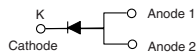



High Current Density Surface Mount High-Voltage Schottky Rectifier


TO-277A (SMPC)

FEATURES

- Very low profile - typical height of 1.1 mm 
- Ideal for automated placement
- Guardring for overvoltage protection
- High Barrier Technology, $T_j = 175\text{ }^\circ\text{C}$ Maximum
- Low leakage current
- Meets MSL level 1, per J-STD-020C
- Solder Dip $260\text{ }^\circ\text{C}$, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, free-wheeling diodes, dc-to-dc converters or polarity protection application.

MECHANICAL DATA

Case: TO-277A (SMPC)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: As marked

MAJOR RATINGS AND CHARACTERISTICS	
$I_{F(AV)}$	10 A
V_{RRM}	90 V, 100 V
I_{FSM}	200 A
E_{AS}	20 mJ
V_F at $I_F = 10\text{ A}$	0.661 V
I_R	0.3 μA
T_j max.	175 $^\circ\text{C}$

MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	SS10PH9	SS10PH10	UNIT
Device marking code		10H9	10H10	
Maximum repetitive peak reverse voltage	V_{RRM}	90	100	V
Maximum average forward rectified current (see Fig. 1)	$I_{F(AV)}$	10		A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	200		A
Non-repetitive avalanche energy at $I_{AS} = 2\text{ A}$, $L = 10\text{ mH}$, $T_j = 25\text{ }^\circ\text{C}$	E_{AS}	20		mJ
Voltage rate of change (rated V_R)	dv/dt	10000		V/ μs
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 175		$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage ⁽¹⁾	at I _F = 5 A at I _F = 10 A	V _F	0.725 0.800	- 0.85	V
	at I _F = 5 A at I _F = 10 A		0.581 0.661	- 0.70	
Reverse current ⁽¹⁾	at rated V _R	I _R	0.3 0.3	10 3.0	μA mA
Typical junction capacitance	at 4.0 V, 1 MHz	C _J	270	-	pF

Note:

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SS10PH9	SS10PH10	UNIT
Typical thermal resistance	R _{θJA} ⁽¹⁾	60		°C/W
	R _{θJL}	3		

Note:

(1) Units mounted on recommended P.C.B. 2 oz. pad layout

ORDERING INFORMATION				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS10PH10-E3/86A	0.10	86A	1500	7" Diameter Plastic Tape & Reel
SS10PH10-E3/87A	0.10	87A	6500	13" Diameter Plastic Tape & Reel

