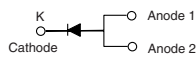


High Current Density Surface Mount Schottky Barrier Rectifiers

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

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

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 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX.	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	at I _F = 2.5 A at I _F = 5.0 A	V _F	0.416 0.476	- 0.52	V
	T _J = 25 °C				
	at I _F = 2.5 A at I _F = 5.0 A	T _J = 125 °C	0.312 0.403	- 0.45	
Maximum reverse current ⁽¹⁾	at rated V _R	I _R	61.8 26.7	250 40	μA mA
	T _J = 25 °C T _J = 125 °C				
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 °C unless otherwise noted)				
PARAMETER	SYMBOL	SS5P3	SS5P4	UNIT
Typical thermal resistance	R _{θJA} ⁽¹⁾	60		°C/W
	R _{θJL}	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 °C unless otherwise noted)

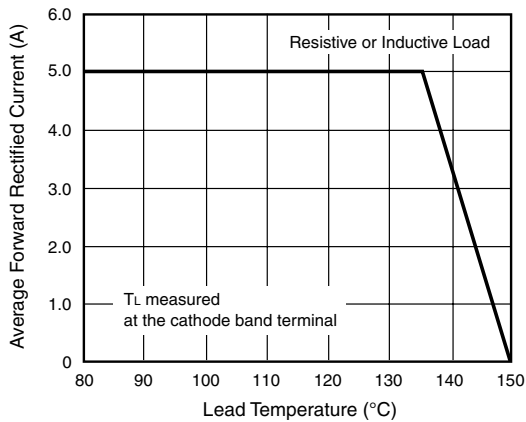


Figure 1. Maximum Forward Current Derating Curve

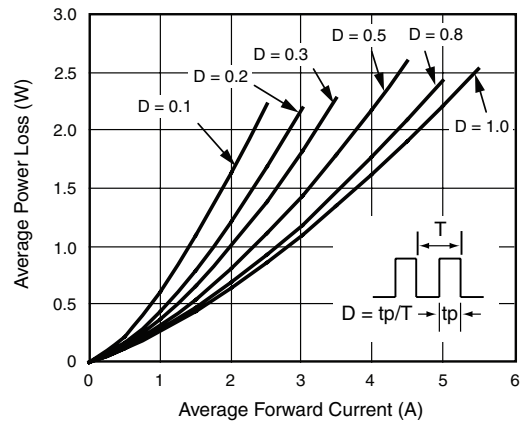


Figure 2. Forward Power Loss Characteristics

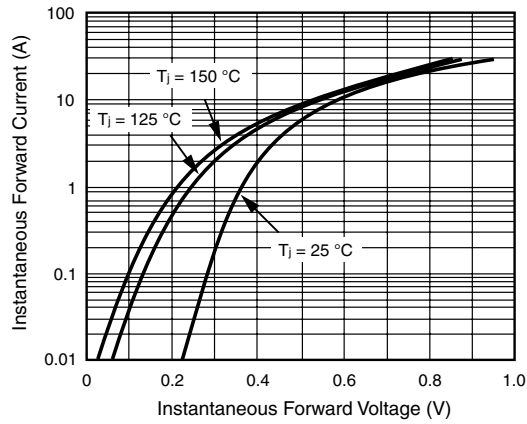


Figure 3. Typical Instantaneous Forward Characteristics

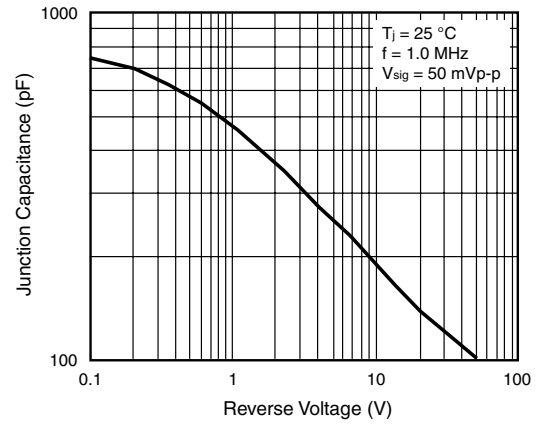


Figure 5. Typical Junction Capacitance

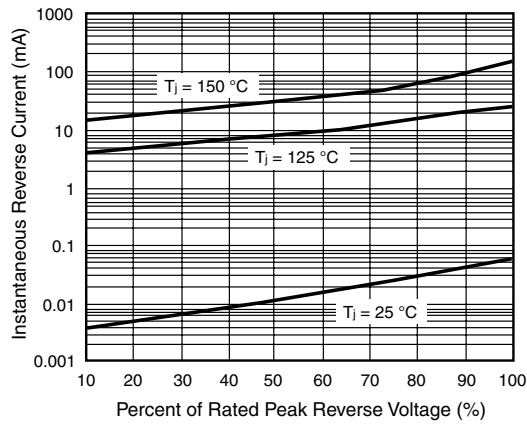


Figure 4. Typical Reverse Leakage Characteristics

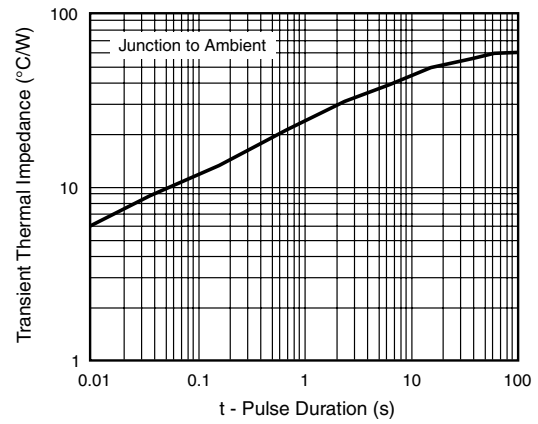


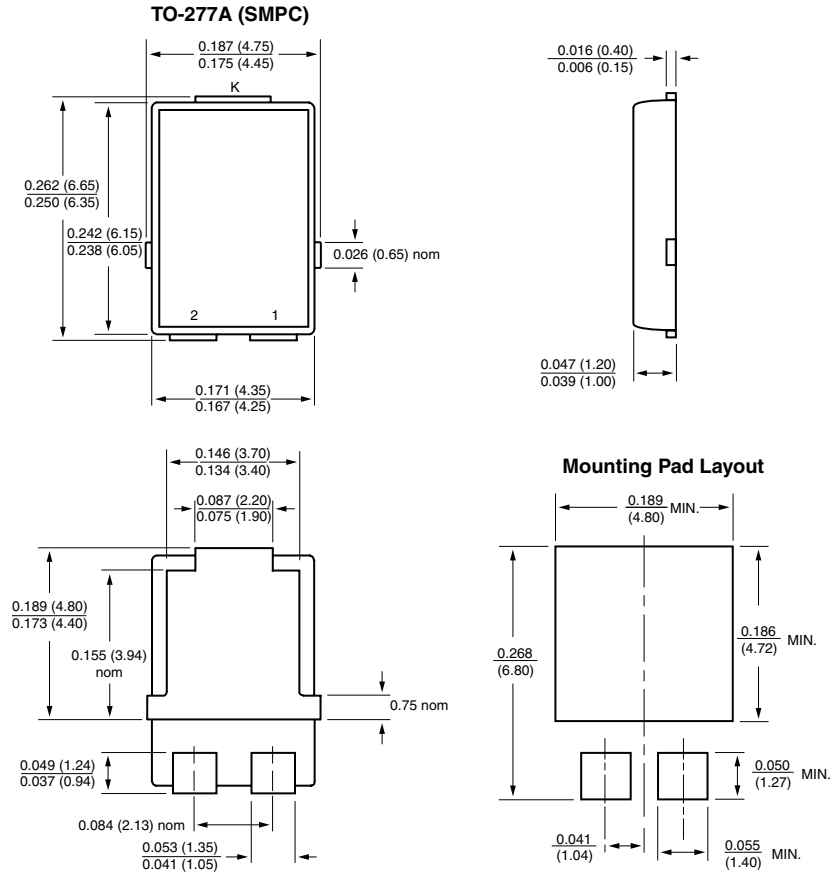
Figure 6. Typical Transient Thermal Impedance

SS5P3 & SS5P4

Vishay General Semiconductor



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Conform to JEDEC TO-277A



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