COMPLIANT

HALOGEN FREE

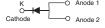


Vishay General Semiconductor

High Current Density Surface Mount High Voltage Schottky Rectifiers



TO-277A (SMPC)



PRIMARY CHARACTERISTICS				
I _{F(AV)}	10 A			
V _{RRM}	90 V, 100 V			
I _{FSM}	200 A			
E _{AS}	20 mJ			
V _F at I _F = 10 A	0.661 V			
I _R	0.3 μΑ			
T _J max.	175 °C			
Package	TO-277A (SMPC)			
Diode variations	Single die			

FEATURES

- Power pack
- Very low profile typical height of 1.1 mm
- · Ideal for automated placement
- · Guardring for overvoltage protection
- High barrier technology, T_{.I} = 175 °C maximum
- · Low leakage current
- 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 <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

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

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 AEC-Q101 qualified

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	SS10PH9	SS10PH10	UNIT	
Device marking code		10H9	10H10		
Maximum repetitive peak reverse voltage	V _{RRM}	90	100	V	
Maximum average forward rectified current (fig. 1)	I _{F(AV)}	10		А	
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	200		А	
Non-repetitive avalanche energy at $I_{AS} = 2.0 \text{ A}$, $T_{J} = 25 ^{\circ}\text{C}$	E _{AS}	20		mJ	
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +175		°C	



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage	I _F = 5 A	T _A = 25 °C	V _F ⁽¹⁾	0.725	-	V	
	I _F = 10 A			0.800	0.88		
	I _F = 5 A	T _A = 125 °C		0.581	-		
	I _F = 10 A			0.661	0.74		
Reverse current	Rated V _R	T _A = 25 °C	I _R ⁽²⁾	0.3	10	μΑ	
	nated v _R	T _A = 125 °C		0.3	3	mA	
Typical junction capacitance	4.0 V, 1 MHz	•	CJ	270	-	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	SS10PH9	SS10PH9 SS10PH10			
Typical thermal resistance	R ₀ JA (1)	60		°C/W		
Typical thermal resistance	$R_{ hetaJL}$	3				

Note

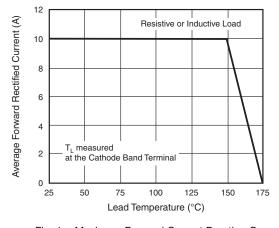
(1) Units mounted on recommended PCB 1 oz. pad layout

ORDERING INFORMATION (Example)							
PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
SS10PH10-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel			
SS10PH10-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel			
SS10PH10HM3/86A (1)	0.10	86A	1500	7" diameter plastic tape and reel			
SS10PH10HM3/87A (1)	0.10	87A	6500	13" diameter plastic tape and reel			
SS10PH10HM3_A/H (1)	0.10	Н	1500	7" diameter plastic tape and reel			
SS10PH10HM3_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 °C unless otherwise specified)





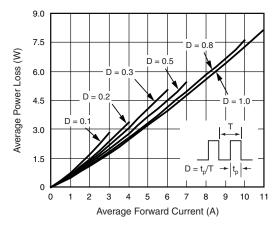


Fig. 2 - Forward Power Loss Characteristics



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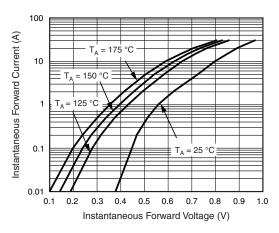


Fig. 3 - Typical Instantaneous Forward Characteristics

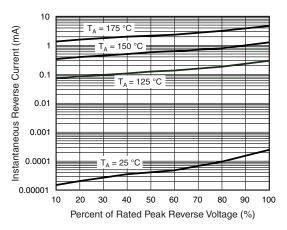


Fig. 4 - Typical Reverse Characteristics

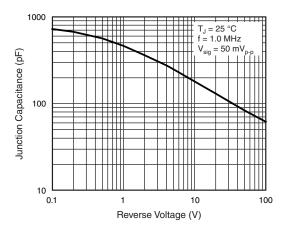


Fig. 5 - Typical Junction Capacitance

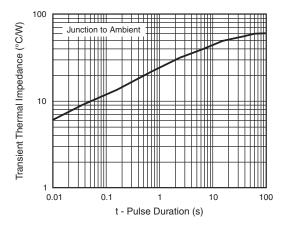
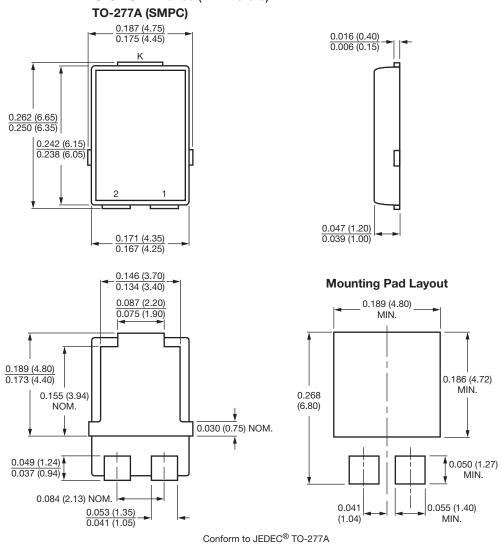


Fig. 6 - Typical Transient Thermal Impedance



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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



30mom to 02520 10 2777



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