SS12, SS13, SS14, SS15, SS16

Vishay General Semiconductor

### Surface Mount Schottky Barrier Rectifier



www.vishay.com

DO-214AC (SMA)

PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	1.0 A					
V <sub>RRM</sub>	20 V, 30 V, 40 V, 50 V, 60 V					
I <sub>FSM</sub>	40 A					
V <sub>F</sub>	0.50 V, 0.75 V					
T <sub>J</sub> max.	125 °C, 150 °C					
Package	DO-214AC					
Diode variations	Single					

#### **FEATURES**

- Low profile package
- · Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- · High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 gualified
- · Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

#### **TYPICAL APPLICATIONS**

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

#### **MECHANICAL DATA**

Case: DO-214AC (SMA)

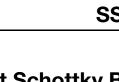
Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade Base P/NHE3\_X - RoHS-compliant and AEC-Q101 qualified ("\_X" denotes revision code e.g. A, B, ....)

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 2 whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	SS12	SS13	SS14	SS15	SS16	UNIT	
Device marking code		S2	S3	S4	S5	S6	V	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	20	30	40	50	60	V	
Maximum RMS voltage	V <sub>RMS</sub>	14	21	28	35	42	V	
Maximum DC blocking voltage	V <sub>DC</sub>	20	30	40	50	60	V	
Maximum average forward rectified current at T <sub>L</sub> (fig. 1)	I <sub>F(AV)</sub>	1.0				А		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	40				А		
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000				V/µs		
Operating junction temperature range	TJ	-65 to +125 -65 to +150			°C			
Storage temperature range	T <sub>STG</sub>	-65 to +150				°C		





COMPLIANT



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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	SS12	SS13	SS14	SS15	SS16	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	1.0 A	$V_{F}$	0.50		0.75		V	
Maximum DC reverse current at	T <sub>A</sub> = 25 °C	0.2			mA			
rated DC blocking voltage <sup>(1)</sup>	T <sub>A</sub> = 100 °C	IR	6.0		5.	.0	ШA	

Note

<sup>(1)</sup> Pulse test: 300 µs pulse width, 1 % duty cycle

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	SYMBOL	SS12	SS13	SS14	SS15	SS16	UNIT
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	88					°C/W
Typical thermal resistance (*)	$R_{\theta JL}$	28					0/10

Note

 $^{(1)}\,$  PCB mounted with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
SS14-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel				
SS14-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel				
SS14HE3_A/H (1)	0.064	н	1800	7" diameter plastic tape and reel				
SS14HE3_A/I (1)	0.064		7500	13" diameter plastic tape and reel				

Note

<sup>(1)</sup> AEC-Q101 qualified

### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

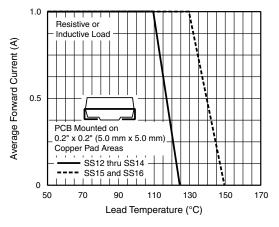


Fig. 1 - Forward Current Derating Curve

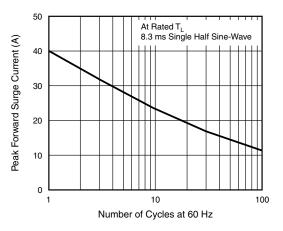


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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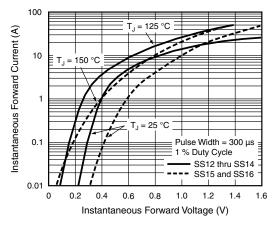


Fig. 3 - Typical Instantaneous Forward Characteristics

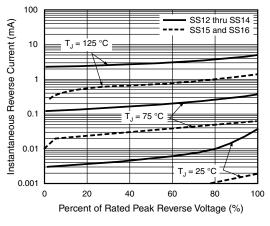
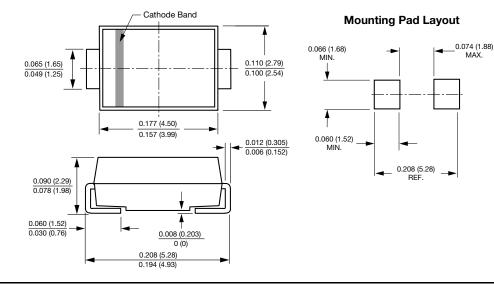


Fig. 4 - Typical Reverse Characteristics





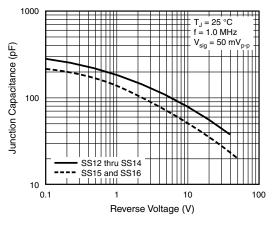


Fig. 5 - Typical Junction Capacitance

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