SS22S, SS23S, SS24S

Vishay General Semiconductor

Surface Mount Schottky Barrier Rectifier

DO-214AC (SMA)

FEATURES

- Low profile package
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- **Halogen-free according to IEC 61249-2-21 definition**

RoHS COMPLIANT
HALOGEN FREE

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-214AC (SMA)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS compliant, and commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
M3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	20 V, 30 V, 40 V
I_{FSM}	40 A
V_F at I_F = 2.0 A	0.517 V
T_J max.	150 °C

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SS22S	SS23S	SS24S	UNIT
Device marking code		22S	23S	24S	
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	2.0			A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	40			A
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

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

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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 = 1 A	T_J = 25 °C	V_F (1)	0.436	-	V
	I_F = 2 A			0.517	0.55	
Reverse current	Rated V_R	T_J = 25 °C	I_R (2)	13	200	µA
		T_J = 100 °C		1.65	8	mA
Typical junction capacitance	4.0 V, 1 MHz		C_J	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	SS22S	SS23S	SS24S	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)	75			°C/W
	$R_{\theta JL}$ (1)	25			

Note

(1) PCB mounted with 0.4" x 0.4" (10 mm x 10 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS24S-M3/61T	0.064	61T	1800	7" diameter plastic tape and reel
SS24S-M3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

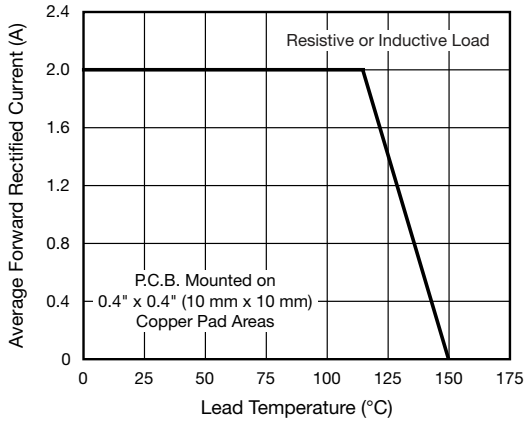

Fig. 1 - Forward Current Derating Curve

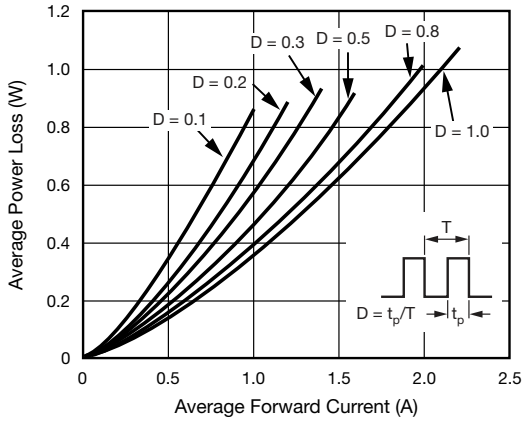

Fig. 2 - Forward Power Loss Characteristics

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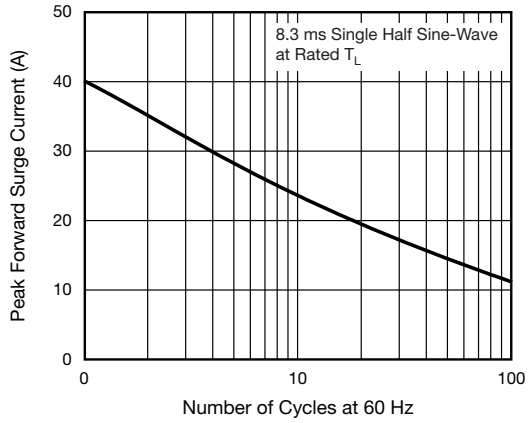


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

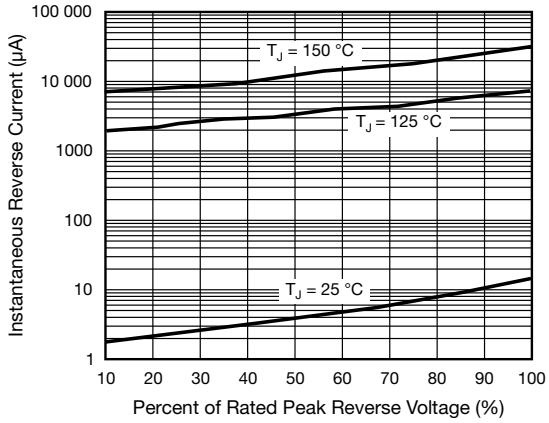


Fig. 5 - Typical Reverse Leakage Characteristics

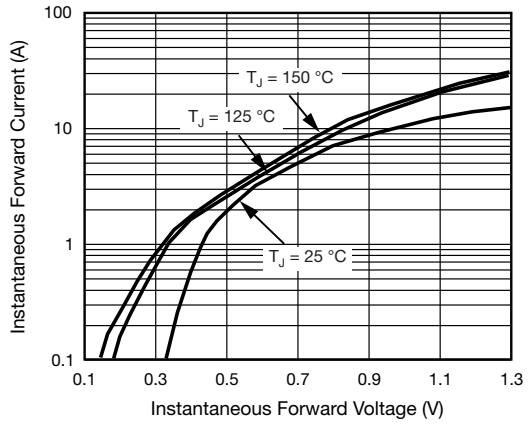


Fig. 4 - Typical Instantaneous Forward Characteristics

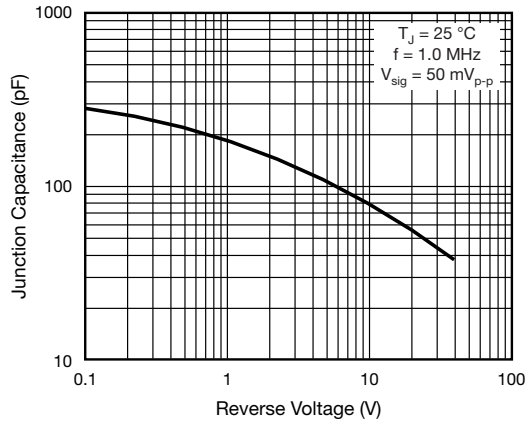
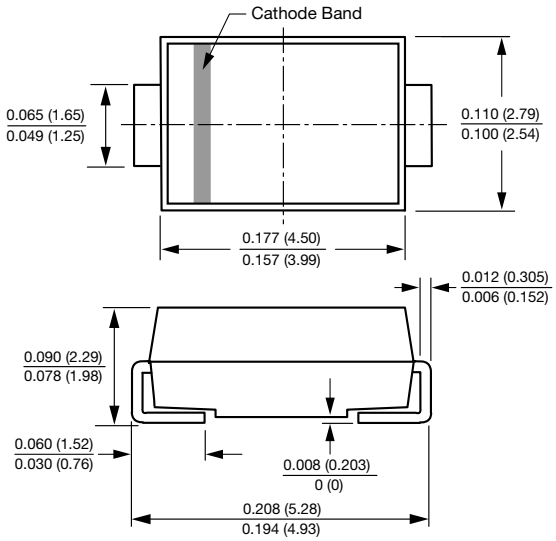


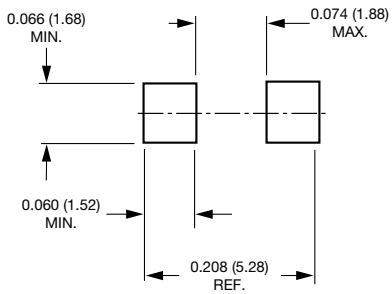
Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout



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