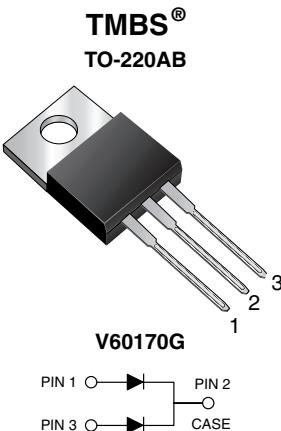


## Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low  $V_F$  = 0.50 V at  $I_F$  = 5 A



### FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### 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

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

**Mounting Torque:** 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_F(AV)$	2 x 30 A
$V_{RRM}$	170 V
$I_{FSM}$	210 A
$V_F$ at $I_F$ = 30 A	0.72 V
$T_J$ max.	175 °C
Package	TO-220AB
Diode variation	Dual common cathode

MAXIMUM RATINGS ( $T_A$ = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	V60170G	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	170	V
Maximum average forward rectified current (fig. 1)	$I_F(AV)$	60	A
per device		30	
per diode			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	210	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 +175	°C

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	$I_F = 5 \text{ A}$	$T_A = 25^\circ\text{C}$	$V_F^{(1)}$	0.65	-	V	
	$I_F = 15 \text{ A}$			0.78	-		
	$I_F = 30 \text{ A}$			0.87	1.02		
	$I_F = 5 \text{ A}$	$T_A = 125^\circ\text{C}$		0.50	-		
	$I_F = 15 \text{ A}$			0.62	-		
	$I_F = 30 \text{ A}$			0.72	0.80		
Reverse current per diode	$V_R = 136 \text{ V}$	$T_A = 25^\circ\text{C}$	$I_R^{(2)}$	1.5	-	$\mu\text{A}$	
		$T_A = 125^\circ\text{C}$		2.5	-	$\text{mA}$	
	$V_R = 170 \text{ V}$	$T_A = 25^\circ\text{C}$		-	450	$\mu\text{A}$	
		$T_A = 125^\circ\text{C}$		5	50	$\text{mA}$	

**Notes**

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

(2) Pulse test: Pulse width  $\leq 20 \text{ ms}$

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	V60170G			UNIT
Typical thermal resistance	$R_{\theta\text{JC}}$	per diode	1.0		$^\circ\text{C/W}$
		per device	0.7		

<b>ORDERING INFORMATION</b> (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	V60170G-M3/4W	1.89	4W	50/tube	Tube

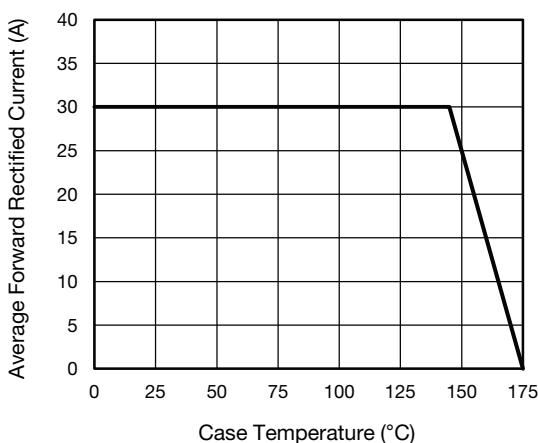
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

