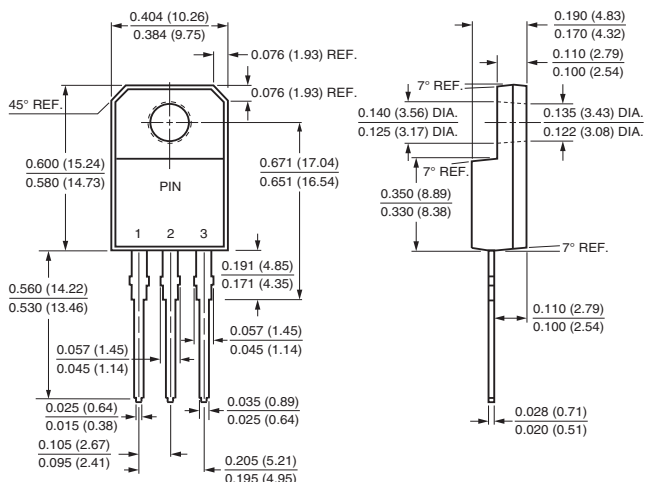
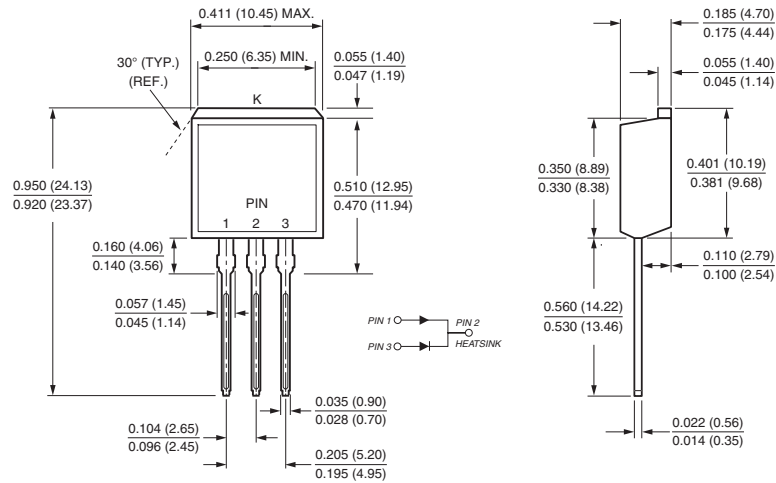


Fig. 6 - Typical Junction Capacitance Per Diode

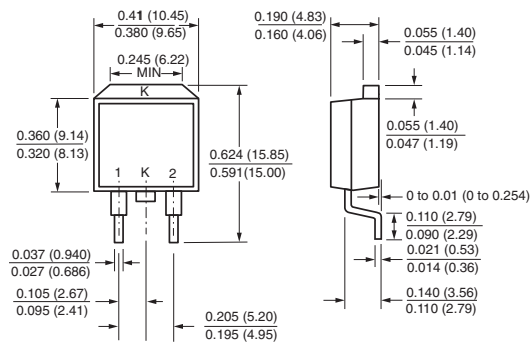
**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**TO-220AB**

**ITO-220AB**


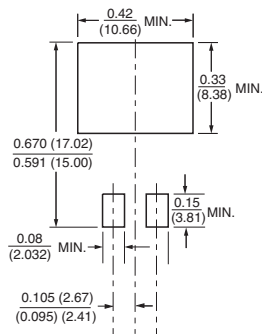
## TO-262AA



**TO-263AB**



### Mounting Pad Layout





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