

High Current Density Surface-Mount Dual Common Cathode Schottky Rectifier

eSMP® Series



SMPC (TO-277A)



LINKS TO ADDITIONAL RESOURCES


[3D Models](#)

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 $I_F = 3$ A	0.53 V
T_J max.	150 °C
Package	SMPC (TO-277A)
Circuit configuration	Common cathode

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
- 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

TYPICAL APPLICATIONS

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

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	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	$I_{F(AV)}$	A
		3.0	
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	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



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode	$I_F = 1.5\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	$V_F^{(1)}$	0.47	-	V
	$I_F = 3.0\text{ A}$			0.57	0.65	
	$I_F = 1.5\text{ A}$	$T_A = 125\text{ }^\circ\text{C}$		0.40	-	
	$I_F = 3.0\text{ A}$			0.53	0.60	
Reverse current per diode	Rated V_R	$T_A = 25\text{ }^\circ\text{C}$	$I_R^{(2)}$	17	200	μA
		$T_A = 125\text{ }^\circ\text{C}$		6	20	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 $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)			
PARAMETER	SYMBOL	SS6P4C	UNIT
Typical thermal resistance per diode	$R_{\theta JA}^{(1)}$	80	$^\circ\text{C/W}$
	$R_{\theta JL}$	4	

Note

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	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_A/H ⁽¹⁾	0.10	H	1500	7" diameter plastic tape and reel
SS6P4CHM3_A/I ⁽¹⁾	0.10	I	6500	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

