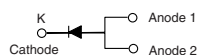


High Current Density Surface Mount Schottky Barrier Rectifiers

eSMP™ Series



TO-277A (SMPC)



FEATURES

- Very low profile - typical height of 1.1 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency
- Low thermal resistance
- Meets MSL level 1, per J-STD-020C, LF max peak of 260 °C
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



MAJOR RATINGS AND CHARACTERISTICS

$I_{F(AV)}$	5 A
V_{RRM}	30 V, 40 V
I_{FSM}	150 A
E_{AS}	20 mJ
V_F at $I_F = 5.0$ A	0.403 V
T_j max.	150 °C

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, free-wheeling, dc-to-dc converters and polarity protection applications.

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

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	SS5P3	SS5P4	UNIT
Device marking code		S53	S54	
Maximum repetitive peak reverse voltage	V_{RRM}	30	40	V
Maximum average forward rectified current (see Fig. 1)	$I_{F(AV)}$	5.0		A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	150		A
Non-repetitive avalanche energy at $I_{AS} = 2$ A, $L = 10$ mH, $T_j = 25$ °C	E_{AS}	20		mJ
Voltage rate of change (rated V_R)	dv/dt	10000		V/ μ s
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150		°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX.	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	at $I_F = 2.5\text{ A}$ at $I_F = 5.0\text{ A}$ $T_J = 25\text{ }^{\circ}\text{C}$	V_F	0.416 0.476	- 0.52	V
	at $I_F = 2.5\text{ A}$ at $I_F = 5.0\text{ A}$ $T_J = 125\text{ }^{\circ}\text{C}$		0.312 0.403	- 0.45	
Maximum reverse current ⁽¹⁾	at rated V_R $T_J = 25\text{ }^{\circ}\text{C}$ $T_J = 125\text{ }^{\circ}\text{C}$	I_R	61.8 26.7	250 40	μA mA
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	280	-	pF

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	SS5P3	SS5P4	UNIT
Typical thermal resistance	$R_{\theta JA}$ ⁽¹⁾	60		$^{\circ}\text{C/W}$
	$R_{\theta JL}$	3		

Note:

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS5P4-E3/86A	0.10	86A	1500	7" Diameter Plastic Tape & Reel
SS5P4-E3/87A	0.10	87A	6500	13" Diameter Plastic Tape & Reel

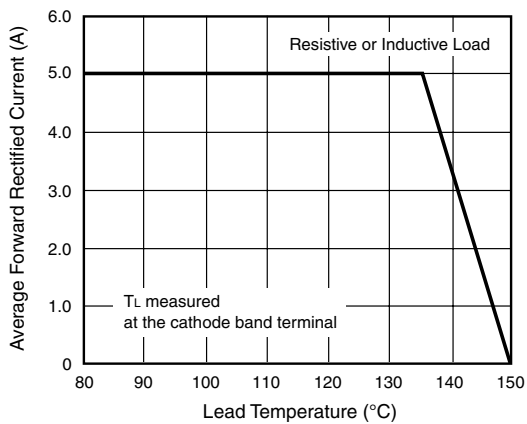
RATINGS AND CHARACTERISTICS CURVES($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Figure 1. Maximum Forward Current Derating Curve

