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## 1A, 200V - 1000V Surface Mount Fast Recovery Rectifiers

### FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low profile package
- Low power loss, high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21


**SOD-123W**


### MECHANICAL DATA

Case: SOD-123W

Molding compound: UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Part no. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

Terminal: Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

Polarity: Indicated by cathode band

Weight: 0.016 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)								
PARAMETER	SYMBOL	RS1DLW	RS1GLW	RS1JLW	RS1KLW	RS1MLW	UNIT	
Marking code		RDLW	RGLW	RJLW	RKLW	RMLW		
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	200	400	600	800	1000	V	
Maximum RMS voltage	V <sub>RMS</sub>	140	280	420	560	700	V	
Maximum DC blocking voltage	V <sub>DC</sub>	200	400	600	800	1000	V	
Maximum average forward rectified current	I <sub>F(AV)</sub>	1.0						A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	30						A
Maximum instantaneous forward voltage (Note 1) @ 1 A	V <sub>F</sub>	1.3						V
Maximum reverse current @ rated V <sub>R</sub>	I <sub>R</sub>	T <sub>J</sub> =25°C					5	μA
		T <sub>J</sub> =125°C					150	
Maximum reverse recovery time (Note 2)	t <sub>rr</sub>	150			250		ns	
Typical thermal resistance	R <sub>θJL</sub>	25					°C/W	
	R <sub>θJA</sub>	80						
Operating junction temperature range	T <sub>J</sub>	- 55 to +175					°C	
Storage temperature range	T <sub>STG</sub>	- 55 to +175					°C	

Note 1: Pulse test with PW=300μs, 1% duty cycle

Note 2: Test conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

**ORDERING INFORMATION**

PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
RS1xLW (Note 1, 2)	H	RV	G	SOD-123W	3,000 / 7" Plastic reel
		RQ			10,000 / 13" Paper reel

Note 1: "x" defines voltage from 200V (RS1DLW) to 1000V (RS1MLW)

Note 2: Whole series with green compound (halogen-free)

**EXAMPLE**

EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
RS1JLWHRVG	RS1JLW	H	RV	G	AEC-Q101 qualified Green compound

