AUTOMOTIVE

Available

COMPLIANT

HALOGEN

FREE



Vishay General Semiconductor

High Current Density Surface Mount Schottky Barrier Rectifiers



DO-220AA (SMP)

PRIMARY CHARACTERISTICS				
I _{F(AV)}	2.0 A			
V _{RRM}	50 V, 60 V			
I _{FSM}	50 A			
E _{AS}	11.25 mJ			
V _F	0.54 V			
T _J max.	150 °C			

TYPICAL APPLICATIONS

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

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
- 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 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 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	SS2P5 SS2P6		UNIT		
Device marking code		25	26			
Maximum repetitive peak reverse voltage	50	60	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}	5	А			
Non-repetitive avalanche energy at $I_{AS}=1.5$ A, $L=10$ mH, $T_{J}=25^{\circ}C$	E _{AS}	11.25		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				

SS2P5, SS2P6

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Maximum instantaneous femuland valters	I _F = 2 A	T _J = 25 °C	V _F ⁽¹⁾	0.62	0.70	V	
Maximum instantaneous forward voltage	I _F = 2 A	T _J = 125 °C		0.54	0.60		
Maximum reverse current at rated V _R		T _J = 25 °C	I _R ⁽²⁾	-	100	μΑ	
iviaximum reverse current at rated v _R		T _J = 125 °C		1.6	10	mA	
Typical junction capacitance	4.0 V, 1 MHz		CJ	80		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	SS2P5	SS2P6	UNIT		
	R ₀ JA ⁽¹⁾	115		°C/W		
Typical thermal resistance	R ₀ JL (1)	15				
	R ₀ JC ⁽¹⁾	20				

Note

(1) Thermal resistance from junction to ambient and junction to lead mounted on PCB 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	
Preferred P/N	Unit Weight (g)	Preferred Package Code	Base Quantity	Delivery Mode	
SS2P5-M3/84A	0.024	84A	3000	7" diameter plastic tape and reel	
SS2P5-M3/85A	0.024	85A	10 000	13" diameter plastic tape and reel	
SS2P5HM3/84A ⁽¹⁾	0.024	84A	3000	7" diameter plastic tape and reel	
SS2P5HM3/85A ⁽¹⁾	0.024	85A	10 000	13" diameter plastic tape and reel	

Note

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

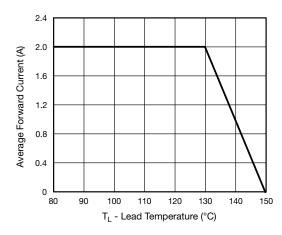


Fig. 1 - Forward Current Derating Curve

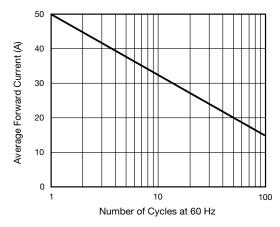


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

⁽¹⁾ Automotive grade



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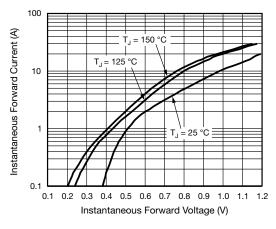


Fig. 3 - Typical Instantaneous Forward Characteristics

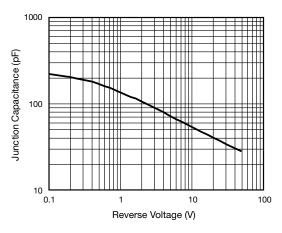


Fig. 5 - Typical Junction Capacitance

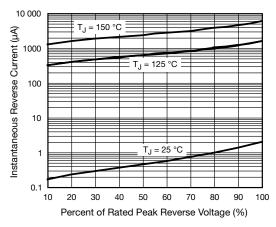


Fig. 4 - Typical Reverse Leakage Characteristics

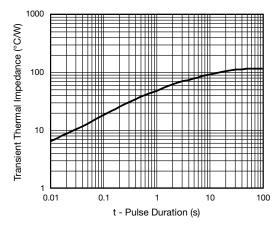
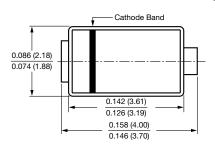
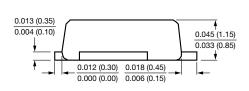
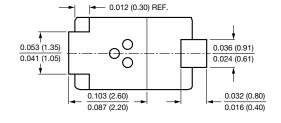


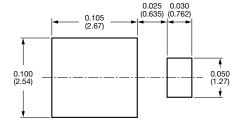
Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS IN INCHES (millimeters) DO-220AA (SMP)













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