

AUTOMOTIVE

Available

COMPLIANT

HALOGEN

FREE



Vishay General Semiconductor

Low V_F High Current Density Surface Mount **Schottky Barrier Rectifiers**



DO-220AA (SMP)

PRIMARY CHARACTERISTICS					
I _{F(AV)}	2.0 A				
V _{RRM}	20 V, 30 V				
I _{FSM}	50 A				
E _{AS}	11.25 mJ				
V _F	0.45 V				
T _J max.	150 °C				

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheelling, DC/DC converters, and polarity protection applications.

FEATURES

- Very low profile typical height of 1.0 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: DO-220AA (SMP)

Molding compound meets UL 94 V-0 flammability rating P/N-M3 - halogen-free, RoHS compliant, andcommercial grade

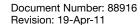
Base P/NHM3 - halogen-free, RoHS compliant, and automotive grade

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

Polarity: Color band denotes the cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	SS2P2L	SS2P3L	UNIT	
Device marking code	22L 23L				
Maximum repetive peak reverse voltage	V_{RRM}	20	30	V	
Maximum average forward rectified current (fig. 1)	I _{F(AV)}	2.0		Α	
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	50		Α	
Non-repetitive avalanche energy at I_{AS} = 1.5 A, L = 10 mH, T_{J} = 25 °C	E _{AS}	11.25 m.		mJ	
Voltage rate of change (rated V _R)	dV/dt	10 000		V/µs	
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to + 150 °C			



SS2P2L, SS2P3L

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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 = 2 A	T _J = 25 °C	V _F ⁽¹⁾	0.45	0.50	V
	I _F = 2 A	T _J = 125 °C		0.38	0.45	
Maximum reverse current at rated V _R		T _J = 25 °C	I _R ⁽²⁾	-	200	μΑ
		T _J = 125 °C		9.0	20	mA
Typical junction capacitance	4.0 V, 1 MHz		CJ	130		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 noted)					
PARAMETER	SYMBOL	SS2P2L	SS2P3L	UNIT	
	R _{0JA} (1)	115		°C/W	
Typical thermal resistance	R _{0JL} (1)	15			
	R ₀ JC (1)	20			

Note

 $^{(1)}$ Thermal resistance from junction to ambient and junction to lead mounted on P.C.B. with 5.0 mm x 5.0 mm copper pad areas. $R_{\theta JL}$ is measured at the terminal of cathode band. $R_{\theta JC}$ is measured at the top center of the body

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SS2P3L-M3/84A	0.024	84A	3000	7" diameter plastic tape and reel		
SS2P3L-M3/85A	0.024	85A	10 000	13" diameter plastic tape and reel		
SS2P3LHM3/84A ⁽¹⁾	0.024	84A	3000	7" diameter plastic tape and reel		
SS2P3LHM3/85A ⁽¹⁾	0.024	85A	10 000	13" diameter plastic tape and reel		

Note

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

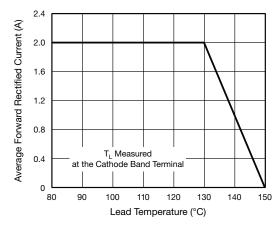


Fig. 1 - Forward Current Derating Curve

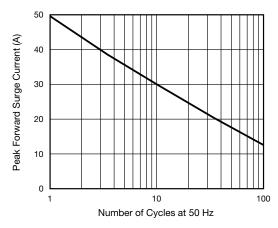


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

⁽¹⁾ Automotive grade



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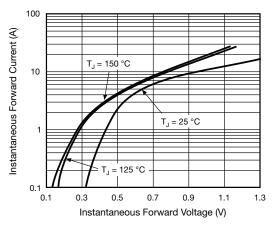


Fig. 3 - Typical Instantaneous Forward Characteristics

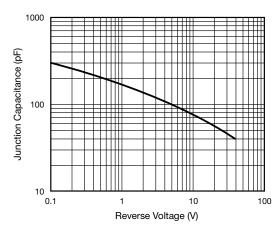


Fig. 5 - Typical Junction Capacitance

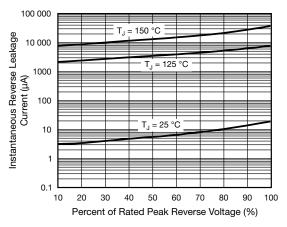


Fig. 4 - Typical Reverse Leakage Characteristics

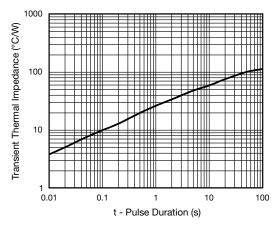
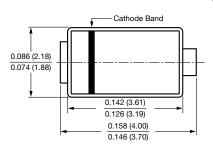
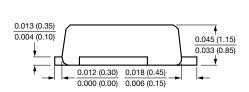
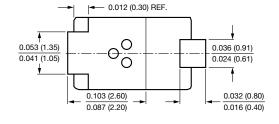


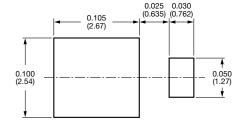
Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-220AA (SMP)











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