COMPLIANT

HALOGEN FREE

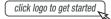


Vishay General Semiconductor

High Current Density Surface Mount Schottky Barrier Rectifiers



DESIGN SUPPORT TOOLS





PRIMARY CHARACTERISTICS					
I _{F(AV)}	3.0 A				
V_{RRM}	30 V, 40 V				
I _{FSM}	150 A				
E _{AS}	20 mJ				
V _F at I _F = 3.0 A	0.335 V				
T _J max.	150 °C				
Package	SMPC (TO-277A)				
Circuit configuration	Single				

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 available
 - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see <u>www.vishav.com/doc?99912</u>

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	SS3P3L	SS3P4L	UNIT
Device marking code		S33	S34	
Maximum repetitive peak reverse voltage	V _{RRM}	30	40	V
Maximum average forward rectified current (fig. 1)	I _{F(AV)}	3.0		А
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	150		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 +150		°C



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Maximum instantaneous forward voltage	I _F = 1.5 A	T _A = 25 °C	V _F ⁽¹⁾	0.384	-	V	
	$I_F = 3.0 \text{ A}$			0.427	0.47		
	I _F = 1.5 A	T _A = 125 °C		0.268	-		
	I _F = 3.0 A			0.335	0.38		
Maximum reverse current	Rated V _R	T _A = 25 °C	I _R ⁽²⁾	61.8	250	μA	
	nateu v _R	T _A = 125 °C		26.7	40	mA	
Typical junction capacitance	4.0 V, 1 MHz		CJ	280	-	μA	

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	SS3P3L SS3P4L UI			
Typical thermal resistance	R _{0JA} (1)	60		°C/W	
Typical trieffial resistance	$R_{ heta JL}$	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			
SS3P4L-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel			
SS3P4L-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel			
SS3P4LHM3_A/H (1)	0.10	Н	1500	7" diameter plastic tape and reel			
SS3P4LHM3_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 specified)

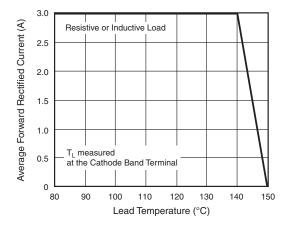


Fig. 1 - Forward Current Derating Curve

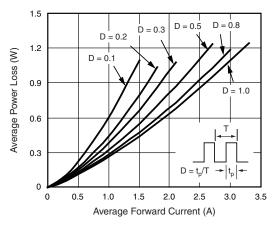


Fig. 2 - Forward Power Loss Characteristics

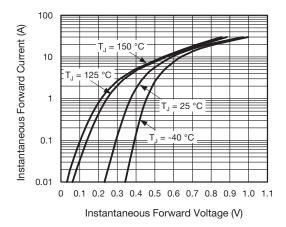


Fig. 3 - Typical Instantaneous Forward Characteristics

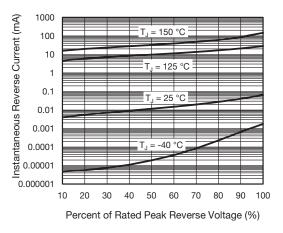


Fig. 4 - Typical Reverse Leakage Characteristics

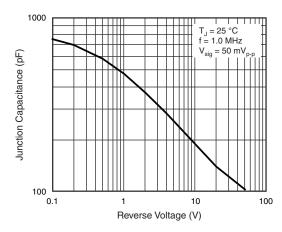


Fig. 5 - Typical Junction Capacitance

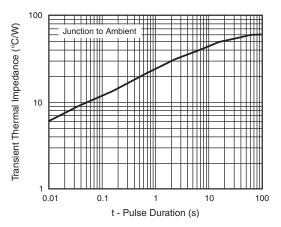
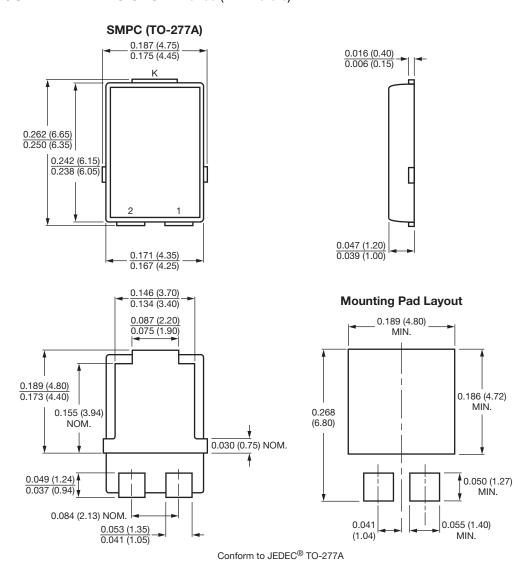


Fig. 6 - Typical Transient Thermal Impedance



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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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