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## Surface Mount Fast Recovery Rectifiers

### FEATURES

- Ideal for automated placement
- Compact package size
- High surge current capability
- Low power loss, high efficiency
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



**SOD-123HE**

### MECHANICAL DATA

**Case:** SOD-123HE

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - green compound (halogen-free)

Base P/N with prefix "H" on packing code - AEC-Q101 qualified

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

Meet JESD 201 class 1A whisker test

with prefix "H" on packing code meet JESD 201 class 2 whisker test

**Polarity:** Indicated by cathode band

**Weight:** 0.022g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)					
PARAMETER	SYMBOL	RS1JLS	RS1KLS	RS1MLS	UNIT
Marking code		RJLS	RKLS	RMLS	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	420	560	700	V
Maximum DC blocking voltage	V <sub>DC</sub>	600	800	1000	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	1.2			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	50			A
Maximum instantaneous forward voltage (Note 1) @ 1.2 A	V <sub>F</sub>	1.3			V
Maximum reverse current @ rated VR T <sub>J</sub> =25 °C T <sub>J</sub> =125 °C	I <sub>R</sub>	5 150			μA
Maximum reverse recovery time (Note 2)	trr	300			ns
Typical thermal resistance	R <sub>θJC</sub> R <sub>θJA</sub>	26 80			°C/W
Operating junction temperature range	T <sub>J</sub>	- 55 to +150			°C
Storage temperature range	T <sub>STG</sub>	- 55 to +150			°C

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

Note 2: Reverse recovery test condition: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

ORDERING INFORMATION					
PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
RS1xLS (Note 1, 2)	Prefix "H"	RV	Suffix "G"	SOD-123HE	3,000 / 7" Reel
		RQ		SOD-123HE	10,000 / 13" Reel

Note 1: "x" defines voltage from 600V (RS1JLS) to 1000V (RS1MLS)

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

EXAMPLE					
PREFERRED P/N	PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
RS1MLSHRVG	RS1MLS	H	RV	G	AEC-Q101 qualified Green compound

