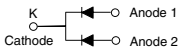
High Current Density Surface Mount Dual Common-Cathode Schottky Rectifier

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-020, LF maximum peak of 260 °C
- 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, freewheeling diodes, dc-to-dc converters and polarity protection application.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 4 A
V_{RRM}	30 V, 40 V
I_{FSM}	120 A
E_{AS}	20 mJ
V_F at I_F = 4 A	0.42 V
T_J max.	150 °C

MECHANICAL DATA

Case: TO-277A (SMPC)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for commercial grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

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

PARAMETER		SYMBOL	SS8P3C	SS8P4C	UNIT
Device marking code			S83C	S84C	
Maximum repetitive peak reverse voltage		V_{RRM}	30	40	V
Maximum average forward rectified current (Fig. 1)	total device per diode	$I_{F(AV)}$	8 4		A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load per diode		I_{FSM}	120		A
Non-repetitive avalanche energy at 25 °C, I_{AS} = 2 A per diode		E_{AS}	20		mJ
Operating junction and storage temperature range		T_J, T_{STG}	- 55 to + 150		°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Instantaneous forward voltage per diode (1)	I_F = 2.0 A I_F = 4.0 A	T_A = 25 °C	V_F	0.42 0.48	- 0.58	V
	I_F = 2.0 A I_F = 4.0 A	T_A = 125 °C		0.32 0.42	- 0.48	
Reverse current per diode (1)	rated V_R	T_A = 25 °C T_A = 125 °C	I_R	130 26	300 35	µA mA
Typical junction capacitance per diode	4.0 V, 1 MHz		C_J	230	-	pF

Note:

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

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**SS8P3C**	**SS8P4C**	**UNIT**
Typical thermal resistance per diode	$R_{\theta JA}$ (1) $R_{\theta JL}$	60 3		°C/W

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**
SS8P4C-E3/86A	0.10	86A	1500	7" diameter plastic tape and reel
SS8P4C-E3/87A	0.10	87A	6500	13" diameter plastic tape and reel
SS8P4CHE3/86A (1)	0.10	86A	1500	7" diameter plastic tape and reel
SS8P4CHE3/87A (1)	0.10	87A	6500	13" diameter plastic tape and reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

