

# High-Current Density Surface Mount Schottky 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 - RoHS-compliant, AEC-Q101 qualified  
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 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
$V_{RRM}$	30 V, 40 V
$I_{FSM}$	75 A
$V_F$	0.38 V, 0.42 V
$T_J \text{ max.}$	150 °C

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	SSA33L	SSA34	UNIT
Device marking code		33L	S34	V
Maximum repetitive peak reverse voltage	$V_{RRM}$	30	40	V
Maximum RMS voltage	$V_{RMS}$	21	28	V
Maximum DC blocking voltage	$V_{DC}$	30	40	V
Maximum average forward rectified current at $T_L$ (fig. 1)	$I_{F(AV)}$	3.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	75		A
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000		V/ $\mu$ s
Operating junction temperature range	$T_J$	- 65 to + 150		°C
Storage temperature range	$T_{STG}$	- 65 to + 150		°C

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

PARAMETER	TEST CONDITIONS	SYMBOL	SSA33L		SSA34		UNIT
			TYP.	MAX.	TYP.	MAX.	
Maximum instantaneous forward voltage <sup>(1)</sup>	3.0 A	$T_J = 25\text{ }^{\circ}\text{C}$	0.43	0.45	0.46	0.49	V
		$T_J = 125\text{ }^{\circ}\text{C}$	0.34	0.38	0.38	0.42	
Maximum reverse current at rated $V_R$ <sup>(2)</sup>		$T_J = 25\text{ }^{\circ}\text{C}$	-	0.5	-	0.2	mA
		$T_J = 125\text{ }^{\circ}\text{C}$	20	35	17	30	

**Notes**

- (1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle  
 (2) Pulse test: Pulse width  $\leq 40\text{ ms}$

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

PARAMETER	SYMBOL	SSA33L	SSA34	UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	110		°C/W
	R <sub>θJL</sub>	28		

**Note**

- (1) 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
SSA33LHE3/61T <sup>(1)</sup>	0.064	61T	1800	7" diameter plastic tape and reel
SSA33LHE3/5AT <sup>(1)</sup>	0.064	5AT	7500	13" diameter plastic tape and reel
SSA33LHE3_A/H <sup>(1)</sup>	0.064	H	1800	7" diameter plastic tape and reel
SSA33LHE3_A/I <sup>(1)</sup>	0.064	I	7500	13" diameter plastic tape and reel

