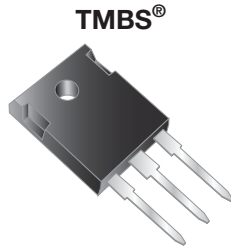
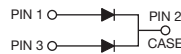


# Dual High-Voltage Trench MOS Barrier Schottky Rectifier

 Ultra Low  $V_F = 0.24\text{ V}$  at  $I_F = 5\text{ A}$ 

**TO-3PW**


PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 30 A
$V_{RRM}$	45 V
$I_{FSM}$	400 A
$V_F$ at $I_F = 30\text{ A}$ ( $T_A = 125\text{ °C}$ )	0.41 V
$T_J$ max.	150 °C
Package	TO-3PW
Diode variations	Dual common cathode

## 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)


**RoHS**  
 COMPLIANT  
 HALOGEN  
**FREE**

## 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-3PW

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

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VT60L45PW	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	45	V
Maximum average forward rectified current (fig. 1)		per device	60
		per diode	30
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	400	A
Operating junction and storage temperature range	$T_J, T_{STG}$	-40 to +150	°C

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	$I_F = 5\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	$V_F$ (1)	0.37	-	V
	$I_F = 15\text{ A}$			0.43	-	
	$I_F = 30\text{ A}$			0.49	0.57	
	$I_F = 5\text{ A}$	$T_A = 125\text{ }^\circ\text{C}$		0.24	-	
	$I_F = 15\text{ A}$	0.32		-		
	$I_F = 30\text{ A}$	0.41		0.50		
Reverse current per diode	$V_R = 45\text{ V}$	$T_A = 25\text{ }^\circ\text{C}$	$I_R$ (2)	-	7	mA
		$T_A = 125\text{ }^\circ\text{C}$		67	180	mA

**Notes**

- (1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle  
 (2) Pulse test: Pulse width  $\leq 5\text{ ms}$

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	VT60L45PW	UNIT	
Typical thermal resistance	per diode	$R_{\theta JC}$	0.9	$^\circ\text{C/W}$
	per device		0.6	
	per device	$R_{\theta JA}$ (1)(2)	48	

**Notes**

- (1) The heat generated must be less than the thermal conductivity from junction-to-ambient:  $dP_D/dT_J < 1/R_{\theta JA}$   
 (2) Free air, without heatsink

<b>ORDERING INFORMATION</b> (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-3PW	VT60L45PW-M3/4W	4.5	4W	30/tube	Tube

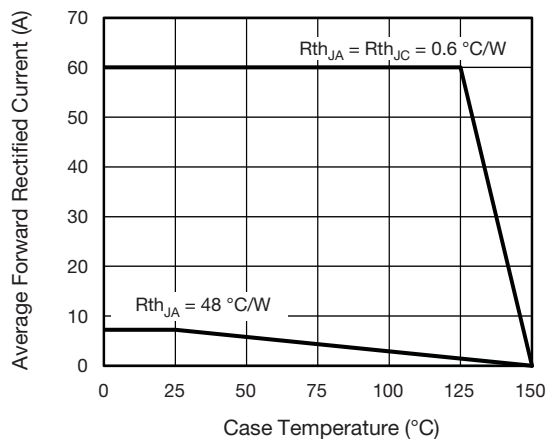
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

