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[Vishay Semiconductor/Diodes Division](#)
[V80H150PW-M3/4W](#)

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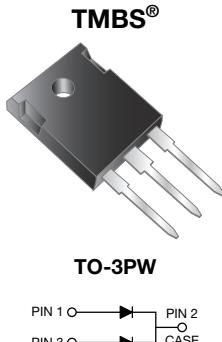
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V80H150PW-M3

Vishay General Semiconductor

Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.51 V at I_F = 10 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



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-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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 40 A
V_{RRM}	150 V
I_{FSM}	280 A
V_F at I_F = 40 A	0.68 V
T_J max.	175 °C
Package	TO-3PW
Diode variation	Dual common cathode

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	V80H150PW	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	150	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	80	A
per device per diode		40	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	280	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



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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	$I_F = 10 \text{ A}$	$T_A = 25^\circ\text{C}$	$V_F^{(1)}$	0.65	-	V	
	$I_F = 20 \text{ A}$			0.74	-		
	$I_F = 40 \text{ A}$			0.82	0.91		
	$I_F = 10 \text{ A}$	$T_A = 125^\circ\text{C}$		0.51	-		
	$I_F = 20 \text{ A}$			0.59	-		
	$I_F = 40 \text{ A}$			0.68	0.76		
Reverse current per diode	$V_R = 120 \text{ V}$	$T_A = 25^\circ\text{C}$	$I_R^{(2)}$	2	-	μA	
		$T_A = 125^\circ\text{C}$		3.1	-	mA	
	$V_R = 150 \text{ V}$	$T_A = 25^\circ\text{C}$		-	300	μA	
		$T_A = 125^\circ\text{C}$		4.4	48	mA	

Notes

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

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

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	V80H150PW			UNIT	
Typical thermal resistance	R_{0JC}	per diode		0.7	$^\circ\text{C/W}$	
		per device		0.5		

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-3PW	V80H150PW-M3/4W	4.5	4W	30/tube	Tube

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

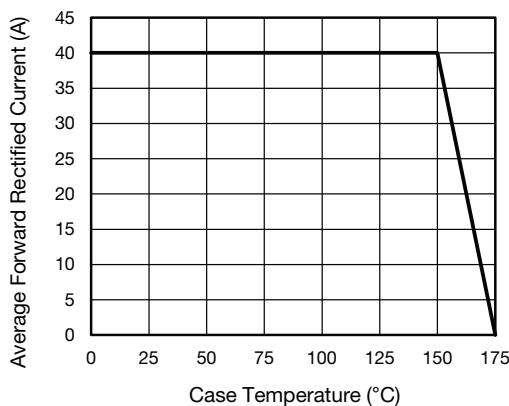


Fig. 1 - Maximum Forward Current Derating Curve

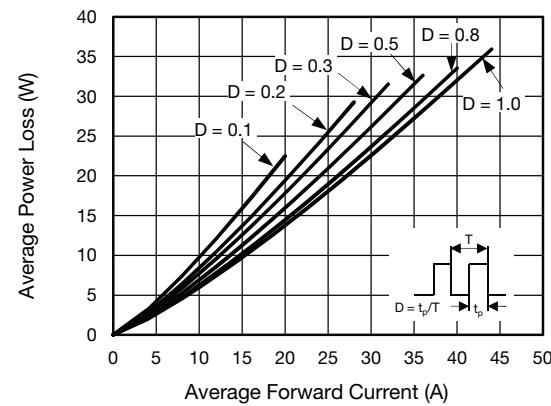


Fig. 2 - Forward Power Loss Characteristics Per Diode



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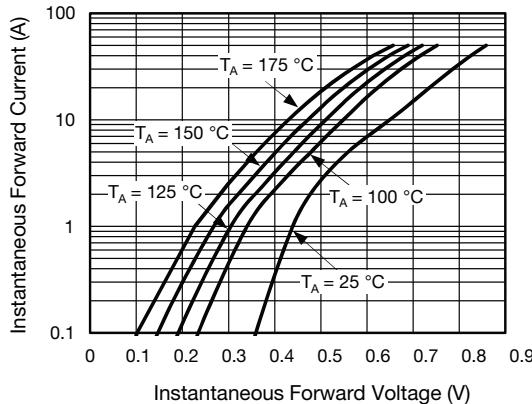


