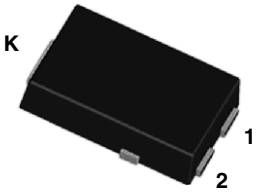
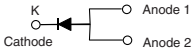
High Current Density Surface Mount Schottky Barrier Rectifiers

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-020, LF maximum peak of 260 °C
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC
- **Halogen-free**

RoHS COMPLIANT

HALOGEN FREE

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

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: TO-277A (SMPC)

Molding compound meets UL 94V-0 flammability rating.

Base P/N-E3 - RoHS compliant, commercial grade
Base P/NHE3 - RoHS compliant, high reliability/ automotive grade (AEC-Q101 qualified)
Base P/N-M3 - halogen-free and RoHS compliant, commercial grade
Base P/NHM3 - halogen-free and RoHS compliant, high reliability/automotive grade (AEC-Q101 qualified)

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102
E3 and M3 suffix meets JESD 201 class 1A whisker test, HE3 and 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		A
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

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Maximum instantaneous forward voltage (1)	I_F = 4.0 A I_F = 8.0 A	T_A = 25 °C	V_F	0.447 0.533	- 0.57	V
	I_F = 4.0 A I_F = 8.0 A	T_A = 125 °C		0.357 0.472	- 0.49	
Maximum reverse current (2)	V_R = 30 V	T_A = 25 °C T_A = 125 °C	I_R	55 24	200 35	µA mA
Typical junction capacitance	4.0 V, 1 MHz		C_J	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) $R_{\theta JL}$	60 3.5		°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**
SS8P3L-E3/86A	0.10	86A	1500	7" diameter plastic tape and reel
SS8P3L-E3/87A	0.10	87A	6500	13" diameter plastic tape and reel
SS8P3LHE3/86A (1)	0.10	86A	1500	7" diameter plastic tape and reel
SS8P3LHE3/87A (1)	0.10	87A	6500	13" diameter plastic tape and reel
SS8P3L-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel
SS8P3L-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel
SS8P3LHM3/86A (1)	0.10	86A	1500	7" diameter plastic tape and reel
SS8P3LHM3/87A (1)	0.10	87A	6500	13" diameter plastic tape and reel

Note:

(1) High reliability/automotive grade (AEC-Q101 qualified)