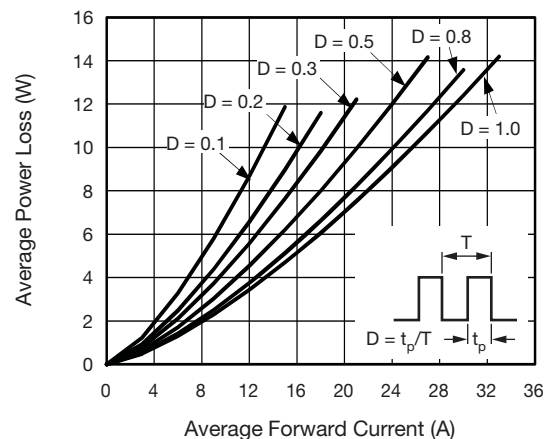


Fig. 2 - Forward Power Loss Characteristics Per Diode

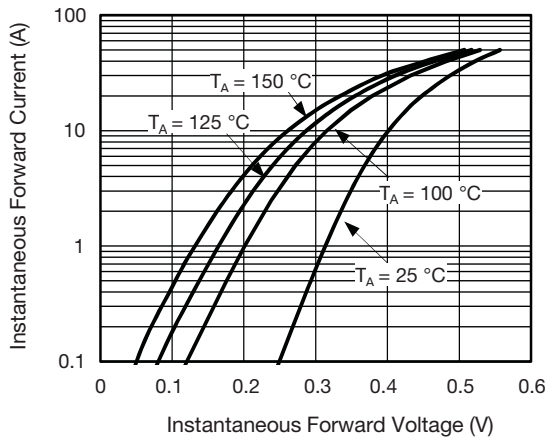


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

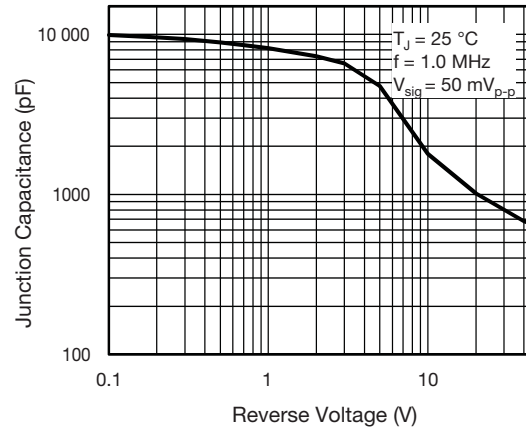


Fig. 5 - Typical Junction Capacitance Per Diode

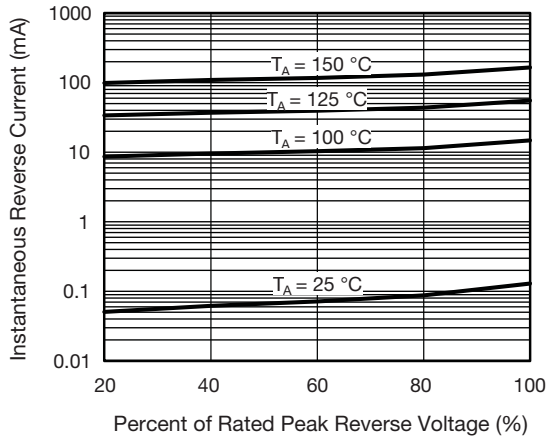


Fig. 4 - Typical Reverse Characteristics Per Diode

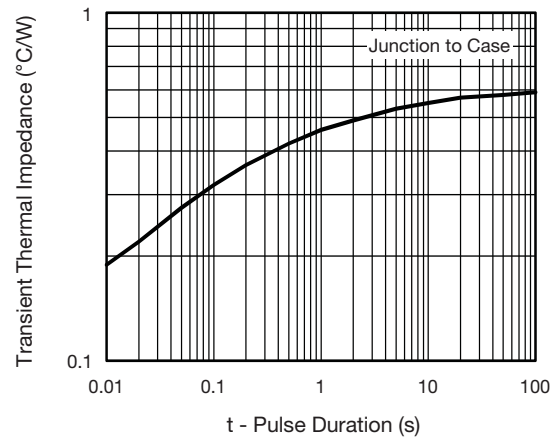
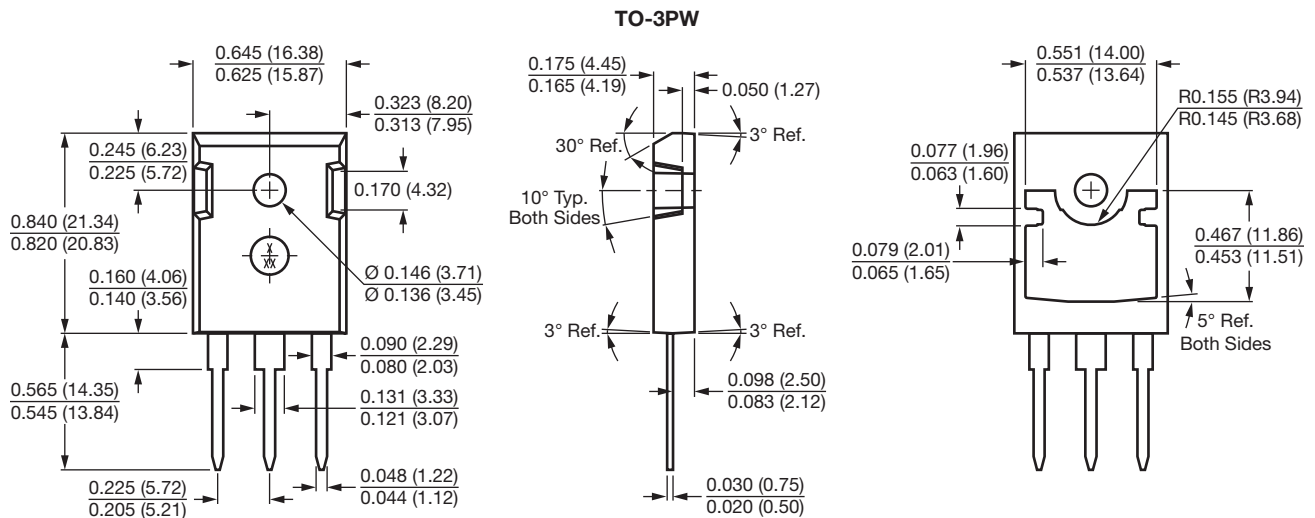


Fig. 6 - Typical Transient Thermal Impedance Per Diode

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





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