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

FIG. 1 FORWARD CURRENT DERATING CURVE

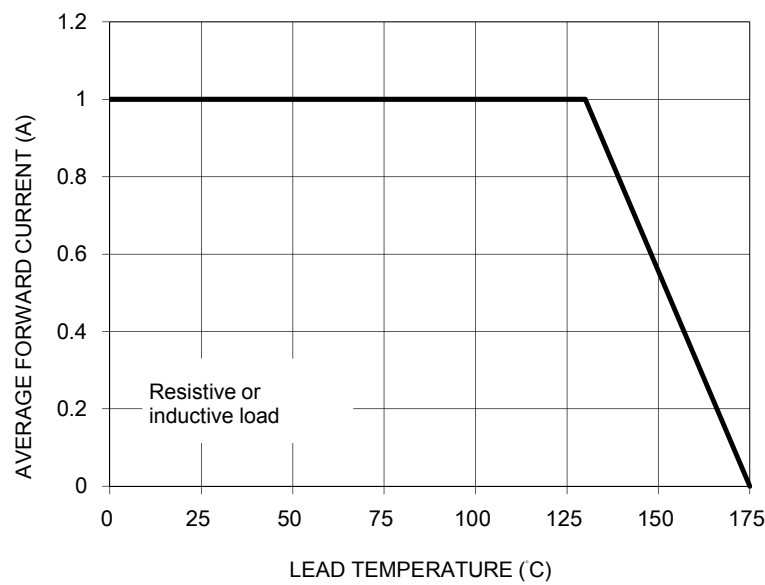


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

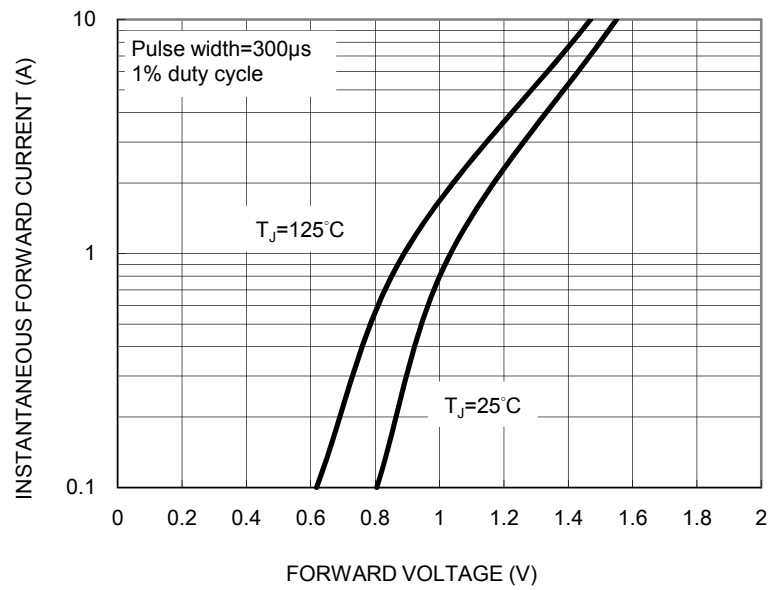


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

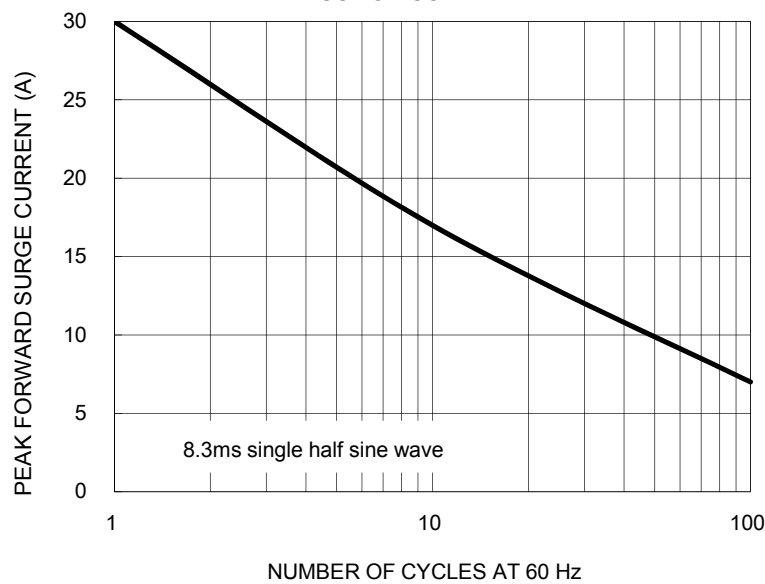


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

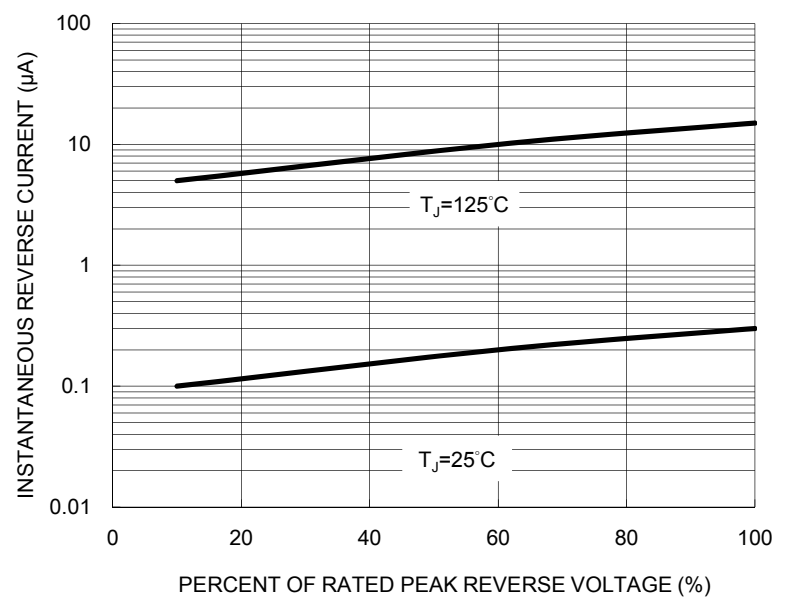
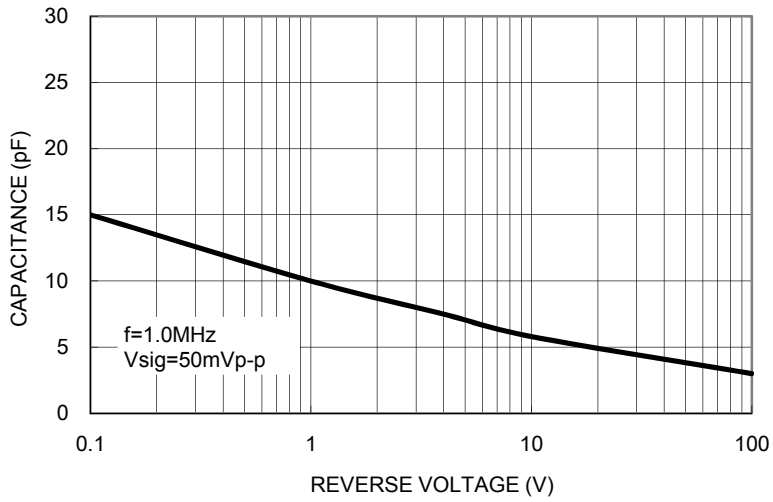
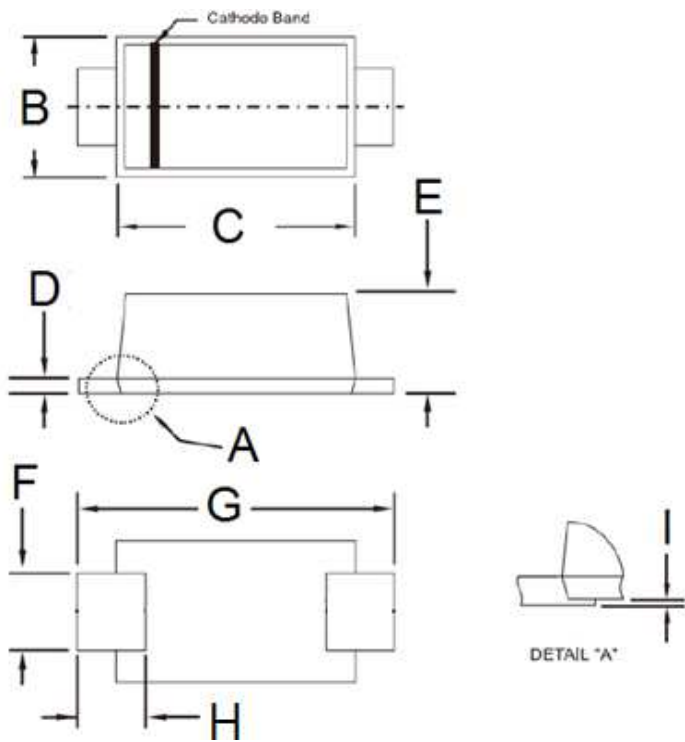


FIG. 5 TYPICAL JUNCTION CAPACITANCE



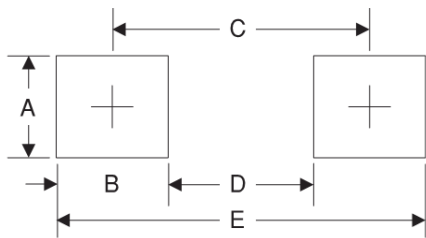
**PACKAGE OUTLINE DIMENSIONS**

**SOD-123W**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
B	1.70	1.90	0.067	0.075
C	2.60	2.90	0.102	0.114
D	0.10	0.22	0.004	0.009
E	0.90	1.02	0.035	0.040
F	0.90	1.05	0.035	0.041
G	3.60	3.80	0.142	0.150
H	0.50	0.85	0.020	0.033
I	0.00	0.10	0.000	0.004

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	1.4	0.055
B	1.2	0.047
C	3.1	0.122
D	1.9	0.075
E	4.3	0.169

**MARKING DIAGRAM**



- P/N = Marking Code
- G = Green compound Code
- YW = Date Code
- F = Factory Code

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