

## Surface Mount Schottky Barrier Rectifier


**DO-214AC (SMA)**

### 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 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
$V_{RRM}$	20 V, 30 V, 40 V, 50 V, 60 V
$I_{FSM}$	40 A
$V_F$	0.50 V, 0.75 V
$T_J$ max.	125 °C, 150 °C
Package	DO-214AC
Diode variations	Single

MAXIMUM RATINGS (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					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	40					A
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000					V/μs
Operating junction temperature range	T <sub>J</sub>	-65 to +125			-65 to +150		°C
Storage temperature range	T <sub>STG</sub>	-65 to +150					°C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °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 <sub>F</sub>	0.50			0.75		V
Maximum DC reverse current at rated DC blocking voltage <sup>(1)</sup>	T <sub>A</sub> = 25 °C	I <sub>R</sub>	0.2					mA
	T <sub>A</sub> = 100 °C		6.0			5.0		

**Note**
<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SS12	SS13	SS14	SS15	SS16	UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	88					°C/W
	R <sub>θJL</sub>	28					

**Note**
<sup>(1)</sup> PCB mounted with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

<b>ORDERING INFORMATION</b> (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 <sup>(1)</sup>	0.064	H	1800	7" diameter plastic tape and reel
SS14HE3_A/I <sup>(1)</sup>	0.064	I	7500	13" diameter plastic tape and reel

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

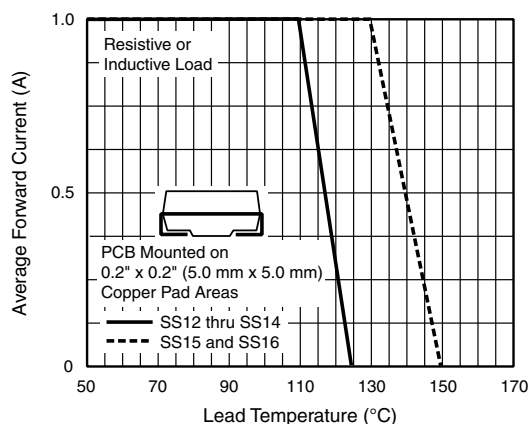
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

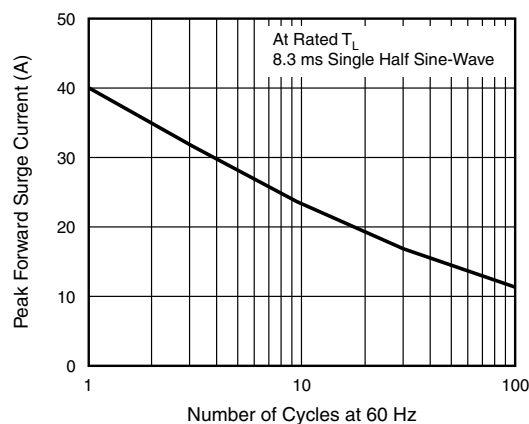


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

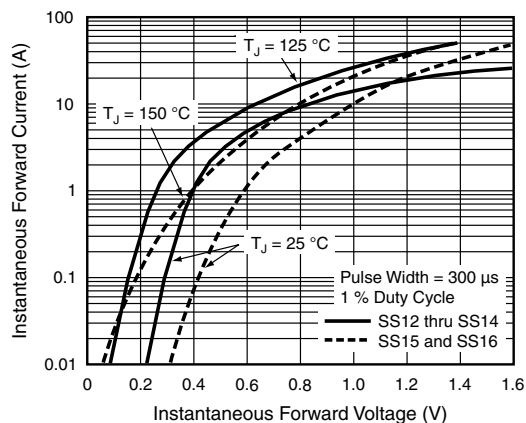


Fig. 3 - Typical Instantaneous Forward Characteristics

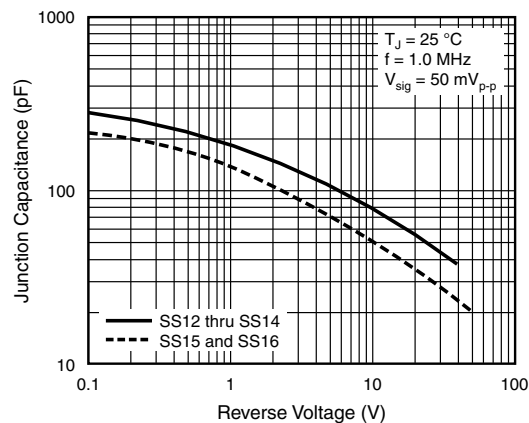


Fig. 5 - Typical Junction Capacitance

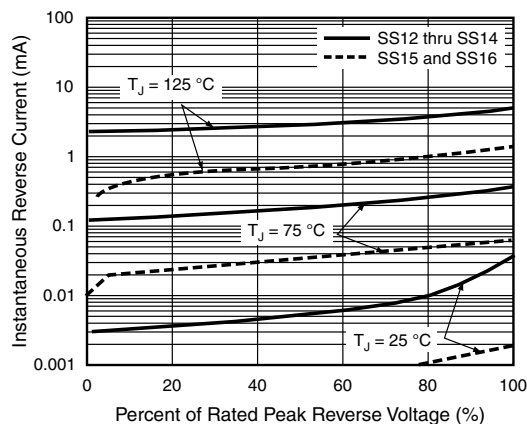
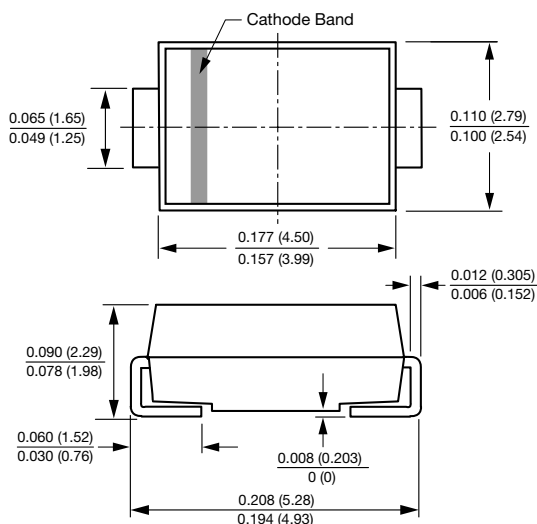


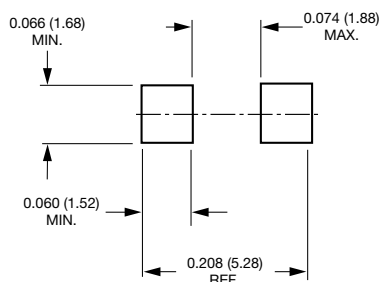
Fig. 4 - Typical Reverse Characteristics

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-214AC (SMA)



#### Mounting Pad Layout





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