AUTOMOTIV

COMPLIANT

HALOGEN FREE



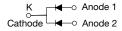
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Vishay General Semiconductor

High Current Density Surface-Mount Schottky Barrier Rectifiers



SMPC (TO-277A)



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS					
I _{F(AV)}	2 x 5.0 A				
V_{RRM}	30 V, 40 V				
I _{FSM}	200 A				
E _{AS}	20 mJ				
V _F at I _F = 5 A	0.37 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.vishav.com/doc?99912

TYPICAL APPLICATIONS

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

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	SS10P3C	SS10P4C	UNIT
Device marking code			S103C	S104C	
Maximum repetitive peak reverse voltage		V_{RRM}	30	40	V
Maximum average forward rectified current (fig. 1)	total device		10		Α
	per diode	I _{F(AV)}	5.0		
Peak forward surge current 10 ms single half sine-wave superimposed on rated load		I _{FSM}	200		Α
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



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CO	TEST CONDITIONS		TYP.	MAX.	UNIT
Instantaneous forward voltage per diode	I _F = 2.5 A	$I_F = 2.5 \text{ A}$ $I_F = 5.0 \text{ A}$ $T_A = 25 \text{ °C}$	V _F ⁽¹⁾	0.40	-	V
	I _F = 5.0 A			0.45	0.53	
	I _F = 2.5 A	T _A = 125 °C		0.29	-	
	I _F = 5.0 A			0.37	0.44	
Reverse current per diode	Rated V _R	T _A = 25 °C	I _R ⁽²⁾	56	550	μΑ
	nated V _R	T _A = 125 °C		28	45	mA
Typical junction capacitance per diode	4.0 V, 1 MHz		CJ	430	-	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 specified)						
PARAMETER	SYMBOL	SS10P3C	SS10P3C SS10P4C			
Typical thermal resistance per diode	R _{θJA} ⁽¹⁾	60		°C/W		
Typical thermal resistance per diode	$R_{ heta JL}$	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			
SS10P4C-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel			
SS10P4C-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel			
SS10P4CHM3_A/H (1)	0.10	Н	1500	7" diameter plastic tape and reel			
SS10P4CHM3_A/I (1)	0.10	I	6500	13" diameter plastic tape and reel			

Note

(1) AEC-Q101 qualified

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

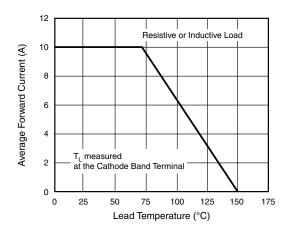


Fig. 1 - Maximum Forward Current Derating Curve

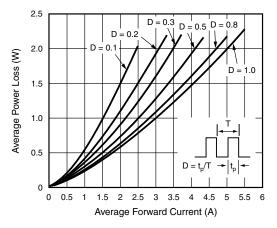


Fig. 2 - Forward Power Loss Characteristics Per Diode

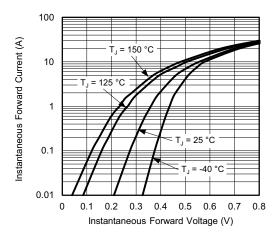


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

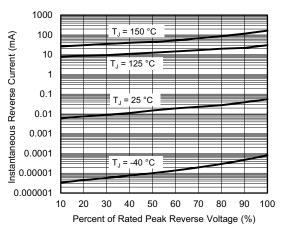


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

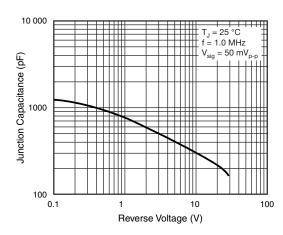


Fig. 5 - Typical Junction Capacitance Per Diode

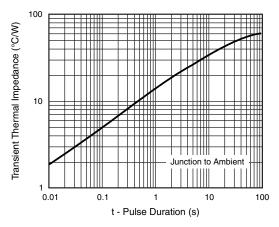
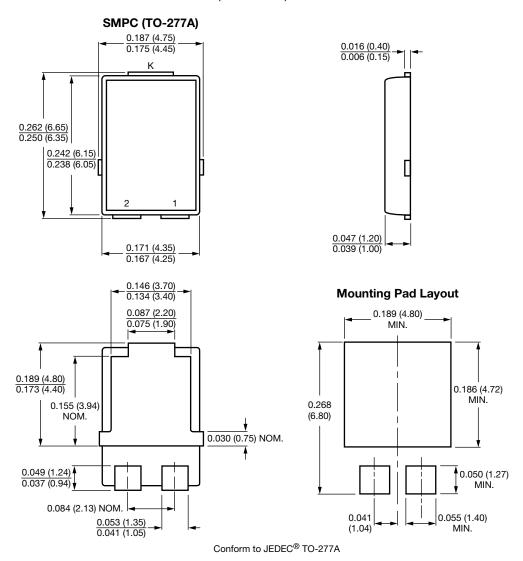


Fig. 6 - Typical Transient Thermal Impedance Per Diode



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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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