

## 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)

<b>MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS</b> ( $T_A=25^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	RS1DLW	RS1GLW	RS1JLW	RS1KLW	RS1MLW	UNIT	
Marking code		RDLW	RGLW	RJLW	RKLW	RMLW		
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	400	600	800	1000	V	
Maximum RMS voltage	$V_{RMS}$	140	280	420	560	700	V	
Maximum DC blocking voltage	$V_{DC}$	200	400	600	800	1000	V	
Maximum average forward rectified current	$I_{F(AV)}$	1.0						A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30						A
Maximum instantaneous forward voltage (Note 1) @ 1 A	$V_F$	1.3						V
Maximum reverse current @ rated $V_R$	$I_R$	$T_J=25^\circ\text{C}$						$\mu\text{A}$
		$T_J=125^\circ\text{C}$						
Maximum reverse recovery time (Note 2)	$t_{rr}$	150			250		ns	
Typical thermal resistance	$R_{\theta JL}$	25						$^\circ\text{C/W}$
	$R_{\theta JA}$	80						
Operating junction temperature range	$T_J$	- 55 to +175						$^\circ\text{C}$
Storage temperature range	$T_{STG}$	- 55 to +175						$^\circ\text{C}$

Note 1: Pulse test with  $PW=300\mu\text{s}$ , 1% duty cycle

Note 2: Test conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

**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

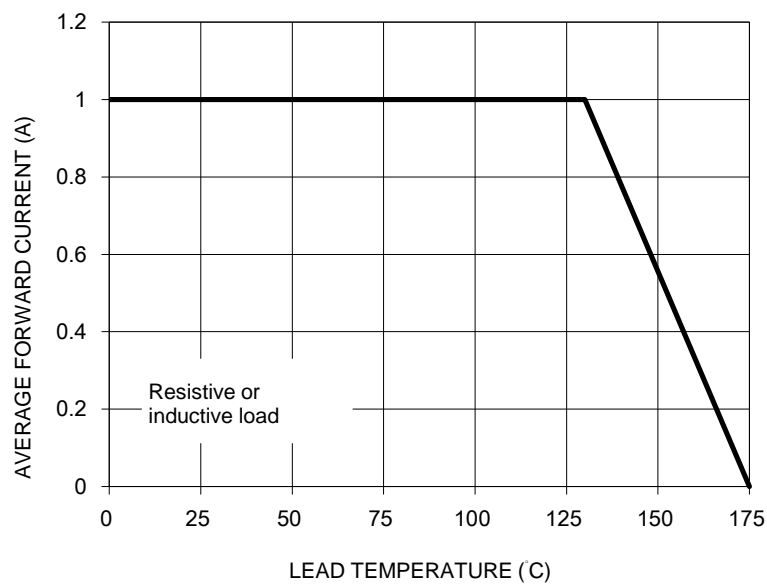


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

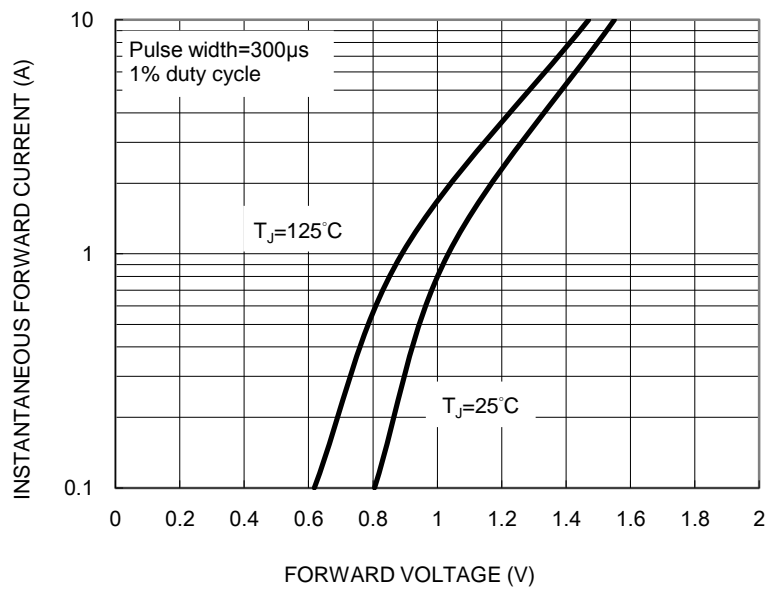


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

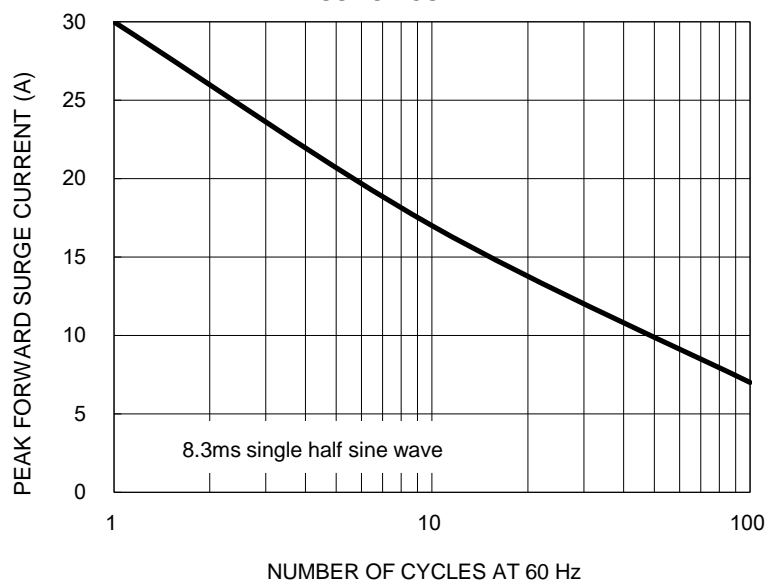


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

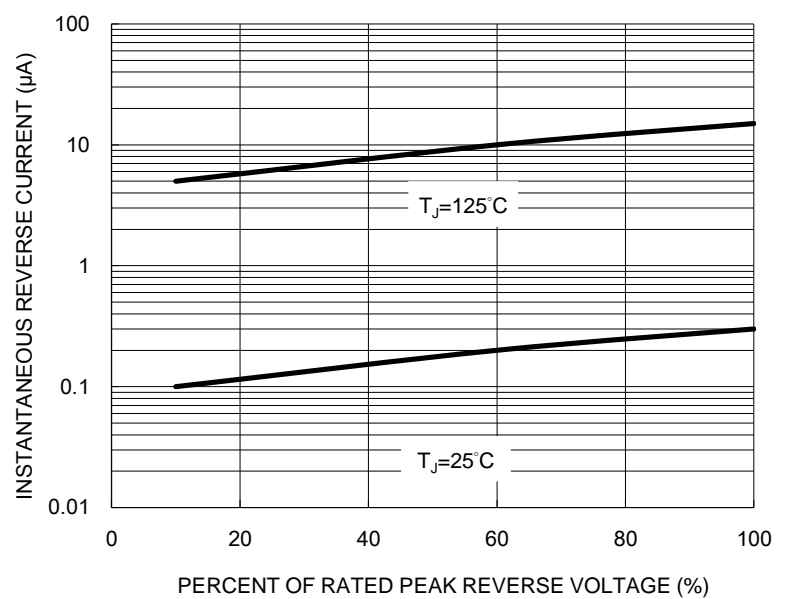
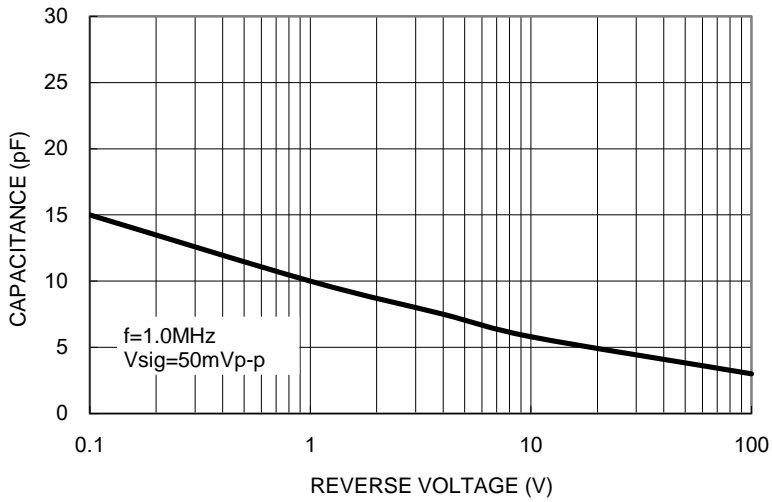
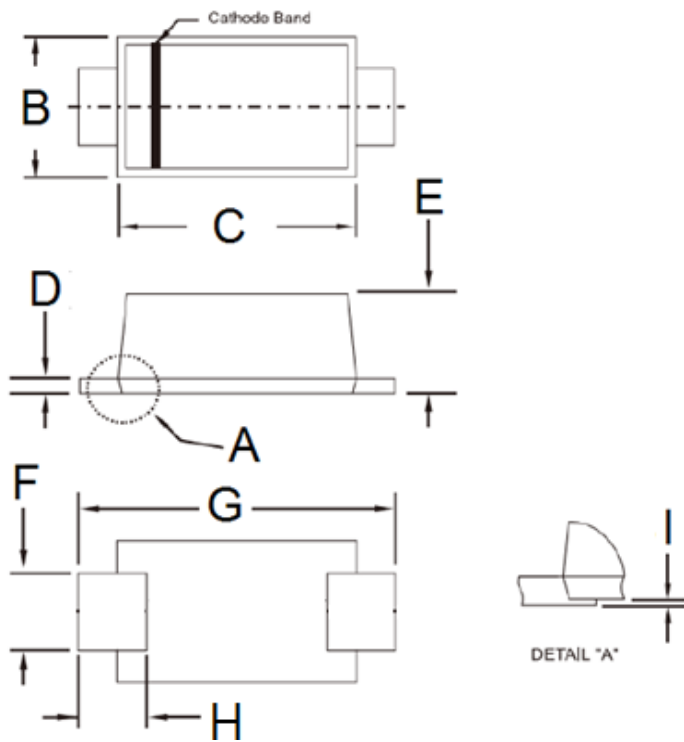


FIG. 5 TYPICAL JUNCTION CAPACITANCE



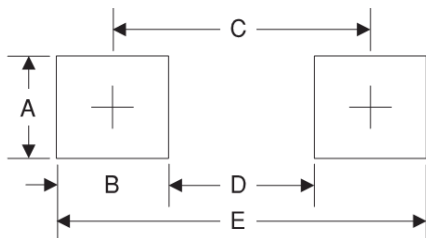
**PACKAGE OUTLINE DIMENSIONS**

**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  
 YW = Date Code  
 F = Factory Code

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