



Vishay General Semiconductor

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



DO-220AA (SMP)

MAJOR RATINGS AND CHARACTERISTICS			
I _{F(AV)}	2 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		

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-020C, LF max peak of 260 °C
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheelling, dc-to-dc converters, and polarity protection applications.

MECHANICAL DATA

Case: DO-220AA (SMP)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high

reliability grade (AEC Q101 qualified)

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 (see Fig. 1)	I _{F(AV)}	2.0		А
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	50		А
Non-repetitive avalanche energy at $I_{AS} = 1.5 \text{ A}$, $L = 10 \text{ mH}$, $T_j = 25 ^{\circ}\text{C}$	E _{AS}	11.25		mJ
Voltage rate of change (rated V _R)	dv/dt	10000		V/us
Operating junction and storage temperature range	T _{J,} T _{STG}	- 55 to + 150 °C		°C

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX.	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	at $I_F = 2 \text{ A}$, $T_j = 25 ^{\circ}\text{C}$ at $I_F = 2 ^{\circ}\text{A}$, $T_j = 125 ^{\circ}\text{C}$	V _F	0.45 0.38	0.50 0.45	V
Maximum reverse current at rated $V_R^{(1)}$	T _j = 25 °C T _j = 125 °C	I _R	9.0	200 20	μA mA
Typical junction capacitance	at 4.0 V, 1 MHz	CJ	13	30	pF

(1) Pulse test: 300 μ s pulse width, 1 % duty cycle

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THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SS2P2L SS2P3L		UNIT
Typical thermal resistance ⁽¹⁾	$egin{array}{c} {\sf R}_{ heta {\sf JA}} \ {\sf R}_{ heta {\sf JL}} \ {\sf R}_{ heta {\sf JC}} \end{array}$	1	15 5 0	°C/W

Note:

(1) Thermal resistance from junction to ambient and junction to lead mounted on P.C.B. with 5.0 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 centre of the body

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
SS2P3L-E3/84A	0.024	84A	3000	7" Diameter Plastic Tape & Reel	
SS2P3L-E3/85A	0.024	85A	10000	13" Diameter Plastic Tape & Reel	

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

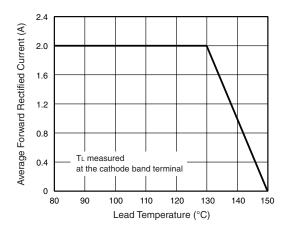


Figure 1. Forward Current Derating Curve

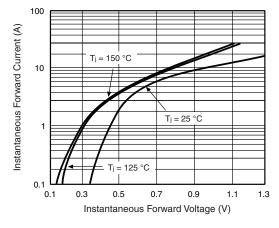


Figure 3. Typical Instantaneous Forward Characteristics

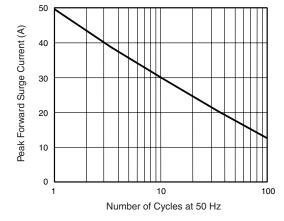


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

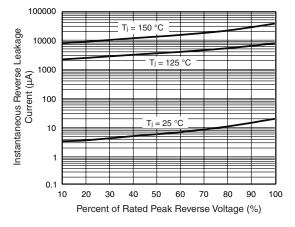


Figure 4. Typical Reverse Leakage Characteristics





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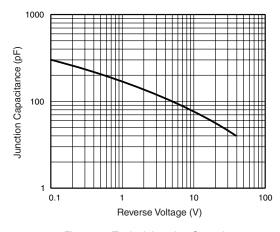


Figure 5. Typical Junction Capacitance

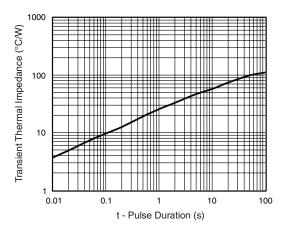
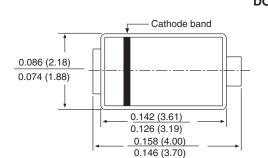
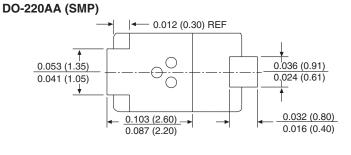
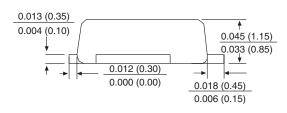


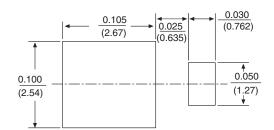
Figure 6. Typical Transient Thermal impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)









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