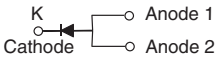
High Current Density Surface Mount Schottky Barrier Rectifiers

eSMP® Series



SMPC (TO-277A)



FEATURES

- Very low profile - typical height of 1.1 mm
- Ideal for automated placement
- Low forward voltage drop
- Low power loss, high efficiency
- Low thermal resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
  - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE Available

RoHS COMPLIANT

HALOGEN FREE

DESIGN SUPPORT TOOLS

click logo to get started

3D Models Available

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	8.0 A
V_{RRM}	20 V, 30 V
I_{FSM}	150 A
E_{AS}	20 mJ
V_F at I_F = 8.0 A	0.472 V
T_J max.	150 °C
Package	SMPC (TO-277A)
Circuit configuration	Single

MECHANICAL DATA

Case: SMPC (TO-277A)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade
Base P/NHM3_X - halogen-free, RoHS-compliant and AEC-Q101 qualified
("_X" denotes revision code e.g. A, B,.....)

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
M3 suffix meets JESD 201 class 2 whisker test, HM3 suffix meets JESD 201 class 2 whisker test

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**SS8P2L**	**SS8P3L**	**UNIT**
Device marking code		S82	S83	
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	8.0		A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	150		
Non-repetitive avalanche energy at I_{AS} = 2 A, T_J = 25 °C	E_{AS}	20		mJ
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150		°C

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**SYMBOL**	**TEST CONDITIONS**		**TYP.**	**MAX.**	**UNIT**
Maximum instantaneous forward voltage	V_F (1)	I_F = 4.0 A	T_A = 25 °C	0.447	-	V
		I_F = 8.0 A		0.533	0.57	
		I_F = 4.0 A	T_A = 125 °C	0.357	-	
		I_F = 8.0 A		0.472	0.49	
Maximum reverse current	$I_{R\ (2)}$	V_R = 30 V	T_A = 25 °C	55	200	µA
			T_A = 125 °C	24	35	mA
Typical junction capacitance	C_J	4.0 V, 1 MHz		330	-	pF

Notes

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

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**SS8P2L**	**SS8P3L**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)	60		°C/W
	$R_{\theta JL}$	3.5		

Note

(1) Units mounted on recommended PCB 1 oz. pad layout

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
SS8P3L-M3/86A	0.1	86A	1500	7" diameter plastic tape and reel
SS8P3L-M3/87A	0.1	87A	6500	13" diameter plastic tape and reel
SS8P3LHM3_A/H (1)	0.1	H	1500	7" diameter plastic tape and reel
SS8P3LHM3_A/I (1)	0.1	I	6500	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