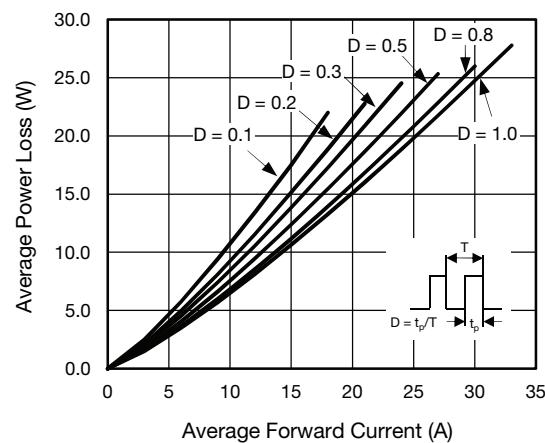


Fig. 2 - Forward Power Loss Characteristics Per Diode

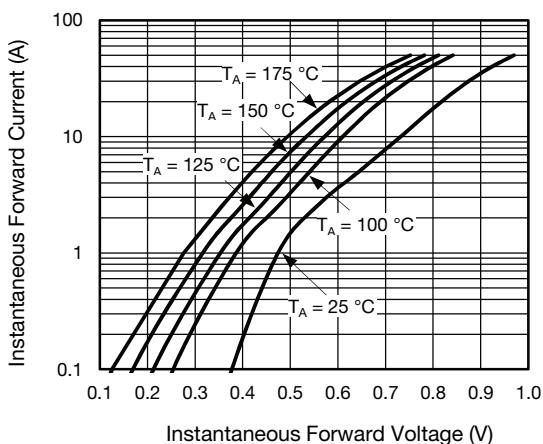


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

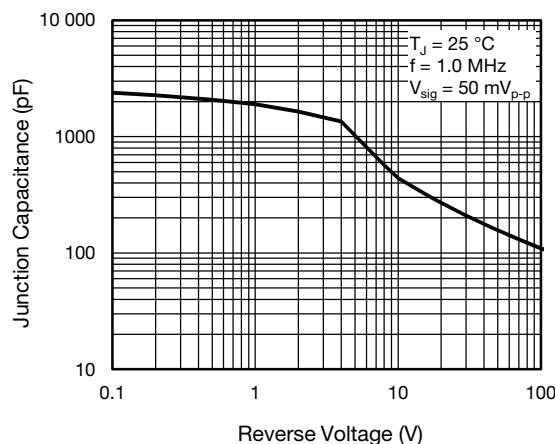


Fig. 5 - Typical Junction Capacitance Per Diode

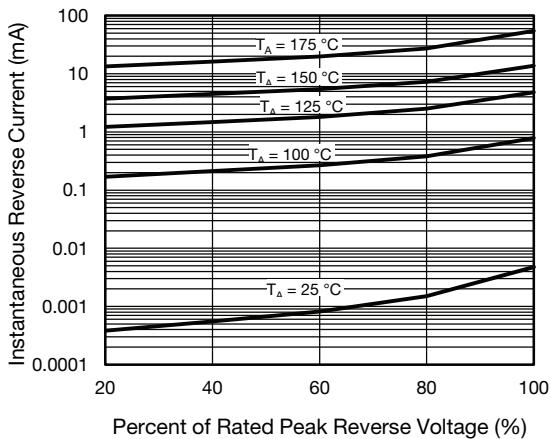


Fig. 4 - Typical Reverse Characteristics Per Diode

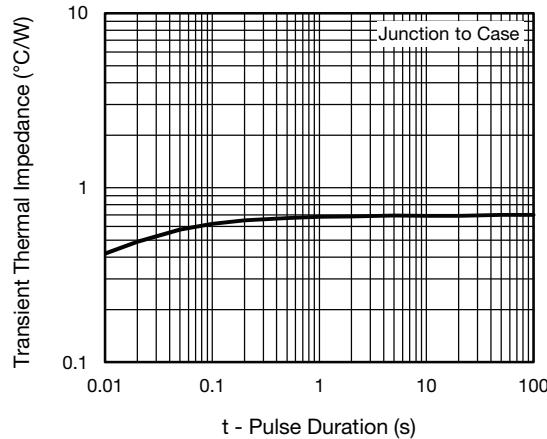
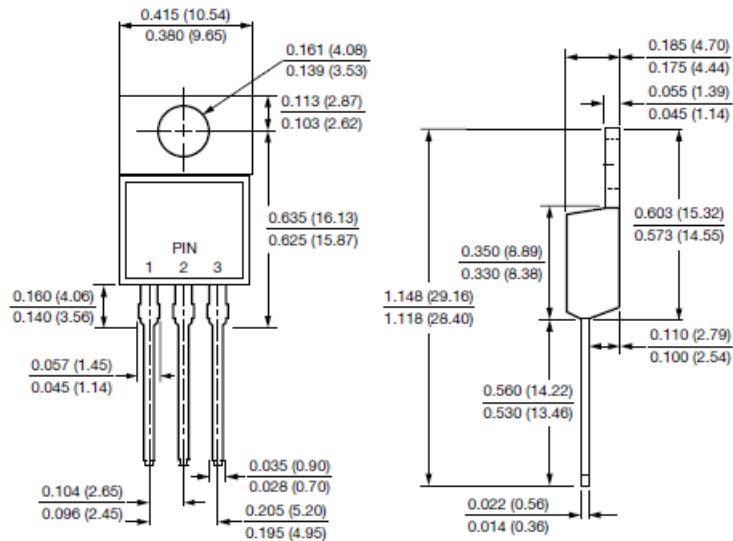


Fig. 6 - Typical Transient Thermal Impedance Per Device

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

TO-220AB



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