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

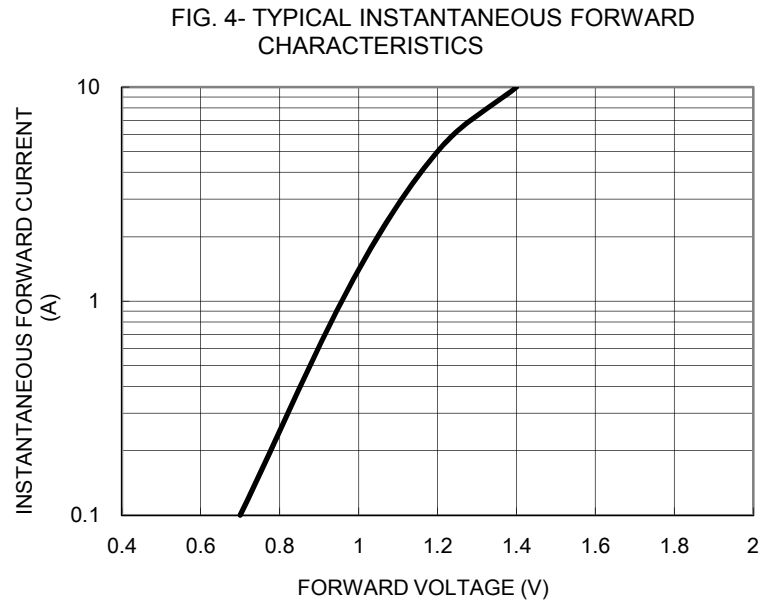
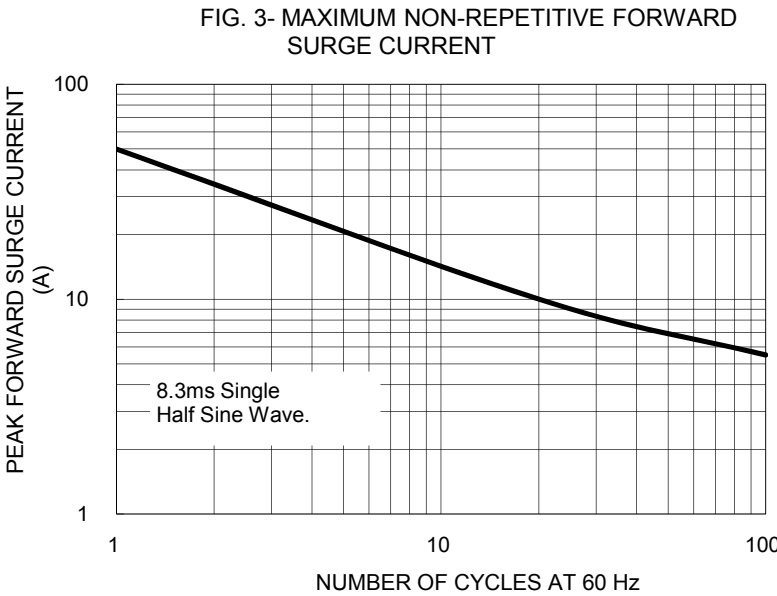
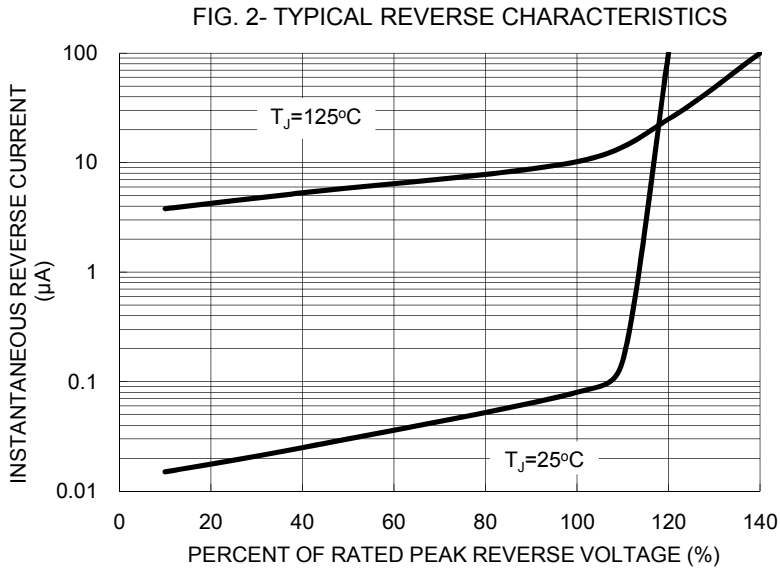
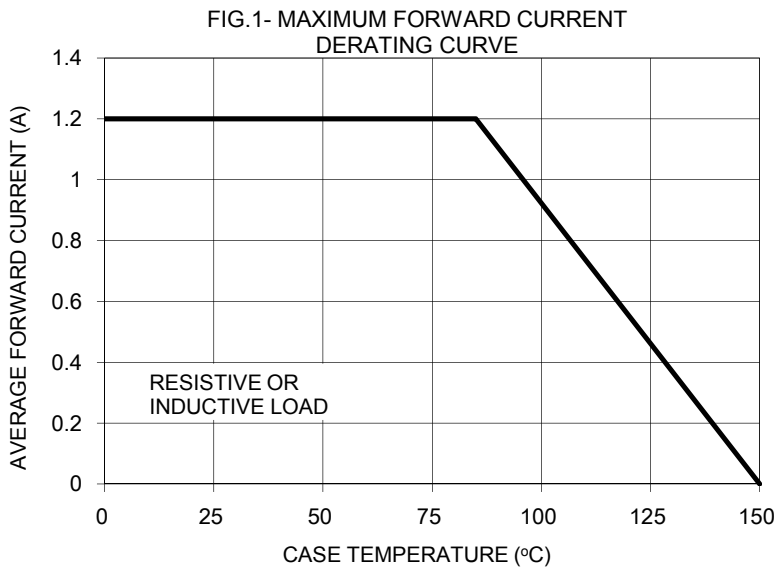




