

# High Current Density Surface Mount Schottky Rectifier


**DO-214AC (SMA)**

**RoHS**  
COMPLIANT

**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)

**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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
$V_{RRM}$	30 V, 40 V
$I_{FSM}$	60 A
$E_{AS}$	11.25 mJ
$V_F$	0.38 V, 0.42 V
$T_J \text{ max.}$	150 °C
Package	DO-214AC (SMA)
Diode variations	Single die

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	SSA23L	SSA24	UNIT
Device marking code		23L	S24	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)	$I_{F(AV)}$	2.0		A
Peak forward surge current 8.3 ms single halfsine-wave superimposed on rated load	$I_{FSM}$	60		A
Non-repetitive avalanche energy at $T_A = 25\text{ °C}$ , $I_{AS} = 1.5\text{ A}$ , $L = 10\text{ mH}$	$E_{AS}$	11.25		mJ
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 <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	SSA23L		SSA24		UNIT
				TYP.	MAX.	TYP.	MAX.	
Maximum instantaneous forward voltage <sup>(1)</sup>	2.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>	0.43	0.45	0.45	0.49	V
		T <sub>J</sub> = 125 °C		0.32	0.38	0.36	0.42	
Maximum reverse current at rated V <sub>R</sub> <sup>(2)</sup>		T <sub>J</sub> = 25 °C	I <sub>R</sub>	-	0.5	-	0.2	mA
		T <sub>J</sub> = 125 °C		15	25	12	20	

**Notes**

- <sup>(1)</sup> Pulse test: 300 μs pulse width, 1 % duty cycle
- <sup>(2)</sup> Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SSA23L	SSA24	UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	110		°C/W
	R <sub>θJL</sub>	28		

**Note**

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SSA23L-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
SSA23L-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
SSA23LHE3_A/H <sup>(1)</sup>	0.064	H	1800	7" diameter plastic tape and reel
SSA23LHE3_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<sub>A</sub> = 25 °C unless otherwise noted)**

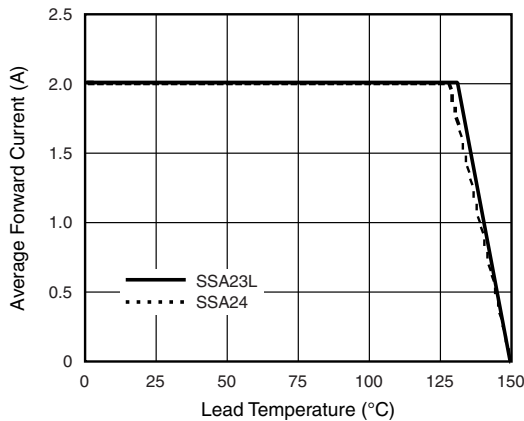


Fig. 1 - Forward Current Derating Curve

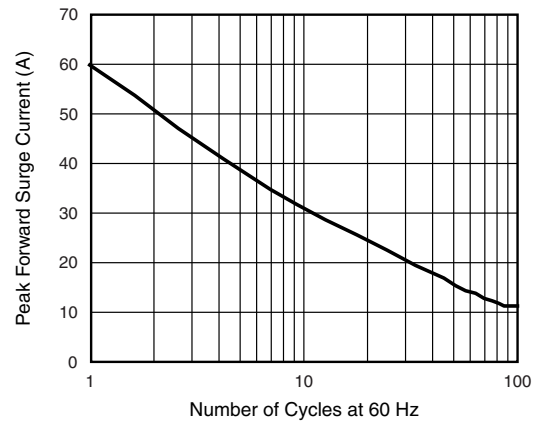


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

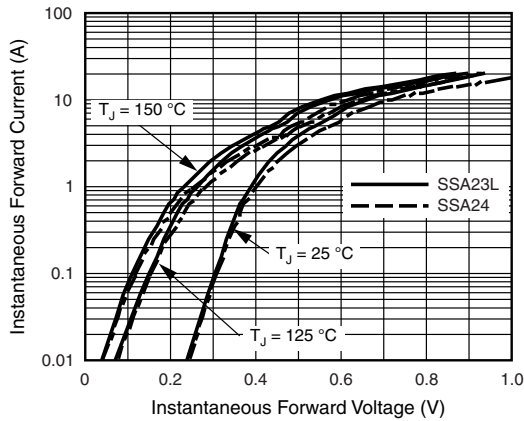


Fig. 3 - Typical Instantaneous Forward Characteristics

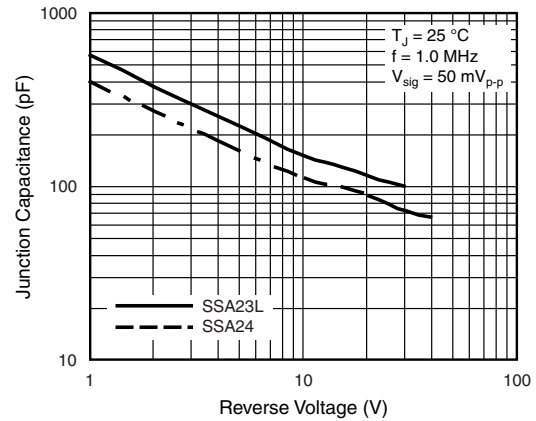


Fig. 5 - Typical Junction Capacitance

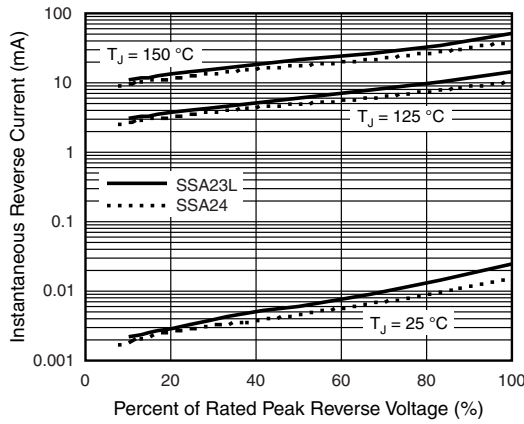
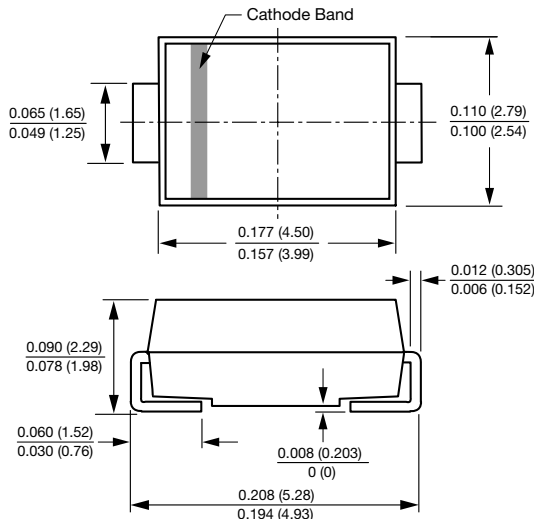
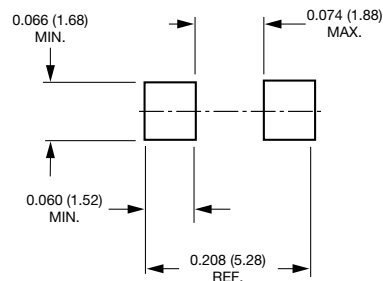


Fig. 4 - Typical Reverse Characteristics

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



**Mounting Pad Layout**





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