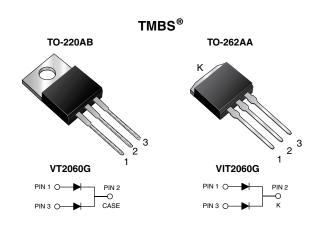




Vishay General Semiconductor

# **Dual High-Voltage Trench MOS Barrier Schottky Rectifier**

Ultra Low  $V_F = 0.50 \text{ V}$  at  $I_F = 5 \text{ A}$ 



PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	2 x 10 A				
V <sub>RRM</sub>	60 V				
I <sub>FSM</sub>	100 A				
V <sub>F</sub> at I <sub>F</sub> = 10 A	0.63 V				
T <sub>J</sub> max.	150 °C				

### **FEATURES**

- Trench MOS Schottky technology
- · Low forward voltage drop, low power losses

• High efficiency operation HALOGEN

• Solder bath temperature 275 °C max. 10 s, per JESD 22-B106

- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition

### **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 and TO-262AA

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS compliant, and commercial grade

Base P/NHM3 - halogen-free, RoHS compliant, and AEC-Q101 qualified

**Terminals:** Matte tin plated leads, solderable J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix

meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	VT2060G	VIT2060G	UNIT	
Maximum repetitive peak reverse voltage		$V_{RRM}$	60		V	
Maximum average forward rectified current (fig. 1)	per device		20		А	
	per diode	I <sub>F(AV)</sub>	10			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I <sub>FSM</sub>	100		А	
Voltage rate of change (rated V <sub>R</sub> )		dV/dt	10 000		V/µs	
Operating junction and storage temperature range		T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150		°C	

# VT2060G, VIT2060G

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	I <sub>F</sub> = 5 A	- T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.58	-	- V	
	I <sub>F</sub> = 10 A			0.69	0.90		
	I <sub>F</sub> = 5 A	T <sub>A</sub> = 125 °C		0.50	-		
	I <sub>F</sub> = 10 A			0.63	0.84		
Reverse current per diode	$V_R = 60 \text{ V}$ $T_A = 25 \text{ °C}$ $T_A = 125 \text{ °C}$	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	-	700	μΑ	
		T <sub>A</sub> = 125 °C		8.0	25	mA	

### **Notes**

 $^{(1)}$  Pulse test: 300  $\mu s$  pulse width, 1 % duty cycle

<sup>(2)</sup> Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	VT2060G	VIT2060G	UNIT
Typical thermal resistance	per diode	В	3.6		°C/W
	per device	- R <sub>θJC</sub>	2.6		

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
TO-220AB	VT2060G-M3/4W	1.87	4W	50/tube	Tube	
TO-262AA	VIT2060G-M3/4W	1.45	4W	50/tube	Tube	
TO-220AB	VT2060GHM3/4W <sup>(1)</sup>	1.87	4W	50/tube	Tube	
TO-262AA	VIT2060GHM3/4W (1)	1.45	4W	50/tube	Tube	

### Note

## **RATINGS AND CHARACTERISTICS CURVES**

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

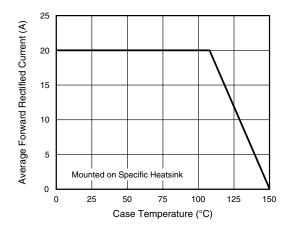


Fig. 1 - Maximum Forward Current Derating Curve

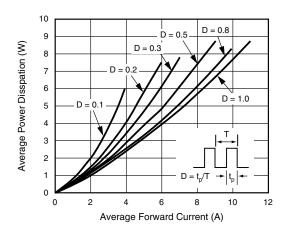


Fig. 2 - Forward Power Dissipation Characteristics

<sup>(1)</sup> AEC-Q101 qualified



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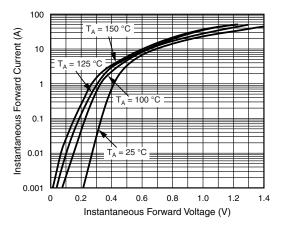


Fig. 3 - Typical Instantaneous Forward Characteristics

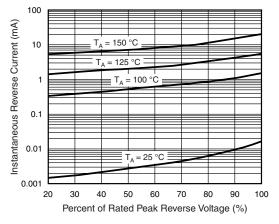


Fig. 4 - Typical Reverse Characteristics

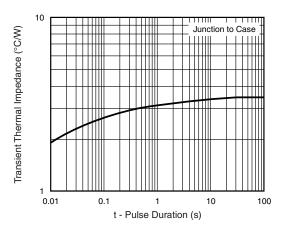


Fig. 5 - Typical Transient Thermal Impedance

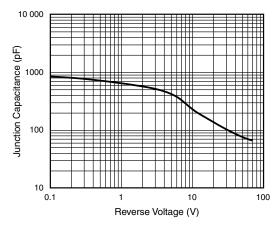


Fig. 6 - Typical Junction Capacitance

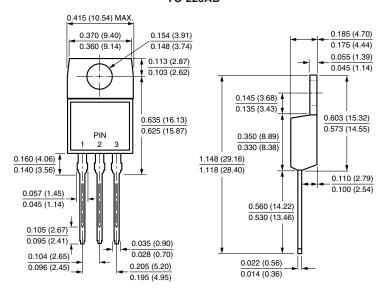
# VT2060G, VIT2060G

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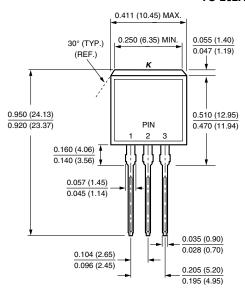


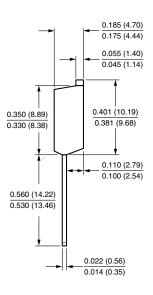
## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

### TO-220AB



### TO-262AA









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