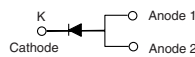


## Low $V_F$ High Current Density Surface Mount Schottky Barrier Rectifiers

**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

**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

<b>MAJOR RATINGS AND CHARACTERISTICS</b>	
$I_{F(AV)}$	3 A
$V_{RRM}$	50 V, 60 V
$I_{FSM}$	150 A
$E_{AS}$	20 mJ
$V_F$ at $I_F = 3.0$ A	0.478 V
$T_j$ max.	150 °C

<b>MAXIMUM RATINGS</b> ( $T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	SS3P5L	SS3P6L	UNIT
Device marking code		S35	S36	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	60	V
Maximum average forward rectified current (see Fig. 1)	$I_{F(AV)}$	3.0		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/ $\mu$ s
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150		°C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX.	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	at I <sub>F</sub> = 1.5 A at I <sub>F</sub> = 3.0 A	V <sub>F</sub>	0.464 0.542	- 0.60	V
	T <sub>J</sub> = 25 °C				
	at I <sub>F</sub> = 1.5 A at I <sub>F</sub> = 3.0 A		0.379 0.478	- 0.54	
	T <sub>J</sub> = 125 °C				
Maximum reverse current <sup>(1)</sup>	at rated V <sub>R</sub>	I <sub>R</sub>	8.4 3.4	150 15	μA mA
Typical junction capacitance	at 4.0 V, 1 MHz	C <sub>J</sub>	200	-	pF

Note:

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

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SS3P5L	SS3P6L	UNIT
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	65		°C/W
	R <sub>θJL</sub>	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
SS3P5L-E3/86A	0.10	86A	1500	7" Diameter Plastic Tape & Reel
SS3P5L-E3/87A	0.10	87A	6500	13" Diameter Plastic Tape & Reel

RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

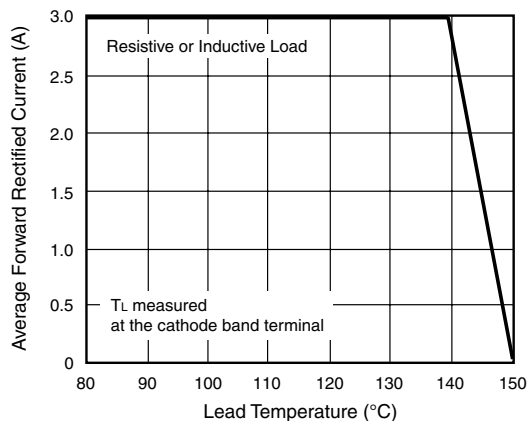


Figure 1. Maximum Forward Current Derating Curve

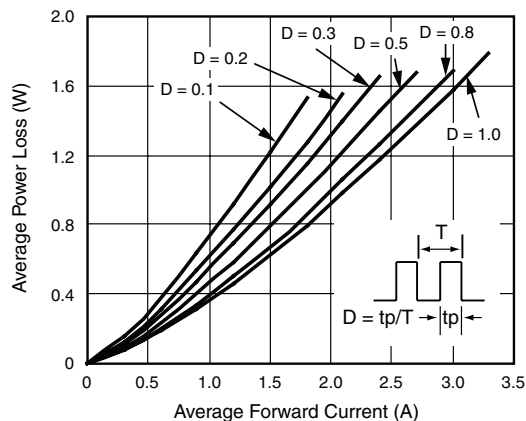


Figure 2. Forward Power Loss Characteristics

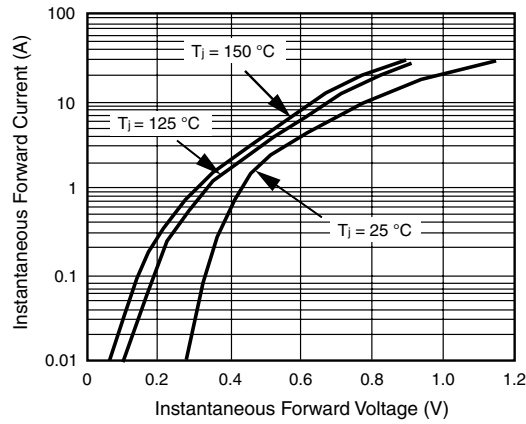


Figure 3. Typical Instantaneous Forward Characteristics

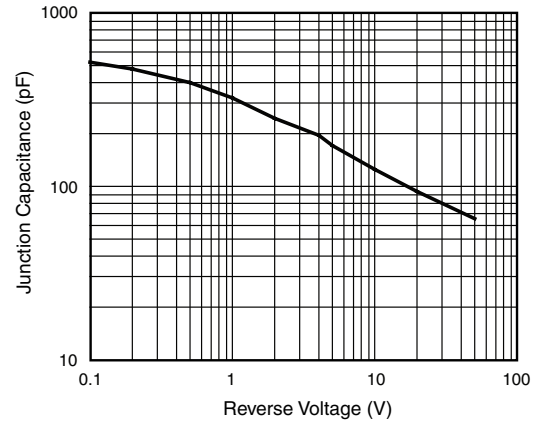


Figure 5. Typical Junction Capacitance

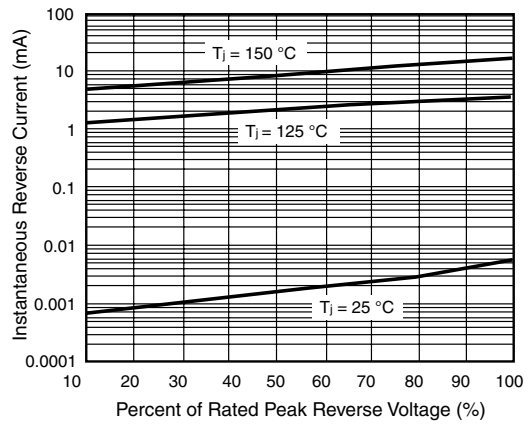


Figure 4. Typical Reverse Characteristics

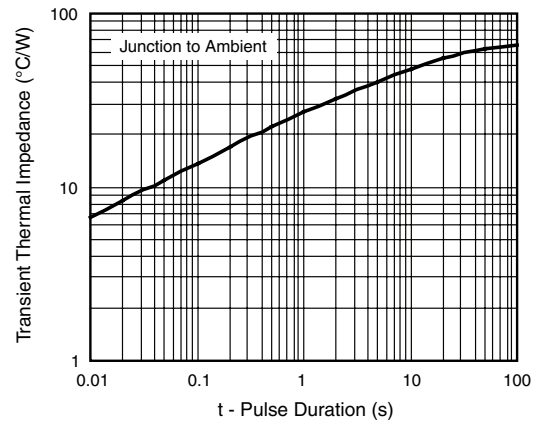


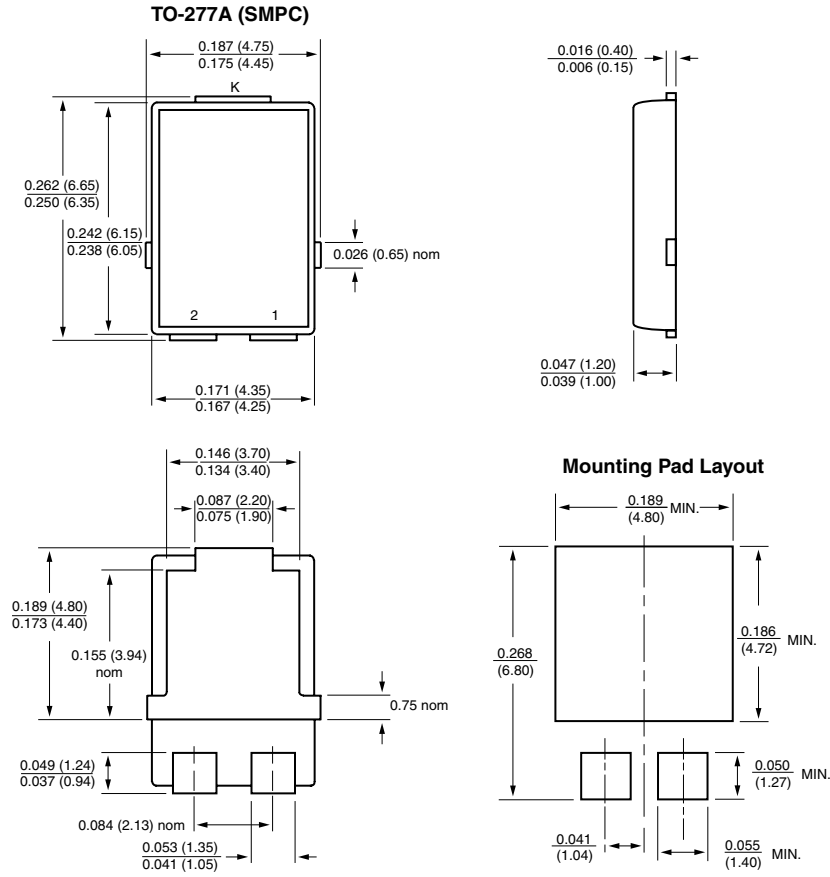
Figure 6. Typical Transient Thermal Impedance

# SS3P5L & SS3P6L



Vishay General Semiconductor

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Conform to JEDEC TO-277A



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