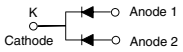
High Current Density Surface Mount Dual Common-Cathode Schottky Rectifier

eSMP™ Series

TO-277A (SMPC)



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 3.0 A
V_{RRM}	40 V
I_{FSM}	70 A
E_{AS}	20 mJ
V_F at I_F = 3.0 A	0.53 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.

FEATURES

AUTOMOTIVE GRADE Available

RoHS COMPLIANT

HALOGEN FREE

- 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
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- **Halogen-free according to IEC 61249-2-21 definition**

MECHANICAL DATA

Case: TO-277A (SMPC)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-M3 - halogen-free and RoHS compliant, commercial grade

Base P/NHM3 - halogen-free and RoHS compliant, automotive grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix meets JESD 201 class 2 whisker test

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

PARAMETER		SYMBOL	SS6P4C	UNIT
Device marking code			S64C	
Maximum repetitive peak reverse voltage		V_{RRM}	40	V
Maximum average forward rectified current (fig. 1)	total device per diode	$I_{F(AV)}$	6.0 3.0	A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load per diode		I_{FSM}	70	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

SS6P4C

Vishay General Semiconductor

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode (1)	I_F = 1.5 A I_F = 3.0 A	T_A = 25 °C	V_F	0.47 0.57	- 0.65	V
	I_F = 1.5 A I_F = 3.0 A	T_A = 125 °C		0.40 0.53	- 0.60	
Reverse current per diode (2)	Rated V_R	T_A = 25 °C T_A = 125 °C	I_R	17 6	200 20	µA mA
Typical junction capacitance per diode	4.0 V, 1 MHz		C_J	100	-	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	SS6P4C	UNIT
Typical thermal resistance per diode	$R_{\theta JA}$ (1) $R_{\theta JL}$	80 4	°C/W

Note

(1) Units mounted on recommended P.C.B. 1 oz. pad layout, free air

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS6P4C-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel
SS6P4C-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel
SS6P4CHM3/86A (1)	0.10	86A	1500	7" diameter plastic tape and reel
SS6P4CHM3/87A (1)	0.10	87A	6500	13" diameter plastic tape and reel

Note

(1) Automotive grade

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

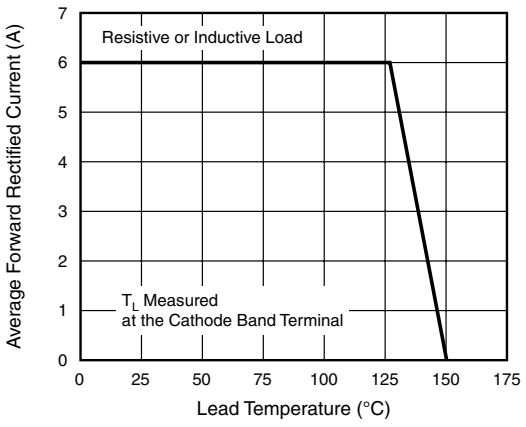


Figure 1. Maximum Forward Current Derating Curve

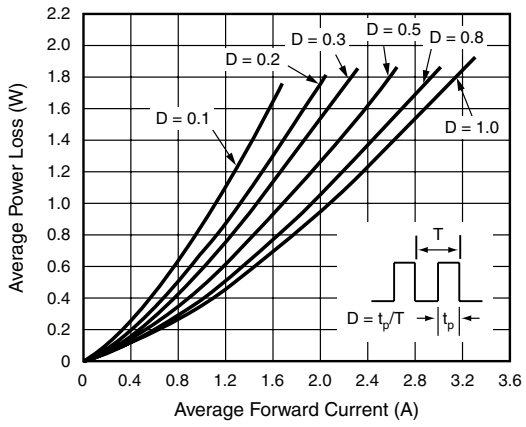


Figure 2. Forward Power Loss Characteristics Per Diode

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

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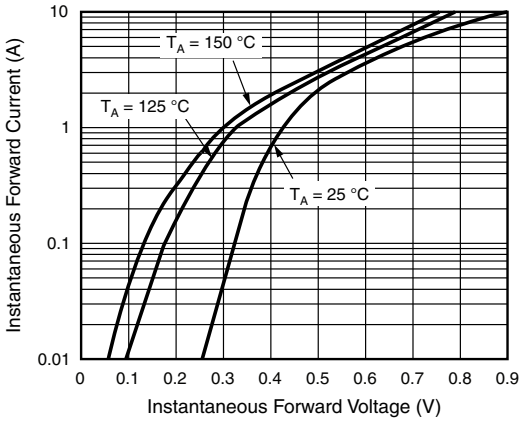


