

AUTOMOTIVE

Available

RoHS COMPLIANT

HALOGEN

FREE



Vishay General Semiconductor

High Current Density Surface Mount Dual Common-Cathode Schottky Rectifier



TO-277A (SMPC)

PRIMARY CHARACTERISTICS					
I _{F(AV)}	2 x 4.0 A				
V _{RRM}	30 V, 40 V				
I _{FSM}	120 A				
E _{AS}	20 mJ				
V _F at I _F = 4 A	0.42 V				
T _J max.	150 °C				

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters and polarity protection application.

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
- 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, RoHS compliant, and commercial grade

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

Terminals: Matte tin plated leads, solderable 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	SS8P3C	SS8P4C	UNIT	
Device marking code			S83C	S84C		
Maximum repetitive peak reverse voltage		V_{RRM}	30	40	V	
Maximum average forward rectified current (fig. 1)	total device	_	8.0		Α	
	per diode	I _{F(AV)}	4.0			
Peak forward surge current 10 ms single half sine-wave superimposed on rated load		I _{FSM}	120		Α	
Non-repetitive avalanche energy at 25 °C, I _{AS} = 2 A per diode		E _{AS}	20			
Operating junction and storage temperature range		T _J , T _{STG}	- 55 to + 150		°C	

SS8P3C, SS8P4C

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	I _F = 2.0 A	T _A = 25 °C	V _F ⁽¹⁾	0.42	-	. V	
	I _F = 4.0 A			0.48	0.58		
	I _F = 2.0 A	T _A = 125 °C		0.32	-		
	I _F = 4.0 A			0.42	0.48		
Reverse current per diode	Rated V _R	T _A = 25 °C	I _R ⁽²⁾	130	300	μΑ	
		T _A = 125 °C		26	35	mA	
Typical junction capacitance per diode	4.0 V, 1 MHz		CJ	230	-	pF	

 $^{(1)}$ Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width \leq 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise specified)							
PARAMETER	SYMBOL	SS8P3C	SS8P4C	UNIT			
Typical thormal resistance per diade	R ₀ JA ⁽¹⁾	60		°C/W			
Typical thermal resistance per diode	$R_{ hetaJL}$	3					

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		
SS8P4C-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel		
SS8P4C-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel		
SS8P4CHM3/86A ⁽¹⁾	0.10	86A	1500	7" diameter plastic tape and reel		
SS8P4CHM3/87A (1)	0.10	87A	6500	13" diameter plastic tape and reel		

Note

(1) Automotive grade



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RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

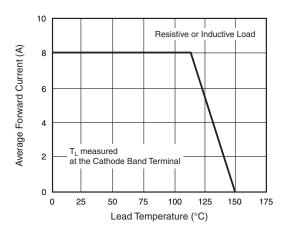


Fig. 1 - Maximum Forward Current Derating Curve

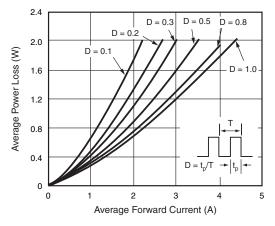


Fig. 2 - Forward Power Loss Characteristics Per Diode

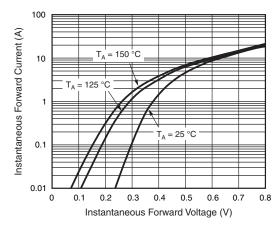


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

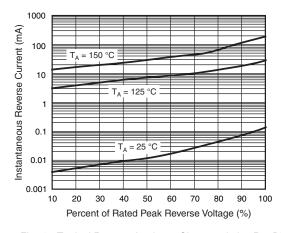


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

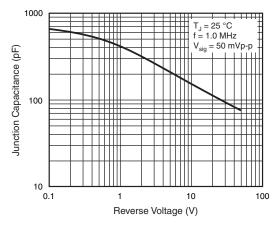


Fig. 5 - Typical Junction Capacitance Per Diode

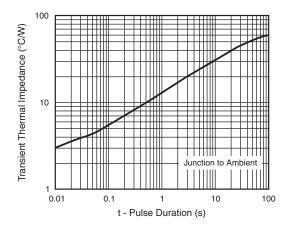


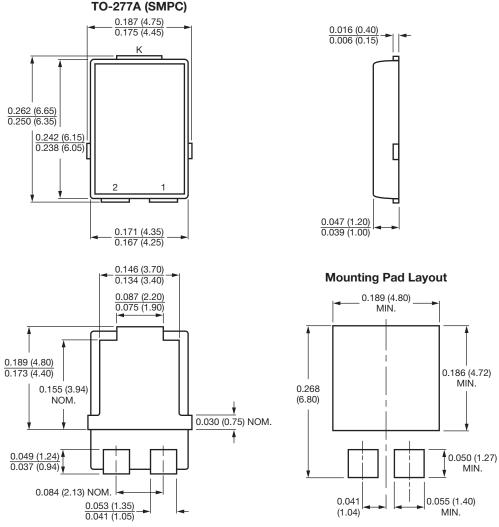
Fig. 6 - Typical Transient Thermal Impedance Per Diode

SS8P3C, SS8P4C

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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- Консультации по применению компонента;
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- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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