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

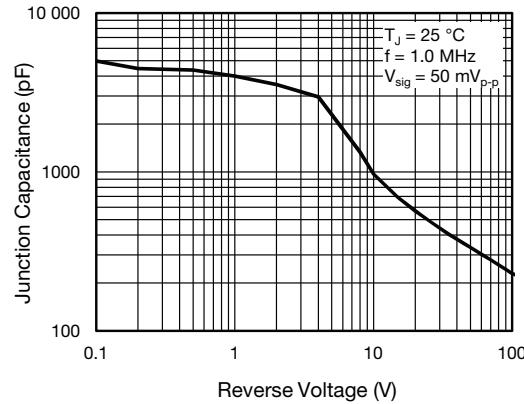


Fig. 5 - Typical Junction Capacitance Per Diode

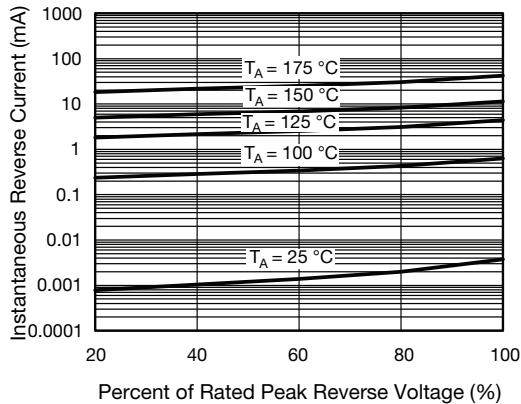


Fig. 4 - Typical Reverse Characteristics Per Diode

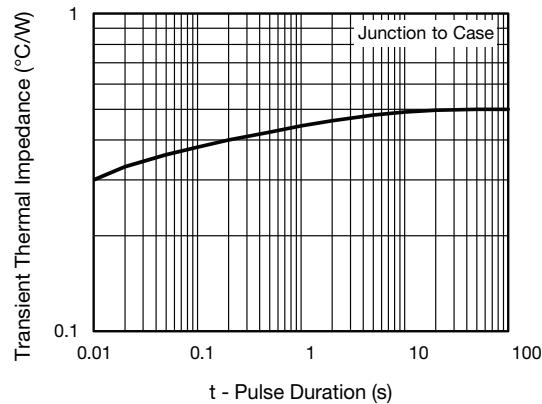
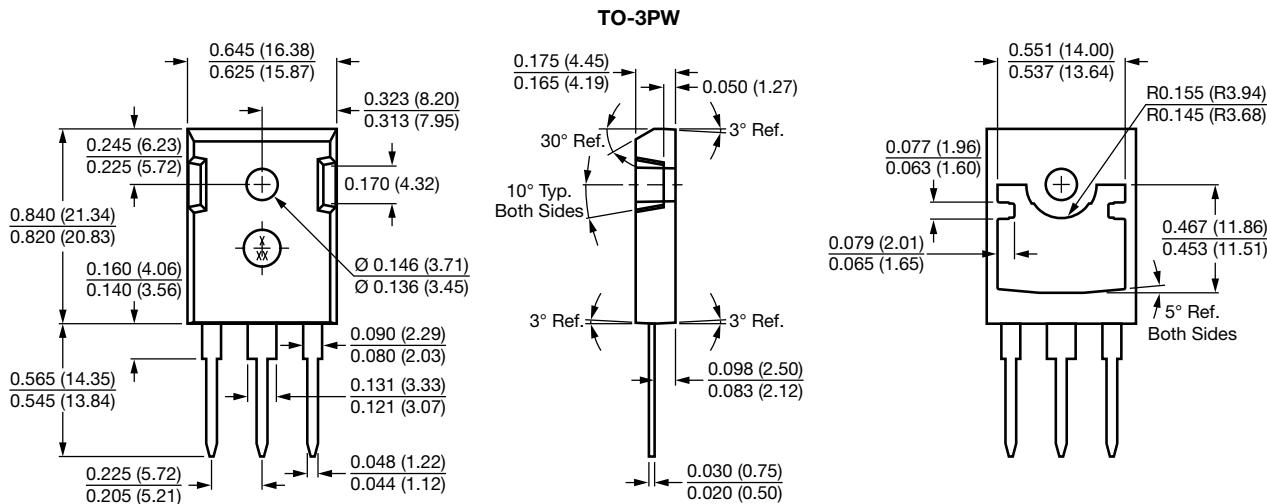


Fig. 6 - Typical Transient Thermal Impedance Per Device

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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