FIG. 5- TYPICAL JUNCTION CAPACITANCE

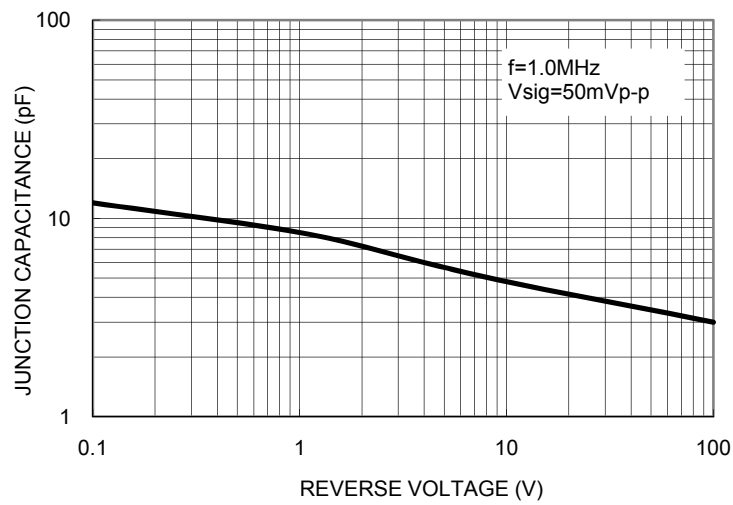
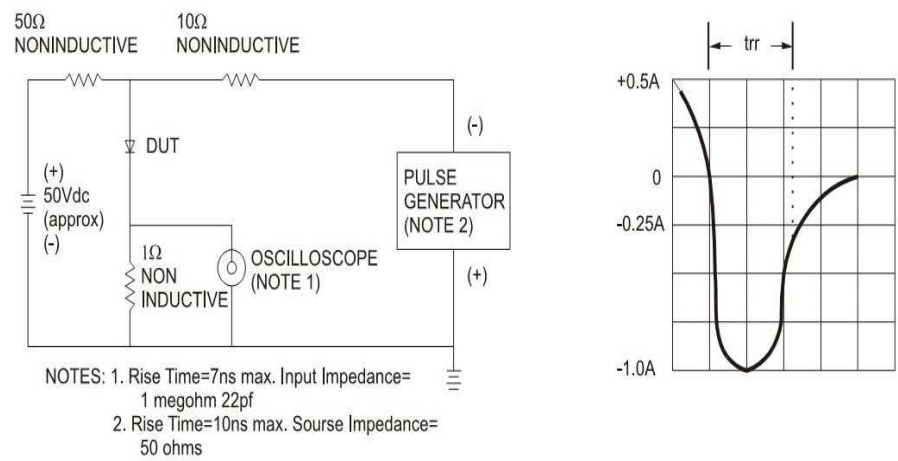
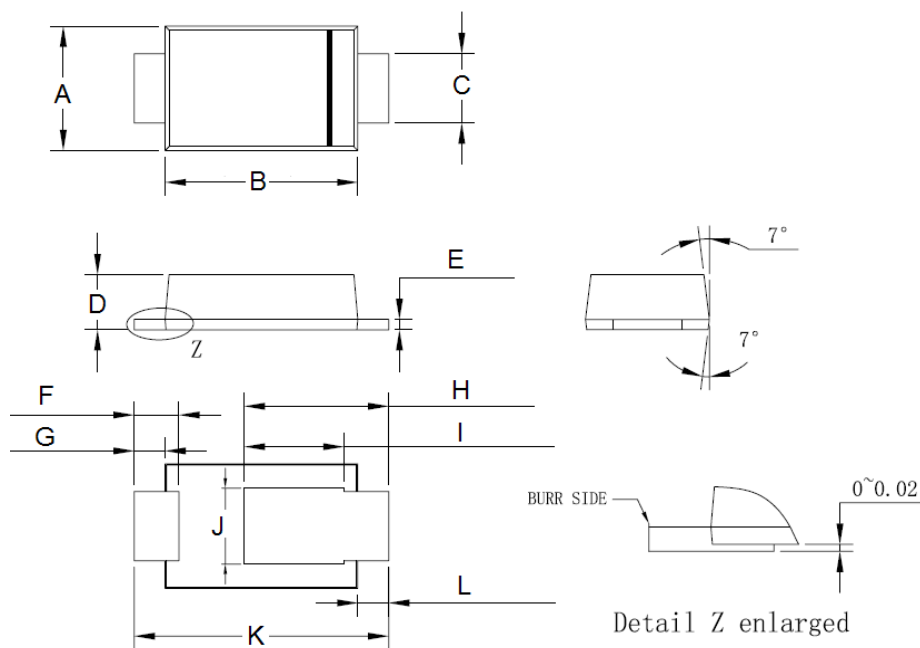


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



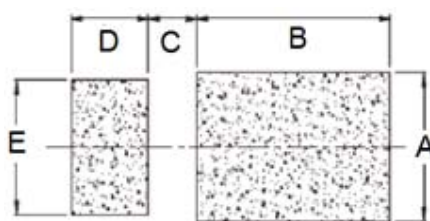
## PACKAGE OUTLINE DIMENSIONS

### SOD-123HE



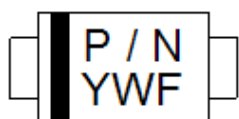
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.65	1.95	0.065	0.077
B	2.60	3.00	0.102	0.118
C	0.85	1.15	0.033	0.045
D	0.75	0.85	0.030	0.033
E	0.10	0.20	0.004	0.008
F	0.55	0.75	0.022	0.030
G	0.35	0.55	0.014	0.022
H	1.90	2.30	0.075	0.091
I	1.35	1.55	0.053	0.061
J	0.95	1.25	0.037	0.049
K	3.50	3.90	0.138	0.154
L	0.35	0.55	0.014	0.022

## SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.40	0.055
B	2.40	0.094
C	0.70	0.028
D	0.90	0.035
E	1.40	0.055

## MARKING DIAGRAM



P/N = Marking Code  
YW = Date Code  
F = Factory Code

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