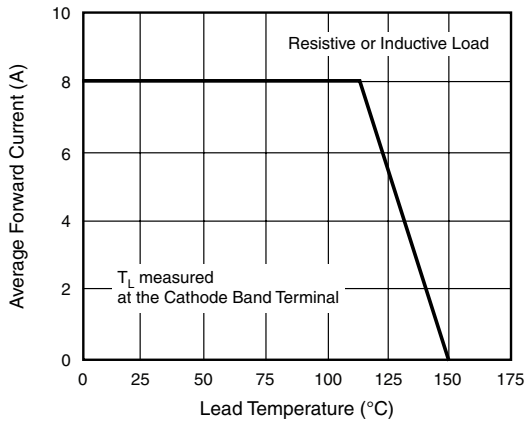


Figure 1. Maximum Forward Current Derating Curve

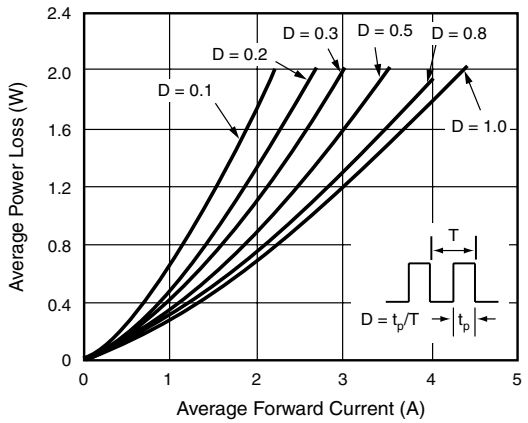


Figure 2. Forward Power Loss Characteristics Per Diode

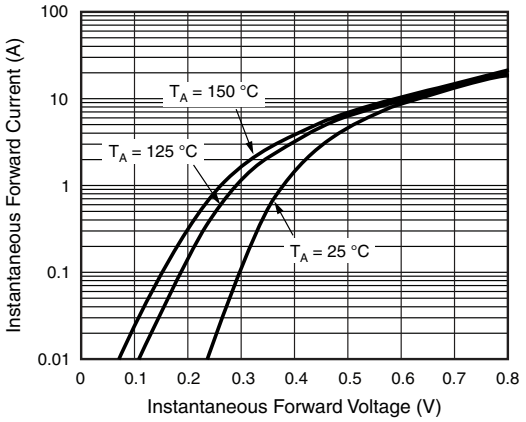


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

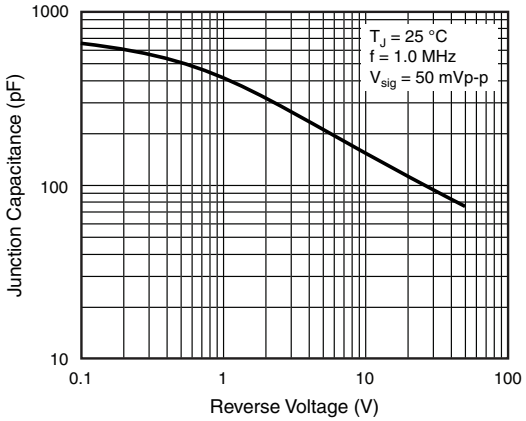


Figure 5. Typical Junction Capacitance Per Diode

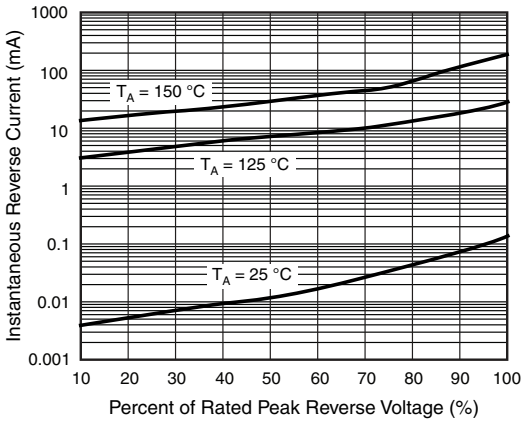


Figure 4. Typical Reverse Leakage Characteristics Per Diode

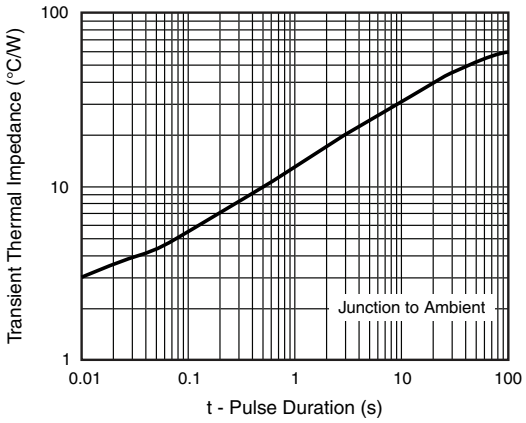
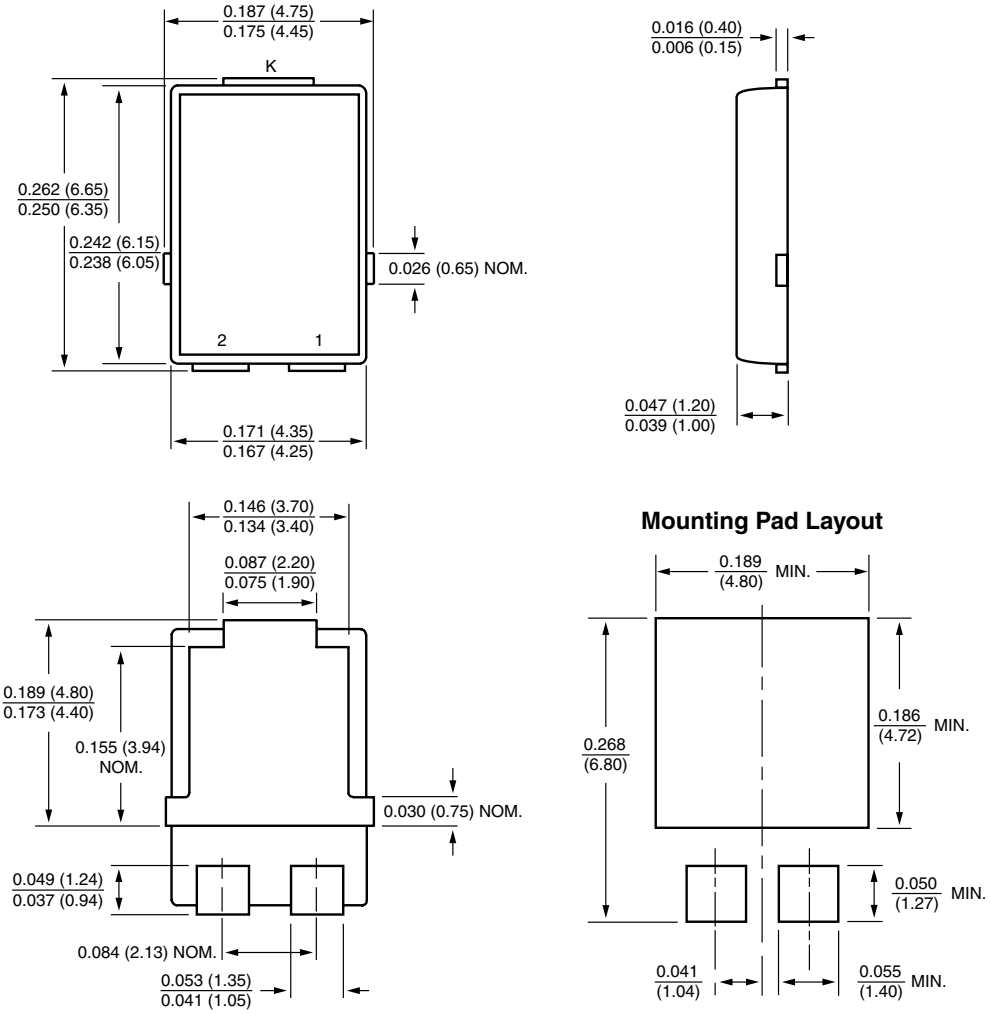


Figure 6. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-277A (SMPC)



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.