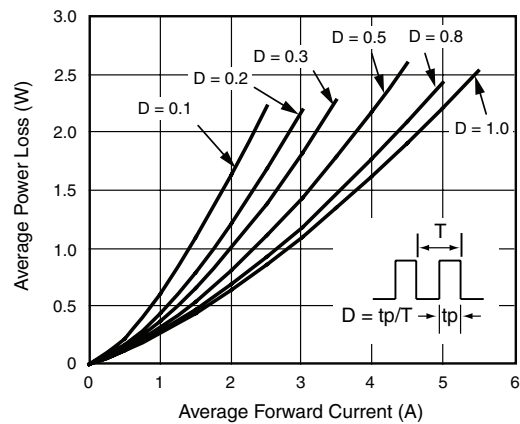


Figure 2. Forward Power Loss Characteristics

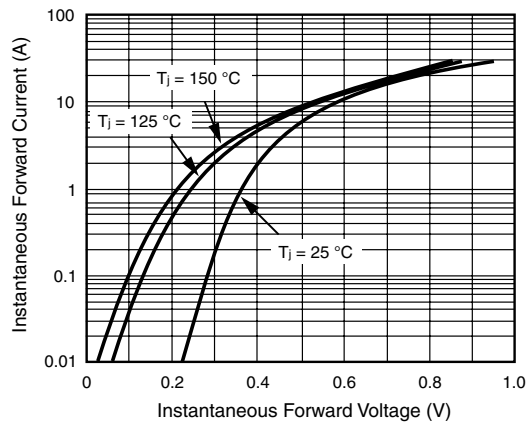


Figure 3. Typical Instantaneous Forward Characteristics

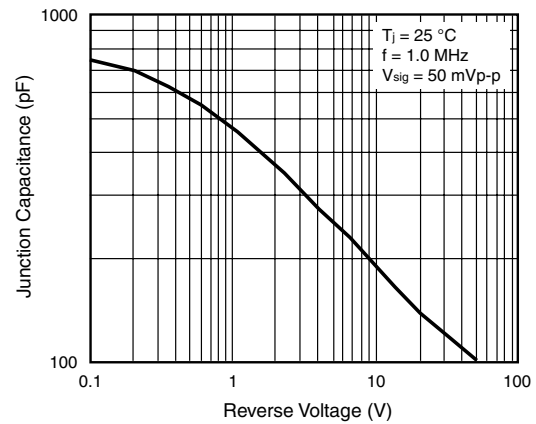


Figure 5. Typical Junction Capacitance

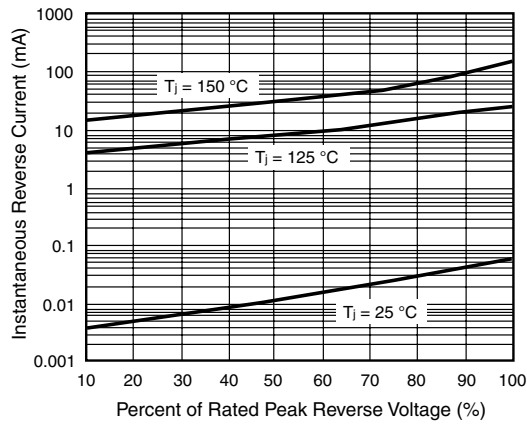


Figure 4. Typical Reverse Leakage Characteristics

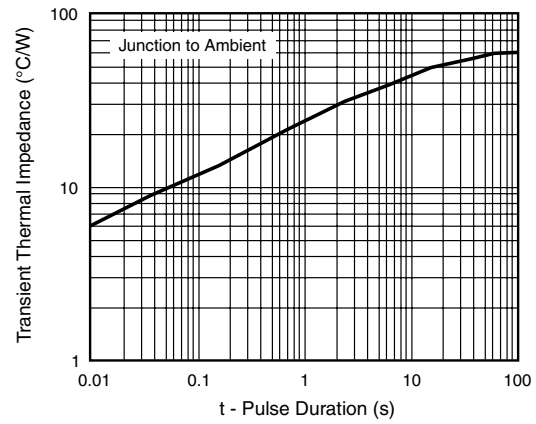
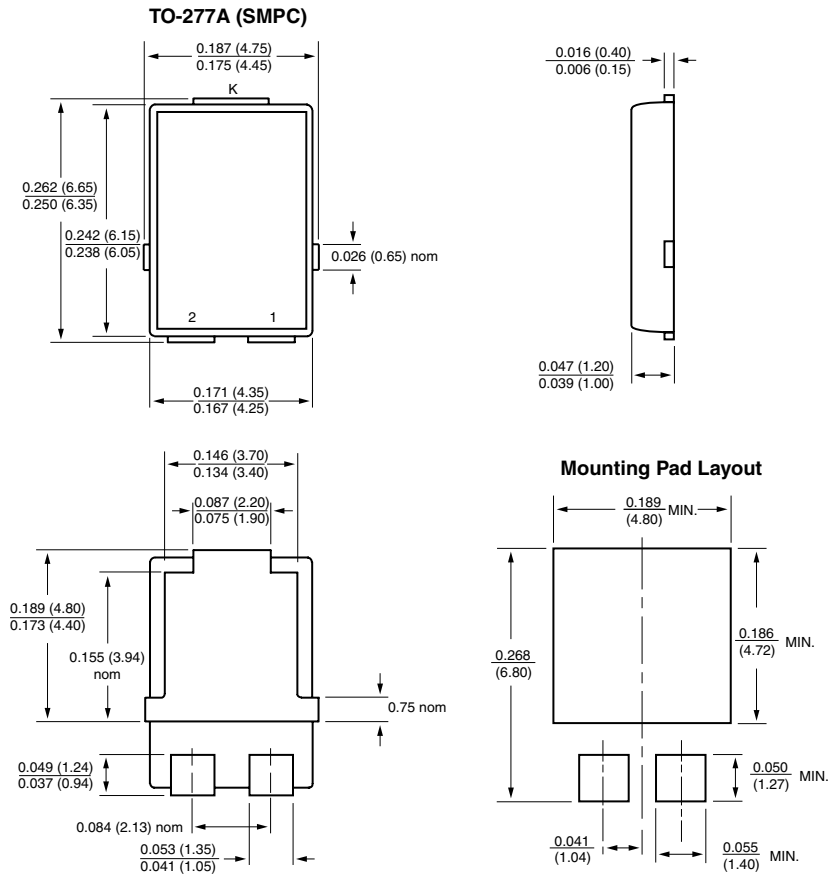


Figure 6. Typical Transient Thermal Impedance

SS5P3 & SS5P4

Vishay General Semiconductor

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

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.