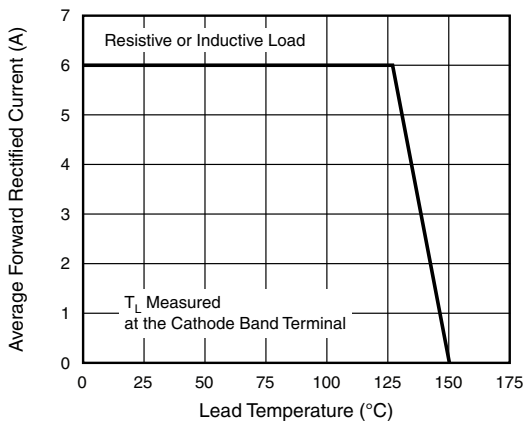


Fig. 1 - Maximum Forward Current Derating Curve

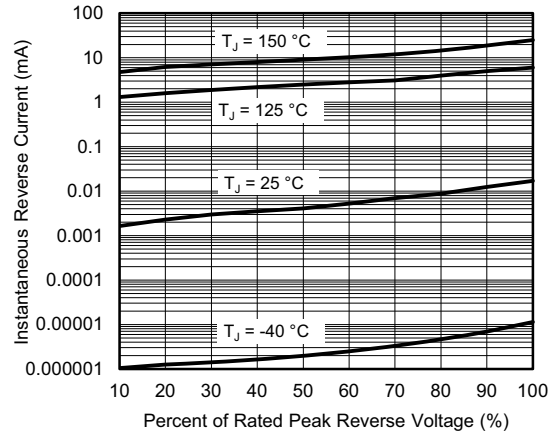


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

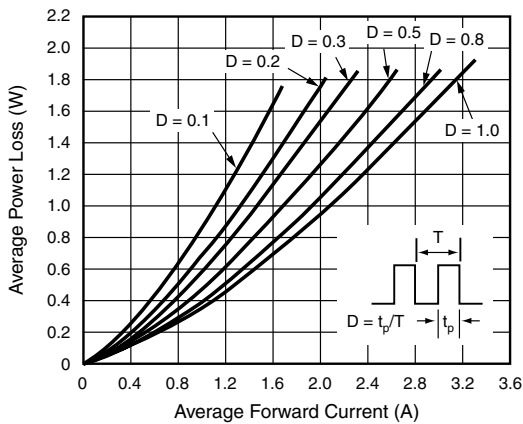


Fig. 2 - Forward Power Loss Characteristics Per Diode

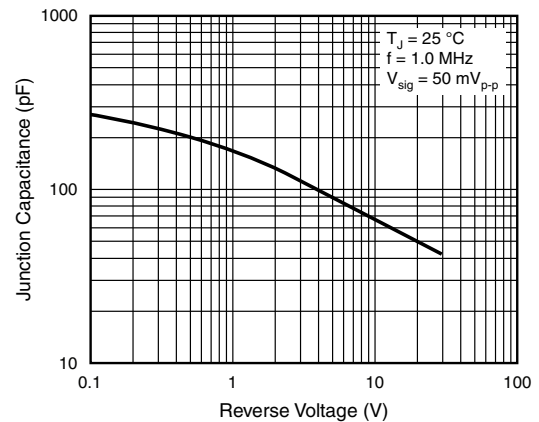


Fig. 5 - Typical Junction Capacitance Per Diode

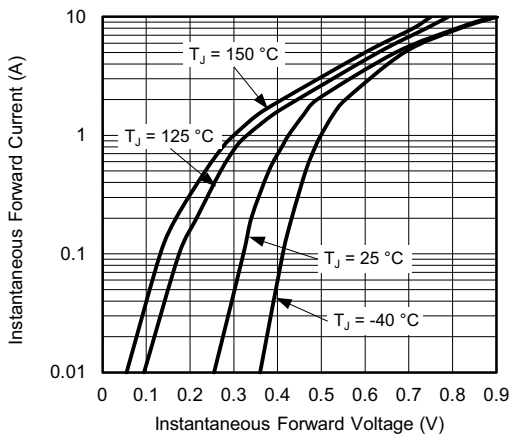
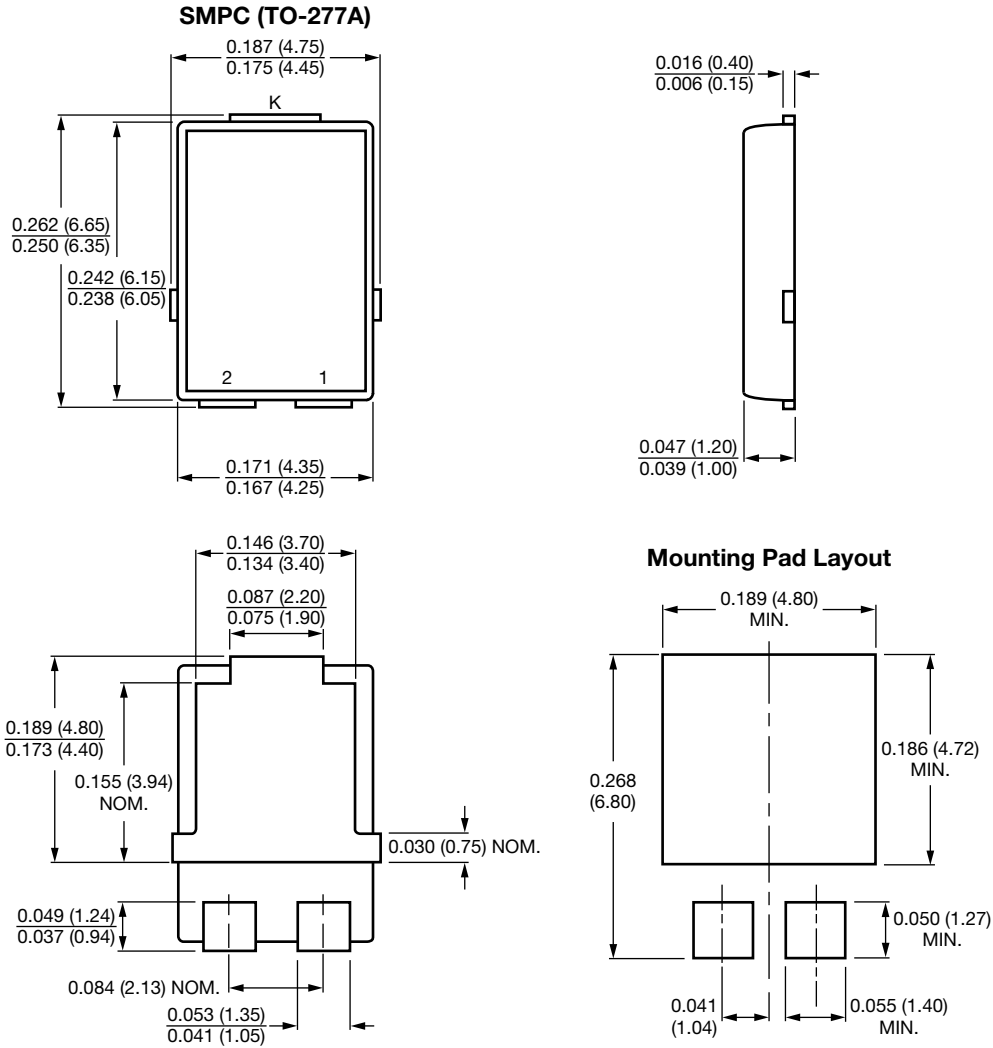


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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