

Vishay General Semiconductor

# High Current Density Surface Mount Schottky Rectifier



SMA (DO-214AC)

PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	3.0 A				
V <sub>RRM</sub>	30 V, 40 V				
I <sub>FSM</sub>	75 A				
V <sub>F</sub>	0.38 V, 0.42 V				
T <sub>J</sub> max.	150 °C				
Package	DO-214AC (SMA)				
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 qualified
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>

### **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 cathode end

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	SSA33L	SSA34	UNIT	
Device marking code		33L	S34	V	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	30	40	V	
Maximum RMS voltage	V <sub>RMS</sub>	21	28	V	
Maximum DC blocking voltage	V <sub>DC</sub>	30 40		V	
Maximum average forward rectified current at T <sub>L</sub> (fig. 1)	I <sub>F(AV)</sub>	3.0		A	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	75		А	
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000		V/µs	
Operating junction temperature range	TJ	-65 to +150		°C	
Storage temperature range	T <sub>STG</sub>	-65 to +150			



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ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	SSA33L		SSA34		UNIT
FARAMETER				TYP.	MAX.	TYP.	MAX.	
Maximum instantaneous forward voltage <sup>(1)</sup>	3.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>	0.43	0.45	0.46	0.49	v
		T <sub>J</sub> = 125 °C		0.34	0.38	0.38	0.42	
Maximum reverse current at rated $V_{B}^{(2)}$		T <sub>J</sub> = 25 °C	1	-	0.5	-	0.2	mA
Maximum reverse current at rated v <sub>R</sub>		T <sub>J</sub> = 125 °C	IR	20	35	17	30	ШA

Notes

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

<sup>(2)</sup> Pulse test: Pulse width  $\leq$  40 ms

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)					
PARAMETER	METER SYMBOL S		SSA34	UNIT	
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	110		°C/W	
	$R_{\theta JL}$	28			

#### Note

<sup>(1)</sup> Aluminum substrate mounted

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SSA33L-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel		
SSA33L-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel		
SSA33LHE3_A/H <sup>(1)</sup>	0.064	н	1800	7" diameter plastic tape and reel		
SSA33LHE3_A/I <sup>(1)</sup>	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)

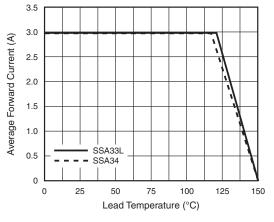


Fig. 1 - Forward Current Derating Curve

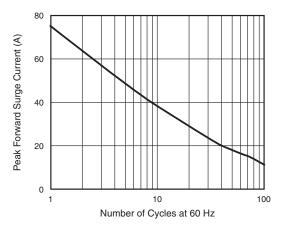
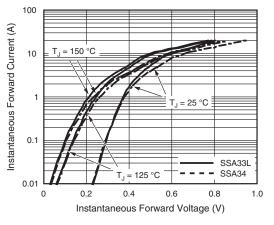


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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Fig. 3 - Typical Instantaneous Forward Characteristics

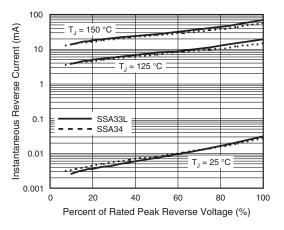
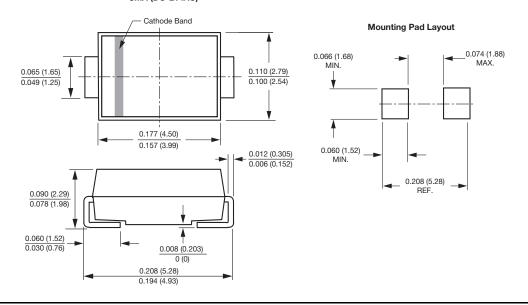


Fig. 4 - Typical Reverse Characteristics

#### PACKAGE OUTLINE DIMENSIONS in inches (millimeters) SMA (DO-214AC)



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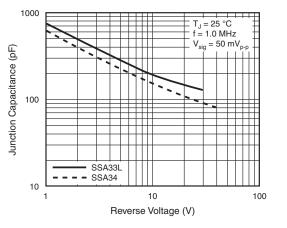


Fig. 5 - Typical Junction Capacitance



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