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

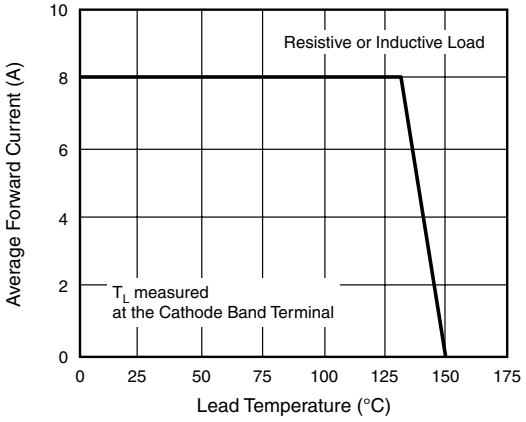


Figure 1. Maximum Forward Current Derating Curve

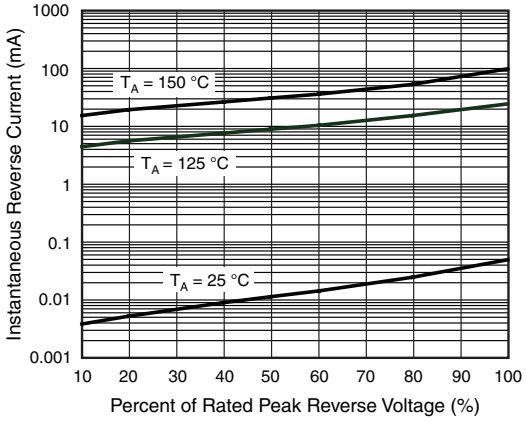


Figure 4. Typical Reverse Leakage Characteristics

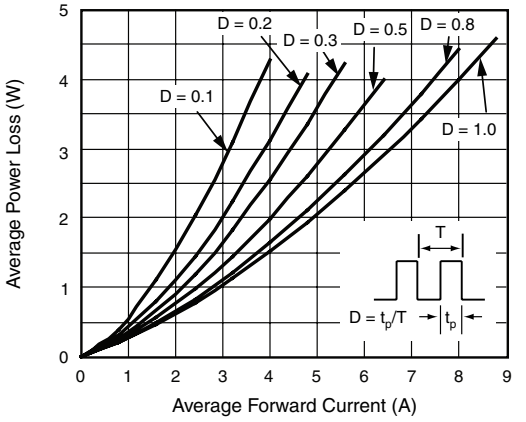


Figure 2. Forward Power Loss Characteristics

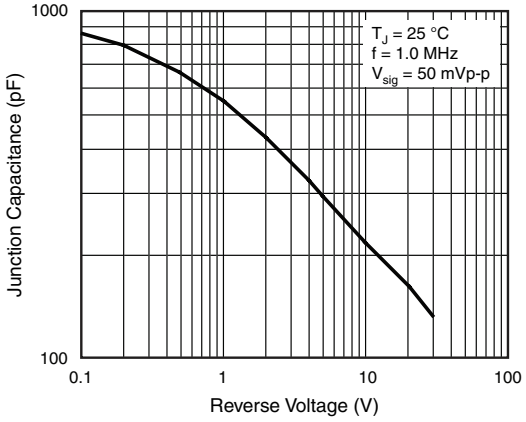


Figure 5. Typical Junction Capacitance

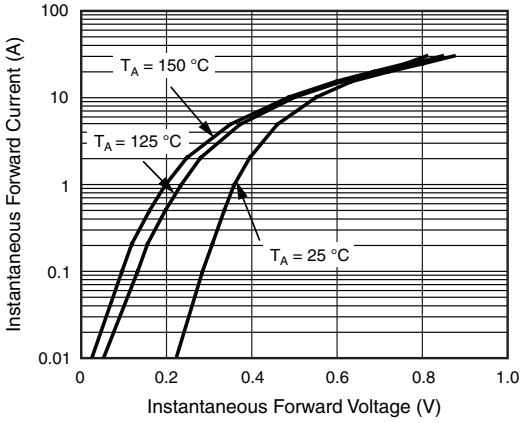


Figure 3. Typical Instantaneous Forward Characteristics

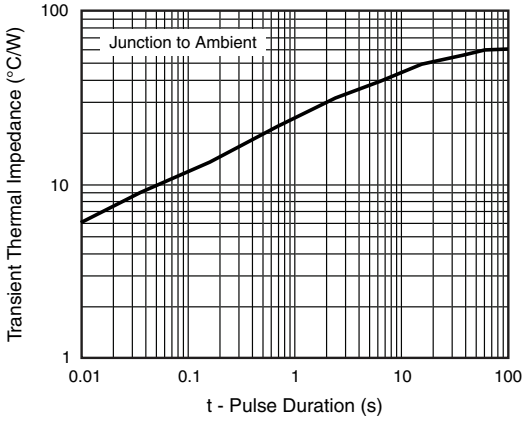
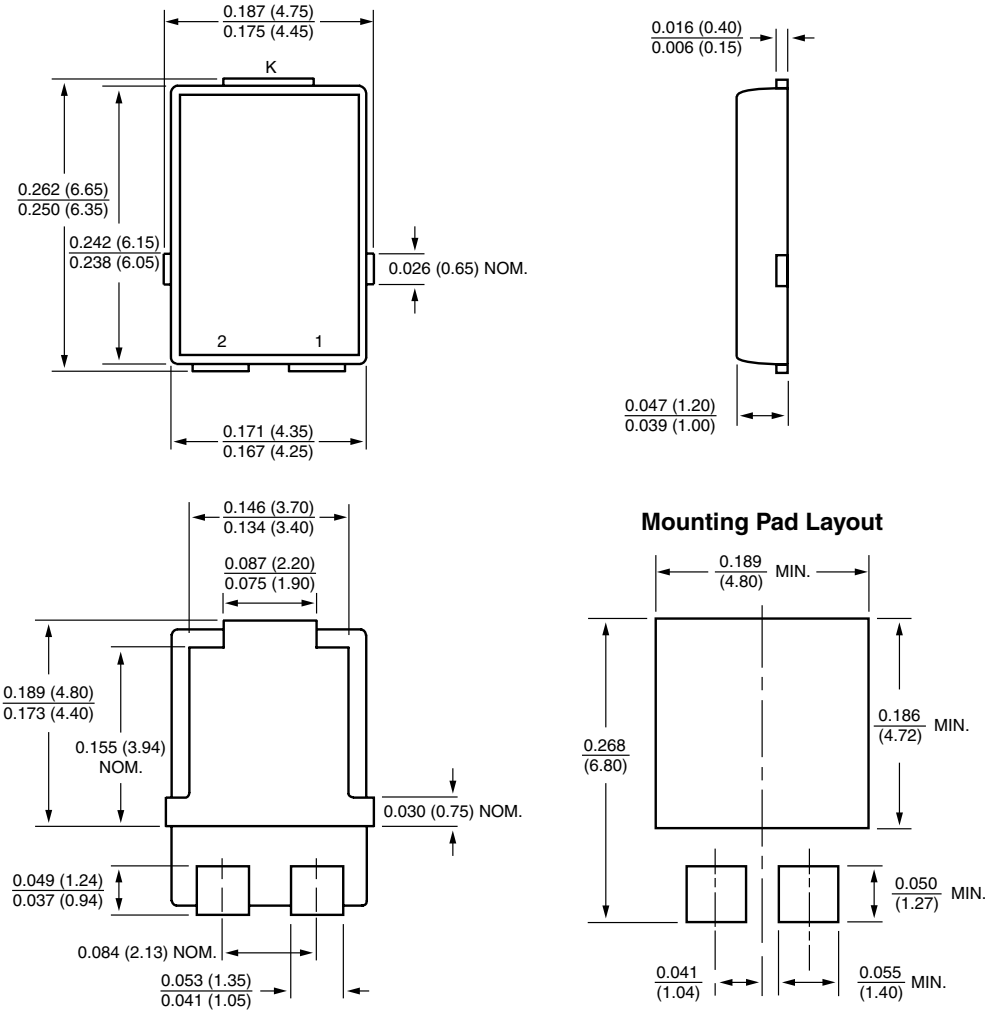


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-277A (SMPC)



Conform to JEDEC TO-277A

For technical questions within your region, please contact one of the following:
PDD-Americas@vishay.com, PDD-Asia@vishay.com, PDD-Europe@vishay.com

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