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

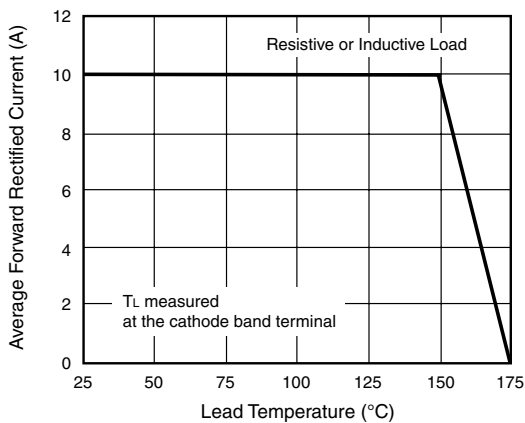


Figure 1. Maximum Forward Current Derating Curve

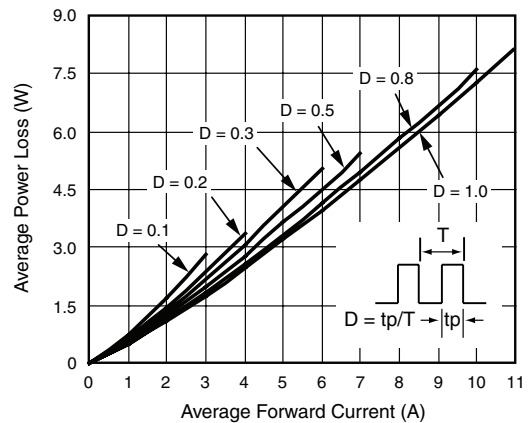


Figure 2. Forward Power Loss Characteristics

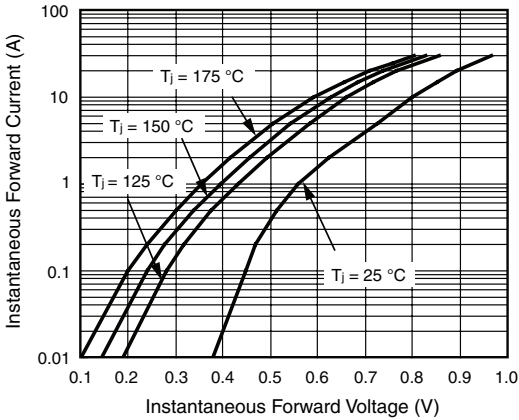


Figure 3. Typical Instantaneous Forward Characteristics

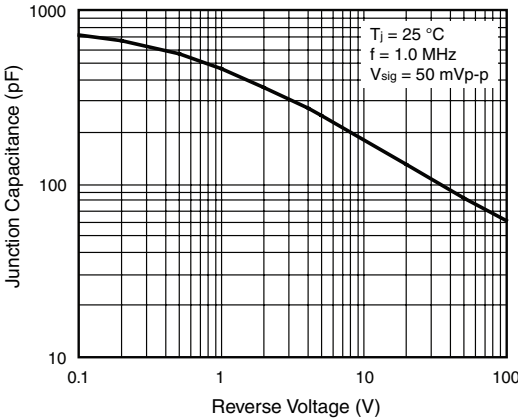


Figure 5. Typical Junction Capacitance

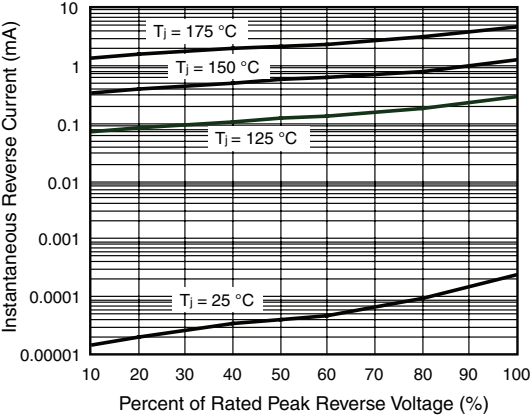


Figure 4. Typical Reverse Characteristics

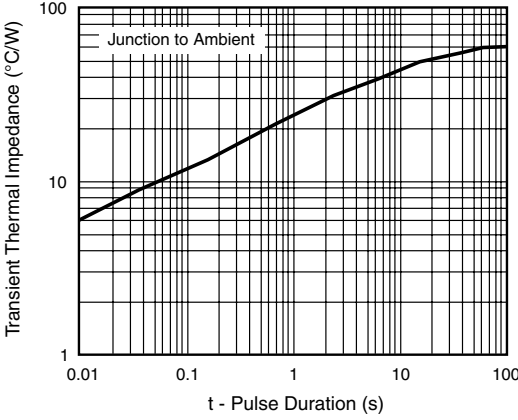
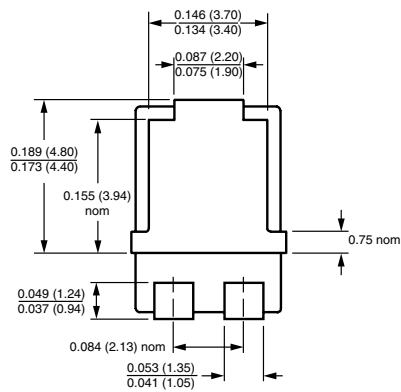
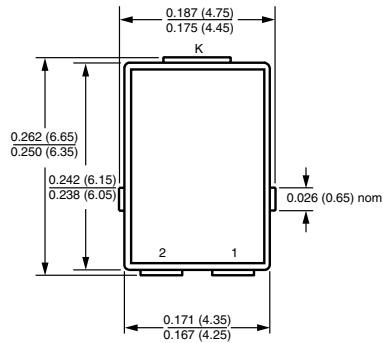


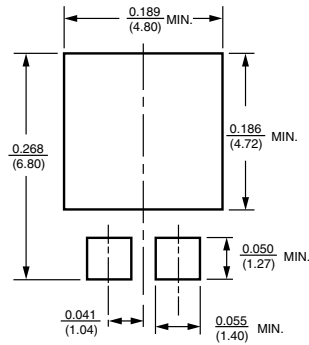
Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-277A (SMPC)



Mounting Pad Layout



Conform to JEDEC TO-277A



Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.