COMPLIANT

HALOGEN FREE

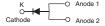


Vishay General Semiconductor

High Current Density Surface Mount Glass Passivated Rectifiers







PRIMARY CHARACTERISTICS						
I _{F(AV)} 4.0 A						
V _{RRM}	100 V to 1000 V					
I _{FSM}	100 A					
I _R	10 μA					
V _F at I _F = 4 A	0.860 V					
T _J max.	150 °C					

FEATURES

- Very low profile typical height of 1.1 mm
- · Ideal for automated placement
- · Glass passivated chip junction
- Low forward voltage drop
- · High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive, and telecommunication.

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 per

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	S4PB	S4PD	S4PG	S4PJ	S4PK	S4PM	UNIT
Device marking code		S4PB	S4PD	S4PG	S4PJ	S4PK	S4PM	
Maximum repetitive peak reverse voltage	V_{RRM}	100	200	400	600	800	1000	V
Average forward current	I _{F(AV)}	4.0 A					Α	
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	100 A					Α	
Operating junction and storage temperature range	T _J , T _{STG}	G - 55 to + 150 °C				°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 = 2.0 A	T _A = 25 °C	V _F ⁽¹⁾	0.897	-	V		
	$I_F = 4.0 \text{ A}$			0.958	1.10			
	I _F = 2.0 A	T _A = 125 °C		0.783	-			
	I _F = 4.0 A			0.860	0.95			
Reverse current Rated V _R	Pated V-	T _A = 25 °C	ı	10	μA			
	nated V _R	T _A = 125 °C	'R`'	55	100	μΑ		
Maximum reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A},$ $I_{rr} = 0.25 \text{ A}$		t _{rr}	2.5	-	μs		
Typical junction capacitance	4.0 V, 1 MHz		CJ	30	-	pF		

Notes

(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 S4PB S4PD S4PG S4PJ S4PK S4PM UNIT						
Typical thermal resistance	R _{0JA} (1)	60					°C/W
Typical trieffial resistance	$R_{\theta JL}$ 4					C/VV	

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				
S4PJ-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel				
S4PJ-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel				
S4PJHM3/86A (1)	0.10	86A	1500	7" diameter plastic tape and reel				
S4PJHM3/87A ⁽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)

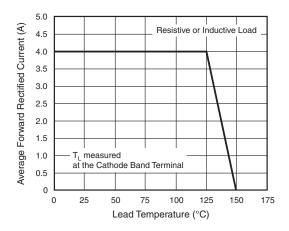


Fig. 1 - Maximum Forward Current Derating Curve

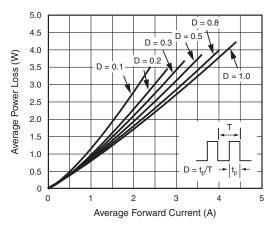


Fig. 2 - Forward Power Loss Characteristics

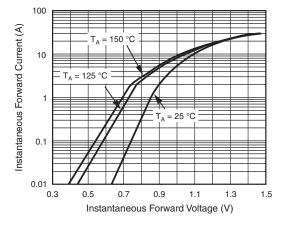


Fig. 3 - Typical Instantaneous Forward Characteristics

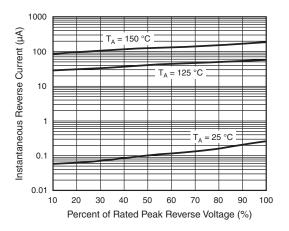


Fig. 4 - Typical Reverse Leakage Characteristics

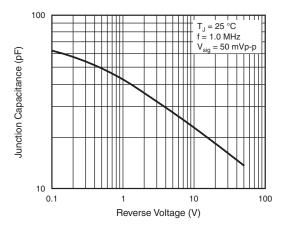


Fig. 5 - Typical Junction Capacitance

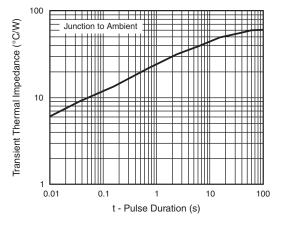
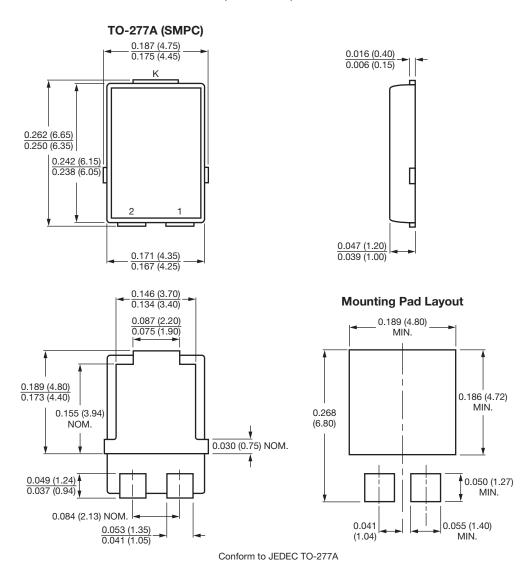


Fig. 6 - Typical Transient Thermal Impedance



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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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