

## High-Current Density Surface Mount Schottky Rectifier



DO-214AC (SMA)

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

### 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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS  
COMPLIANT

### TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

### MECHANICAL DATA

**Case:** DO-214AC (SMA)

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes the 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 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 T <sub>J</sub> = 125 °C	V <sub>F</sub>	0.43 0.32	0.45 0.38	0.45 0.36	0.49 0.42	V
Maximum reverse current at rated V <sub>R</sub> <sup>(2)</sup>		T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	I <sub>R</sub>	- 15	0.5 25	- 12	0.2 20	mA

**Notes:**

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) 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> R <sub>θJL</sub>		110 28	°C/W

**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
SSA23LHE3/61T <sup>(1)</sup>	0.064	61T	1800	7" diameter plastic tape and reel
SSA23LHE3/5AT <sup>(1)</sup>	0.064	5AT	7500	13" diameter plastic tape and reel

**Note:**

- (1) Automotive grade AEC Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

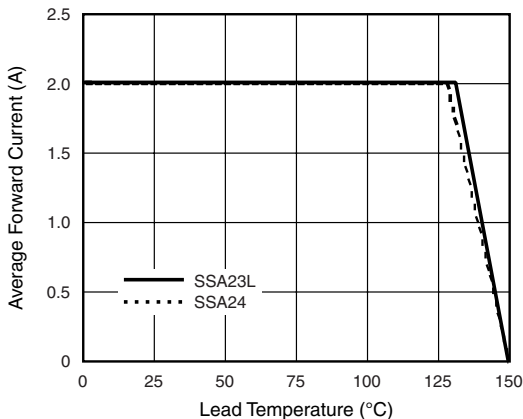


Figure 1. Forward Current Derating Curve

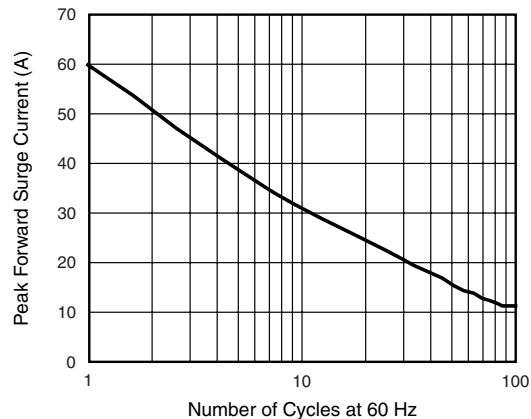


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

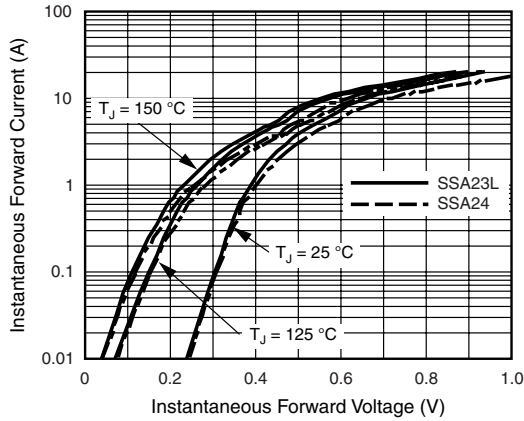


Figure 3. Typical Instantaneous Forward Characteristics

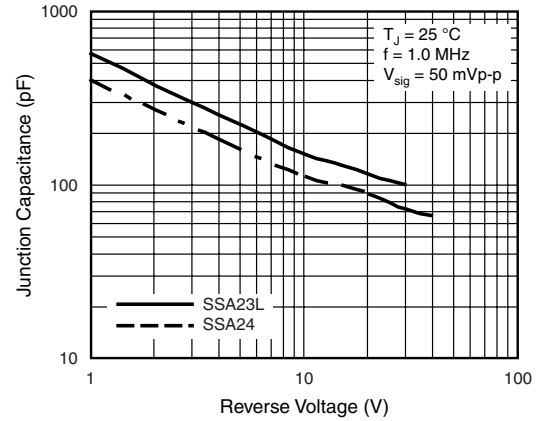


Figure 5. Typical Junction Capacitance

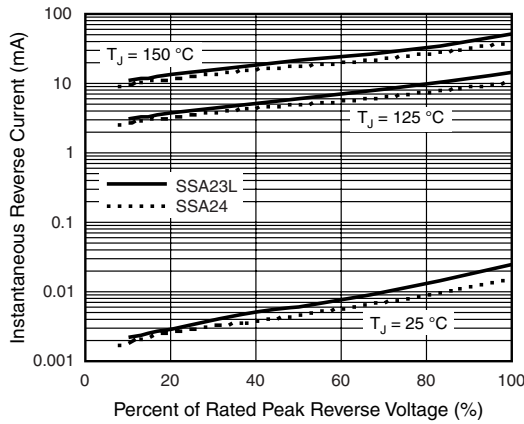
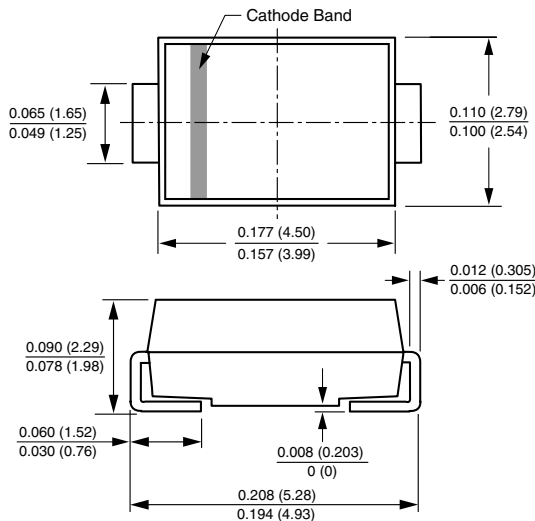


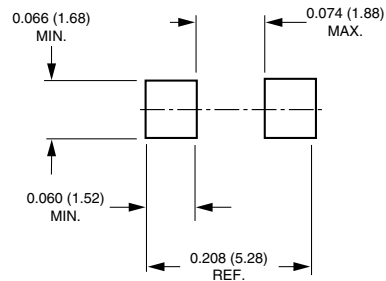
Figure 4. Typical Reverse Characteristics

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

**DO-214AC (SMA)**



**Mounting Pad Layout**





## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.