**Note**

- (1) AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

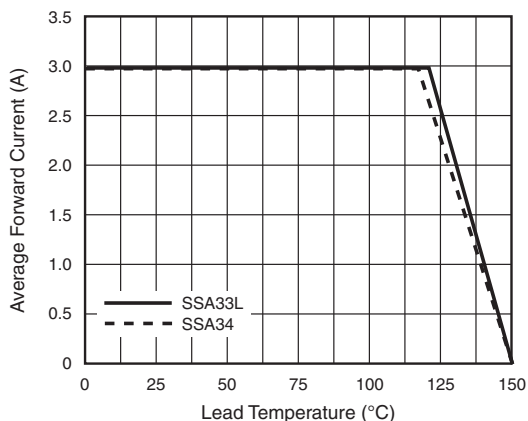


Fig. 1 - Forward Current Derating Curve

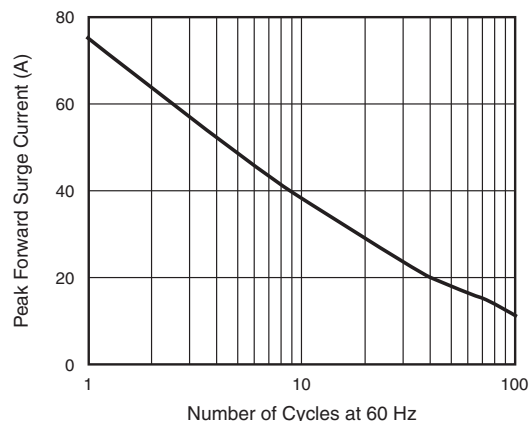


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

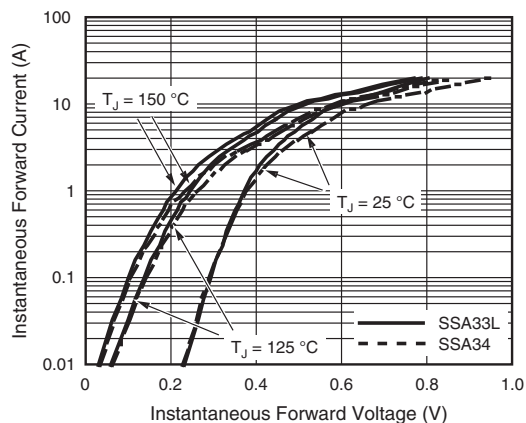


Fig. 3 - Typical Instantaneous Forward Characteristics

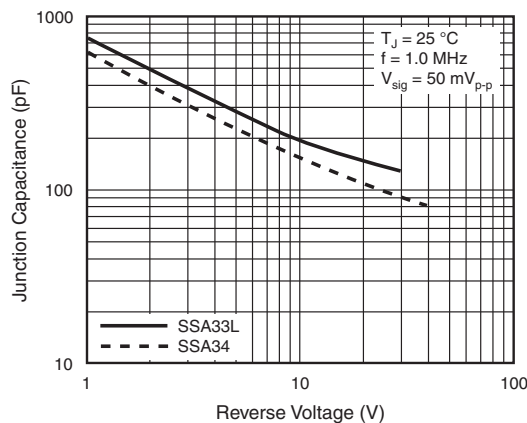


Fig. 5 - Typical Junction Capacitance

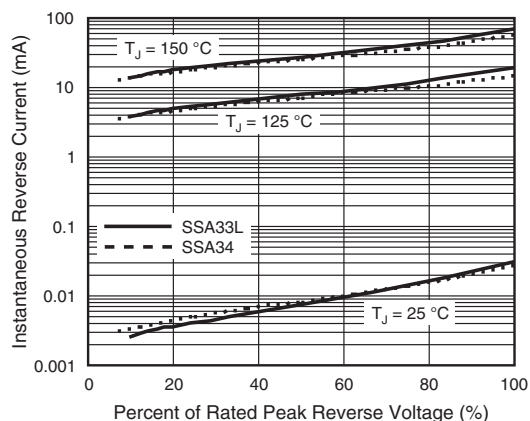
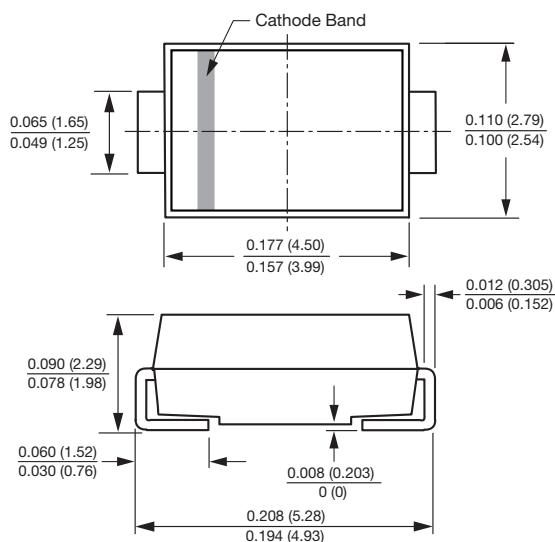
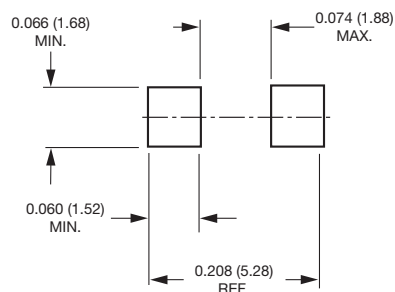


Fig. 4 - Typical Reverse Characteristics

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



### Mounting Pad Layout





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