

1A, 200V - 1000V High Efficient Surface Mount 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 (MSL): 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 ($T_A=25^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	HS1DLW	HS1GLW	HS1JLW	HS1KLW	HS1MLW	UNIT	
Marking code		HDLW	HGLW	HJLW	HKLW	HMLW		
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						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	1.0	1.3	1.7			V	
Maximum reverse current @ rated V_R	I_R	1					μA	
		150						
Maximum reverse recovery time (Note 2)	t_{rr}	50		75			ns	
Typical junction capacitance (Note 3)	C_J	16			7		pF	
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: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$

Note 3: Measured at 1 MHz and applied reverse voltage of 4.0V DC.

ORDERING INFORMATION

PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
HS1xLW (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 (HS1DLW) to 1000V (HS1MLW)

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

EXAMPLE

EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
HS1JLWHRVG	HS1JLW	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

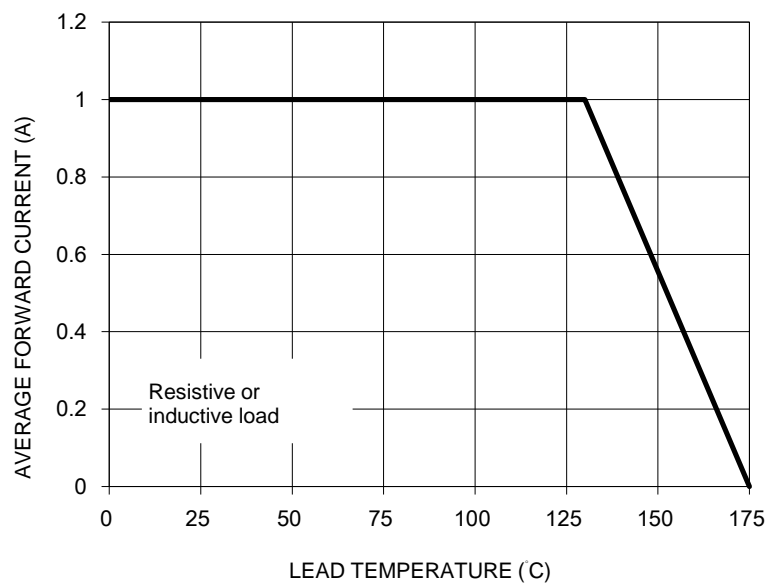


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

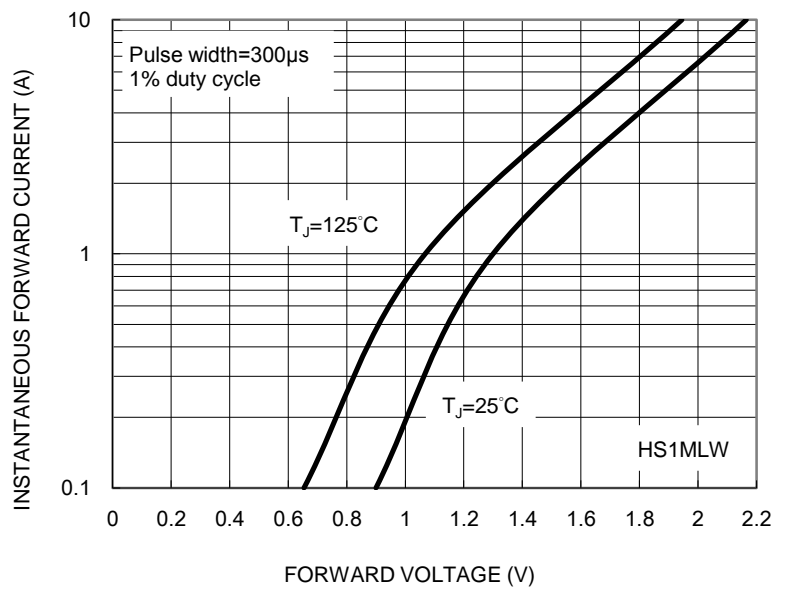


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

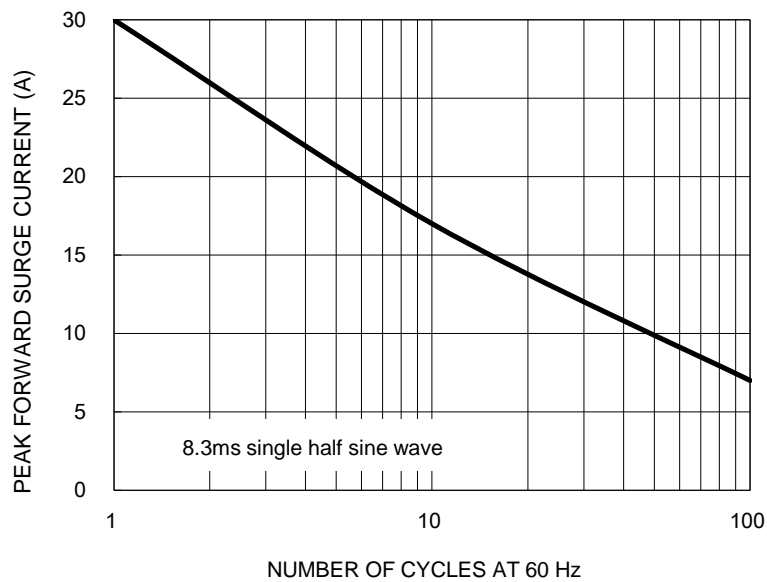


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

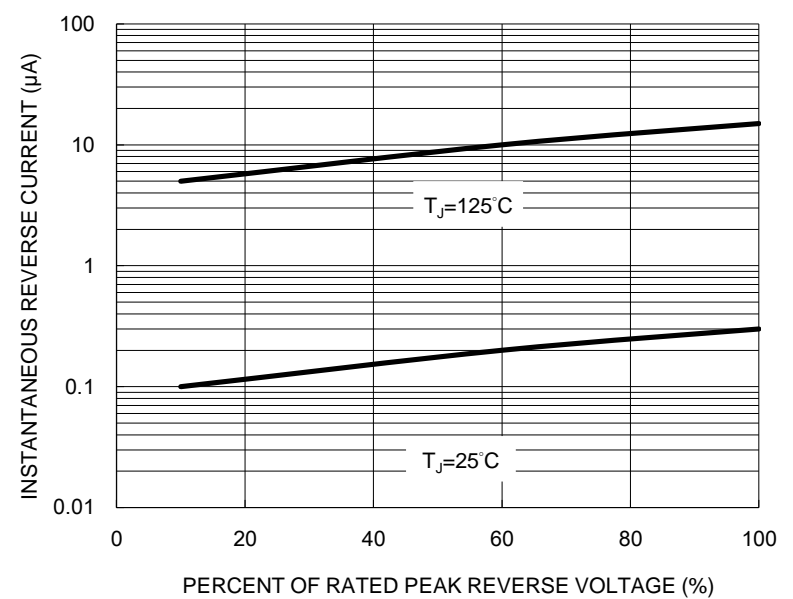
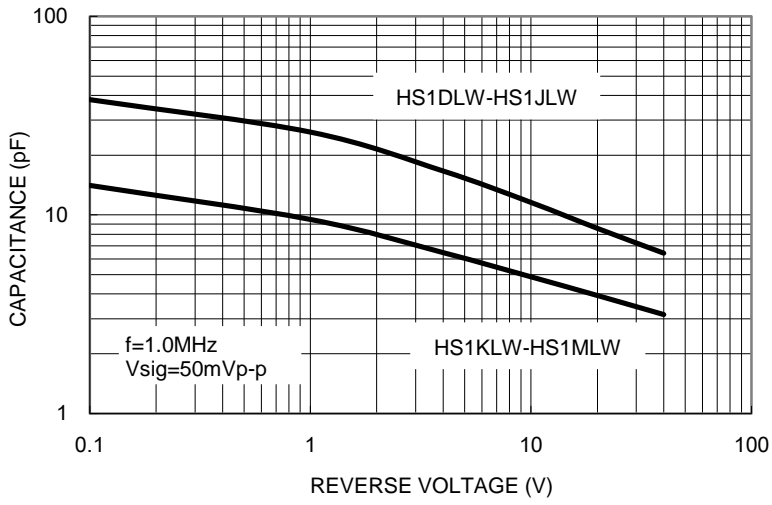
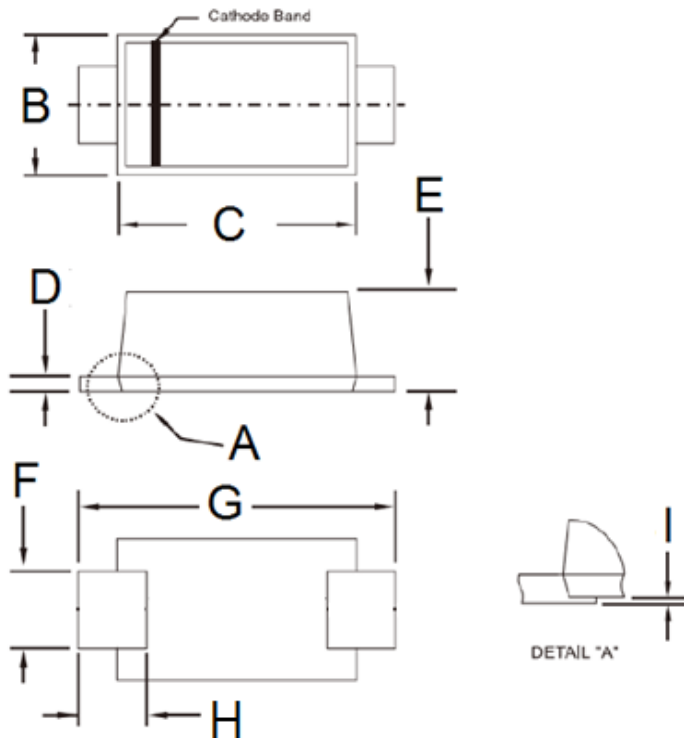


FIG. 5 TYPICAL JUNCTION CAPACITANCE



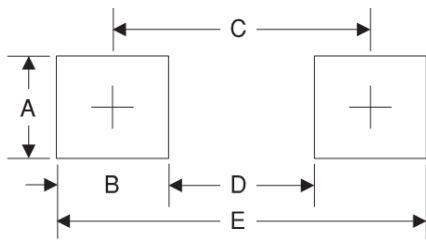
PACKAGE OUTLINE DIMENSIONS

SOD-123W



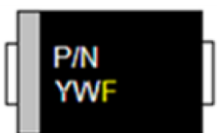
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
B	1.70	1.90	0.067	0.075
C	2.60	2.90	0.102	0.114
D	0.10	0.22	0.004	0.009
E	0.90	1.02	0.035	0.040
F	0.90	1.05	0.035	0.041
G	3.60	3.80	0.142	0.150
H	0.50	0.85	0.020	0.033
I	0.00	0.10	0.000	0.004

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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