

# High Current Density Surface-Mount Schottky Rectifier


**SMA (DO-214AC)**

Cathode  Anode

## LINKS TO ADDITIONAL RESOURCES



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
$T_J$ max.	150 °C
Package	SMA (DO-214AC)
Circuit configuration	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 available
- 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: SMA (DO-214AC)

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

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 half sine-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** ( $T_A = 25\text{ °C}$  unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	SSA23L		SSA24		UNIT
			TYP.	MAX.	TYP.	MAX.	
Maximum instantaneous forward voltage <sup>(1)</sup>	2.0 A	$T_J = 25\text{ °C}$	0.43	0.45	0.45	0.49	V
		$T_J = 125\text{ °C}$	0.32	0.38	0.36	0.42	
Maximum reverse current at rated $V_R$ <sup>(2)</sup>		$T_J = 25\text{ °C}$	-	0.5	-	0.2	mA
		$T_J = 125\text{ °C}$	15	25	12	20	

**Notes**(1) Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle(2) Pulse test: Pulse width  $\leq$  40 ms**THERMAL CHARACTERISTICS** ( $T_A = 25\text{ °C}$  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**

(1) 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**

(1) AEC-Q101 qualified

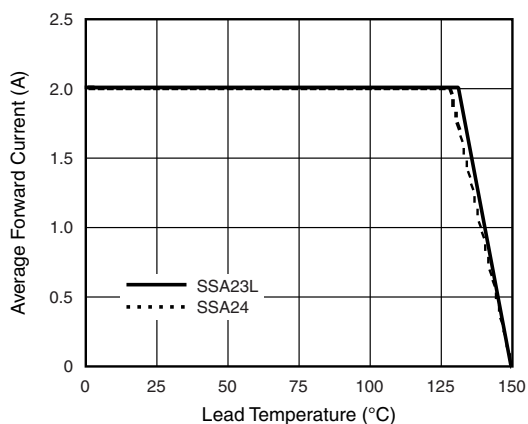
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

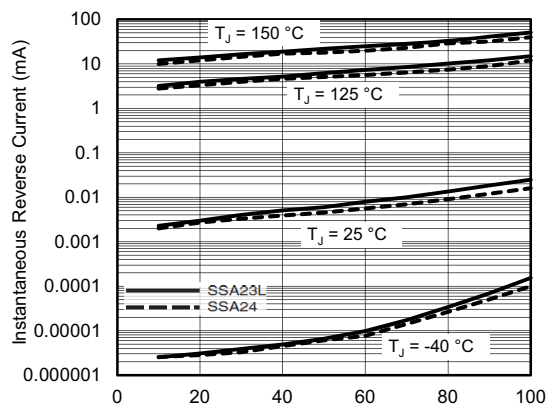


Fig. 4 - Typical Reverse Characteristics

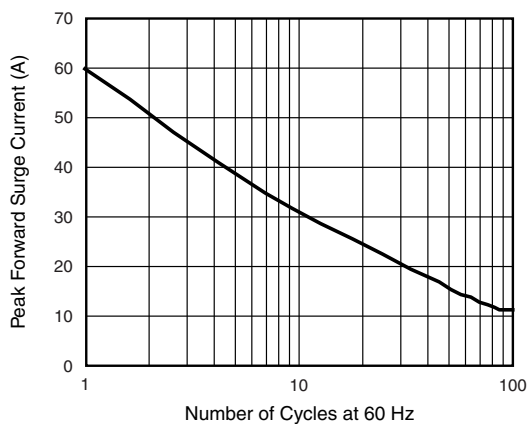


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

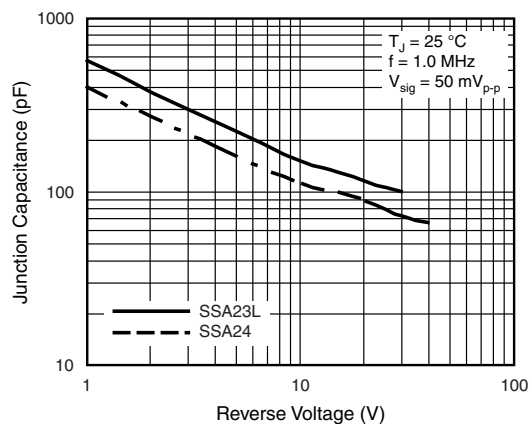


Fig. 5 - Typical Junction Capacitance

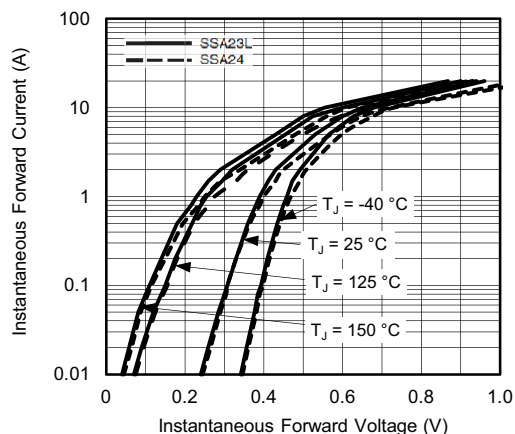
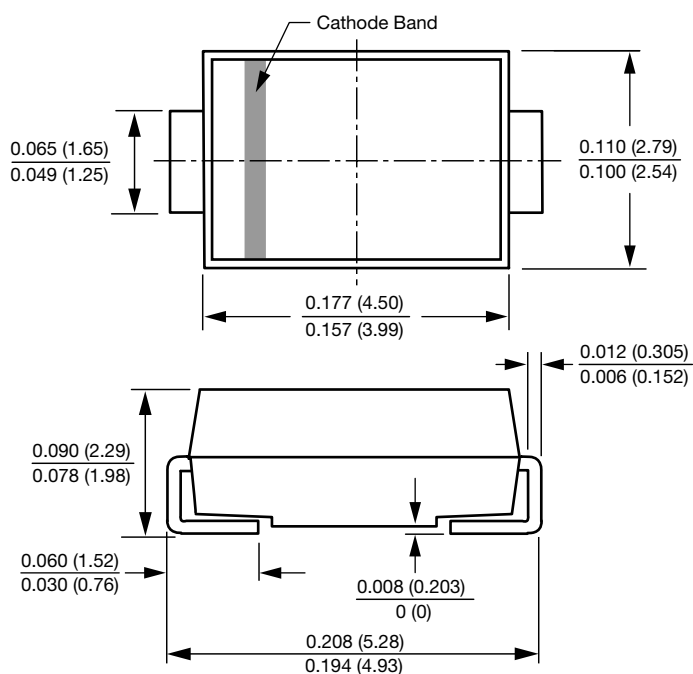


Fig. 3 - Typical Instantaneous Forward Characteristics

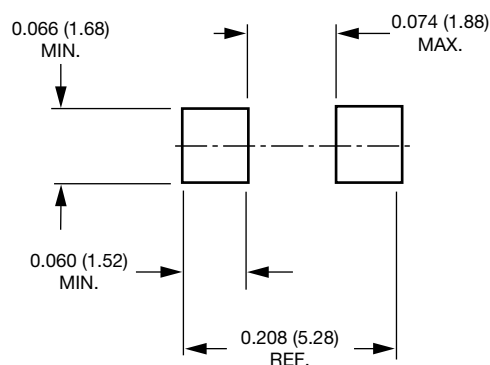


**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**SMA (DO-214AC)**



**Mounting Pad Layout**





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