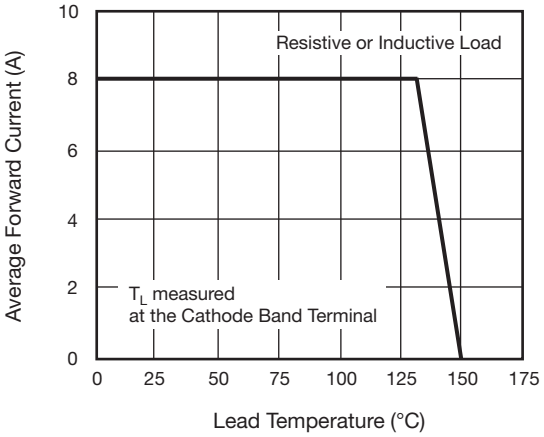


Fig. 1 - Maximum Forward Current Derating Curve

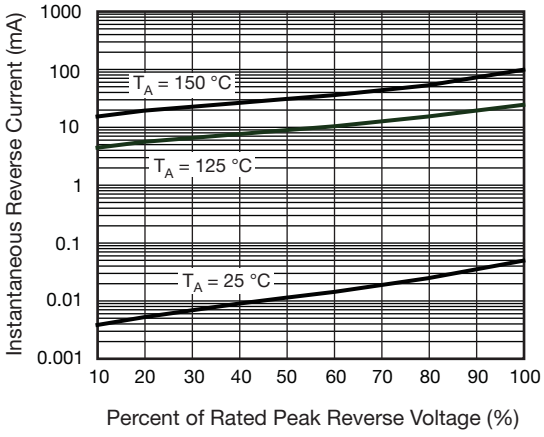


Fig. 4 - Typical Reverse Leakage Characteristics

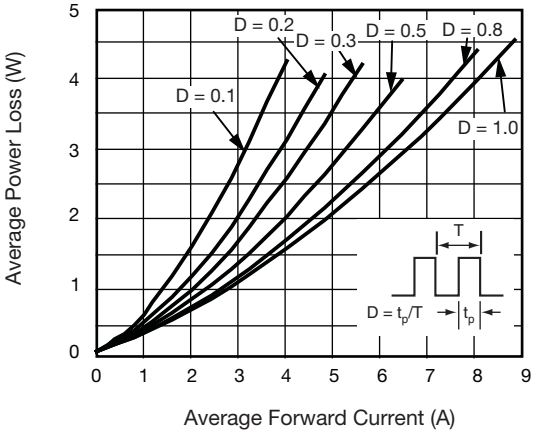


Fig. 2 - Forward Power Loss Characteristics

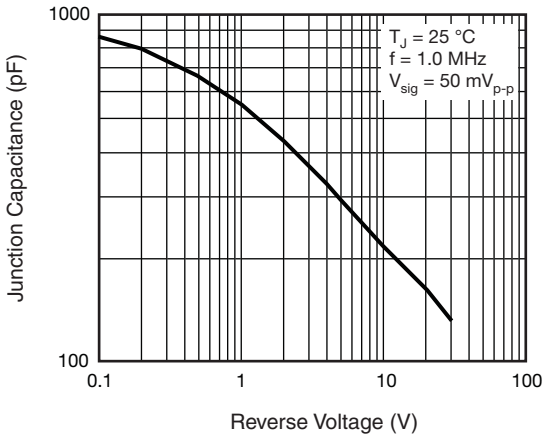


Fig. 5 - Typical Junction Capacitance

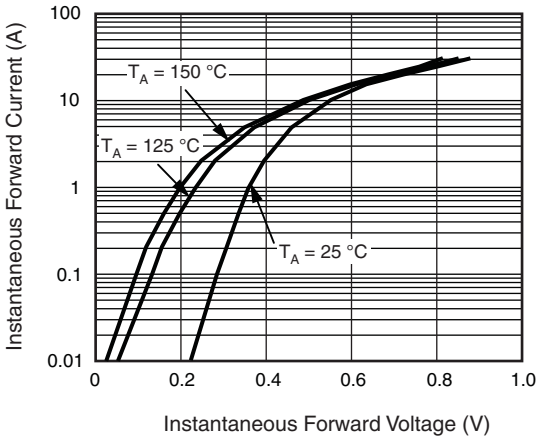


Fig. 3 - Typical Instantaneous Forward Characteristics

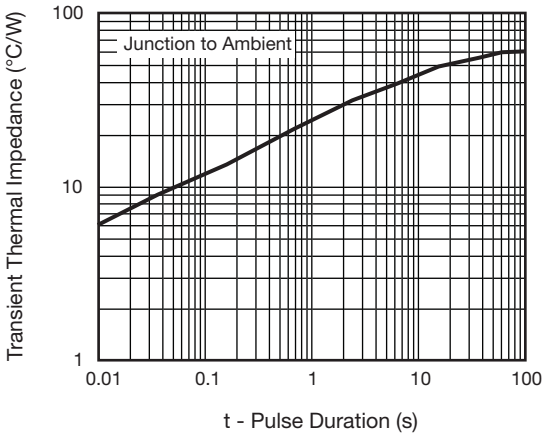
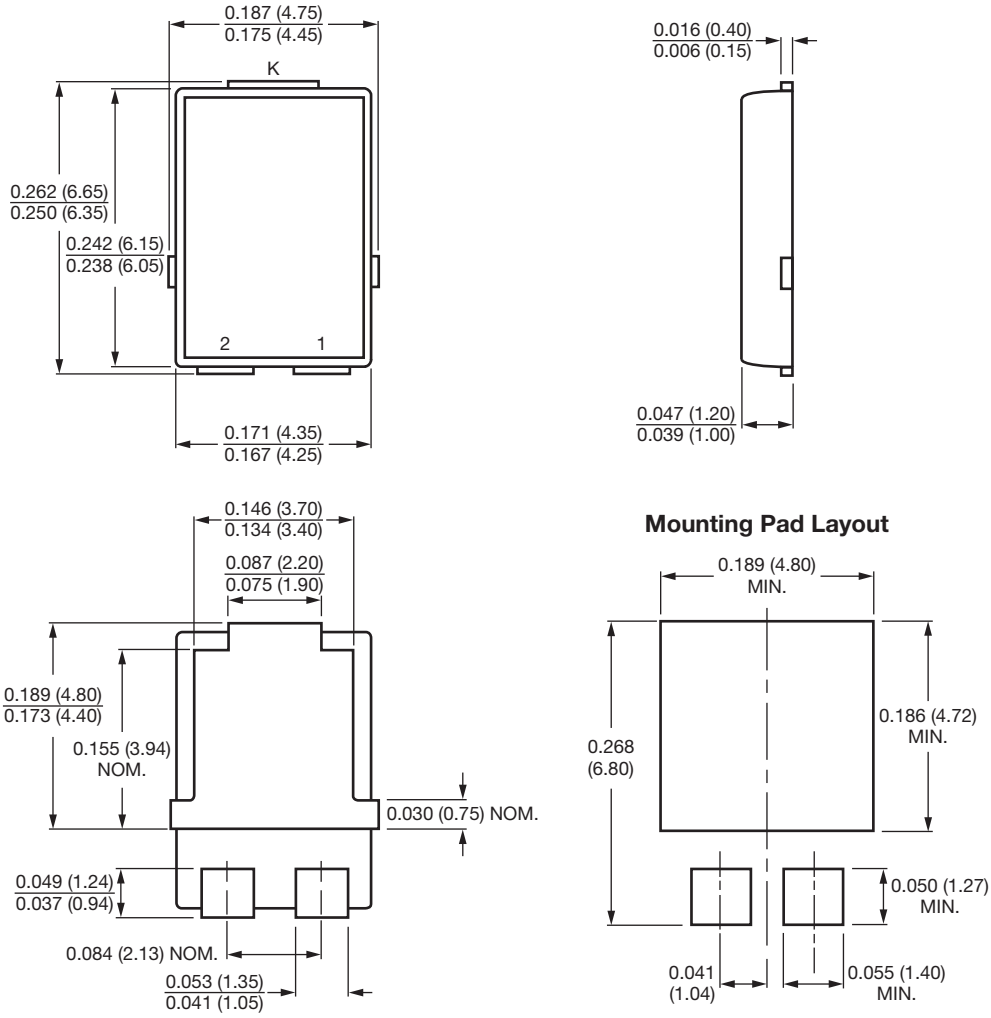


Fig. 6 - Typical Transient Thermal Impedance

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMPC (TO-277A)



Mounting Pad Layout

Conform to JEDEC® TO-277A

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