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

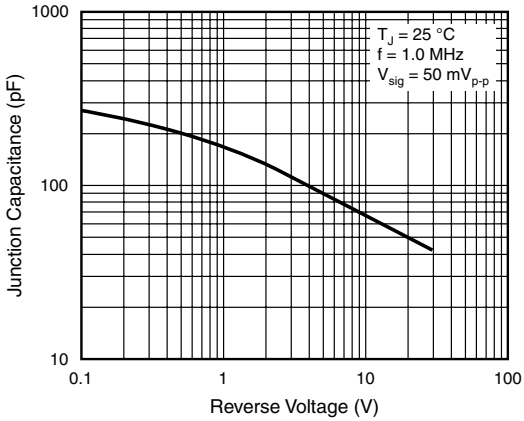


Figure 5. Typical Junction Capacitance Per Diode

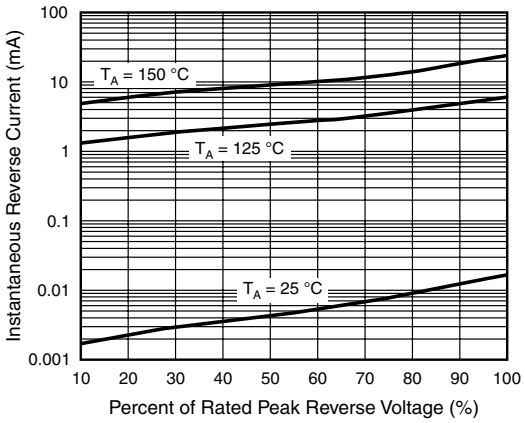
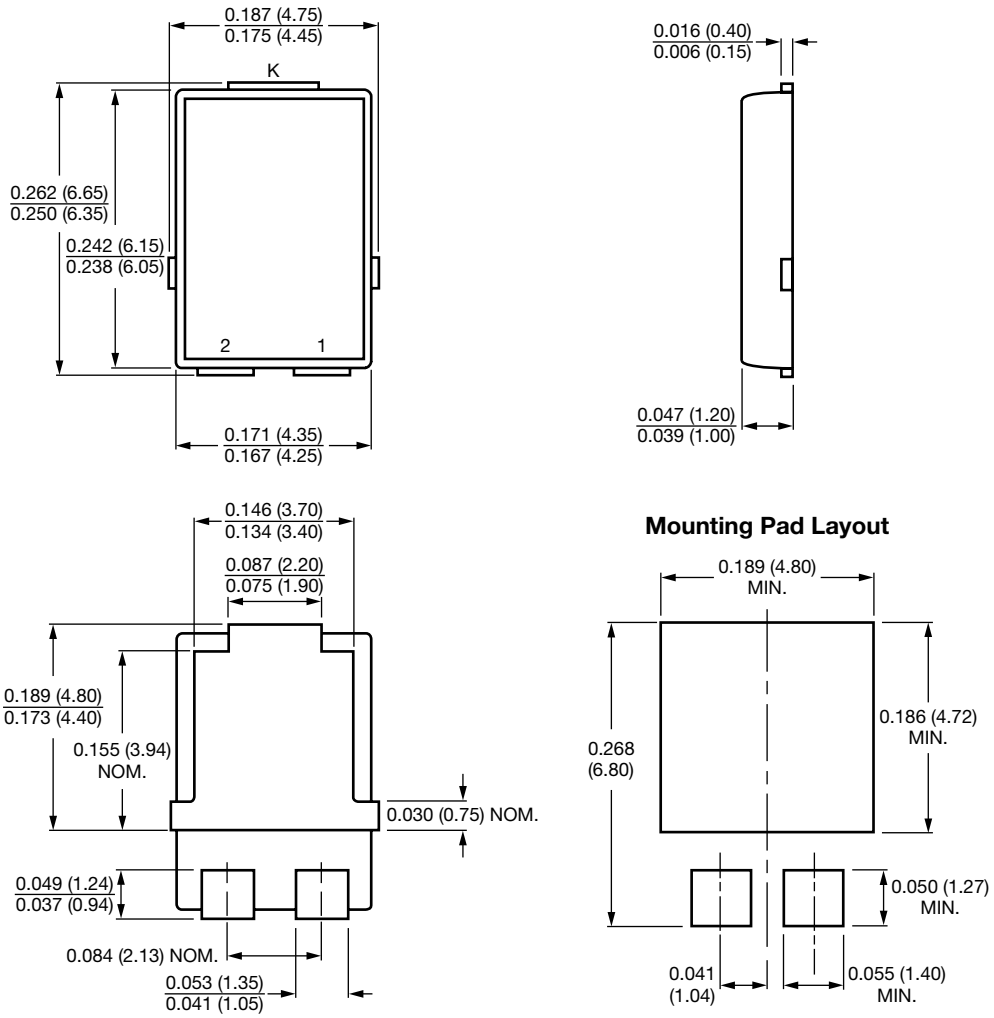


Figure 4. Typical Reverse Leakage Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-277A (SMPC)



Mounting Pad Layout

Conform to JEDEC TO-277A

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