

## 1A, 200V - 600V Surface Mount Super Fast 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**

**HALOGEN FREE**

### 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: 16 mg (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted) |                    |              |        |        |      |
|--|--------------------|--------------|--------|--------|------|
| PARAMETER  | SYMBOL             | ES1DLW       | ES1GLW | ES1JLW | UNIT |
| Marking Code   |                    | EDLW         | EGLW   | EJLW   |      |
| Maximum repetitive peak reverse voltage  | V <sub>RRM</sub>   | 200          | 400    | 600    | V    |
| Maximum RMS voltage  | V <sub>RMS</sub>   | 140          | 280    | 420    | V    |
| Maximum DC blocking voltage  | V <sub>DC</sub>    | 200          | 400    | 600    | V    |
| Maximum average forward rectified current  | I <sub>F(AV)</sub> | 1            |        |        | 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>     | 0.95         | 1.30   | 1.70   | V    |
| Maximum reverse current @ rated V <sub>R</sub>   | I <sub>R</sub>     | 5            |        |        | μA   |
|  |                    | 100          |        |        |      |
| Typical junction capacitance (Note 2)  | C <sub>J</sub>     | 20           |        |        | pF   |
| Maximum reverse recovery time (Note 3)   | t <sub>rr</sub>    | 35           |        |        | 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: Measured at 1 MHz and applied V<sub>R</sub>=4.0 V

Note 3: 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                 |
|-----------------------|-----------------|--------------|---------------------|----------|-------------------------|
| ES1xLW<br>(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 (ES1DLW) to 600V (ES1JLW)

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

**EXAMPLE**

| EXAMPLE P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                          |
|-------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| ES1JLWHRVG  | ES1JLW   | H               | RV           | G                   | AEC-Q101 qualified<br>Green compound |

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub>=25°C unless otherwise noted)**

FIG.1 FORWARD CURRENT DERATING CURVE

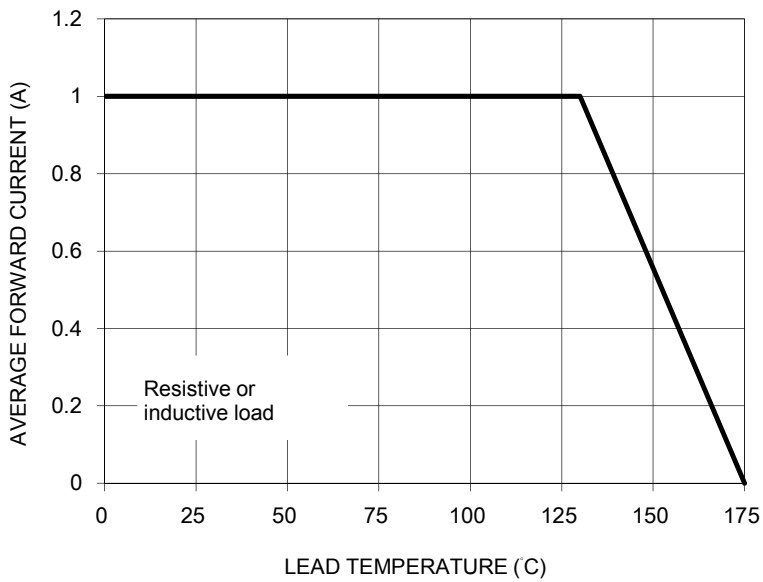


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

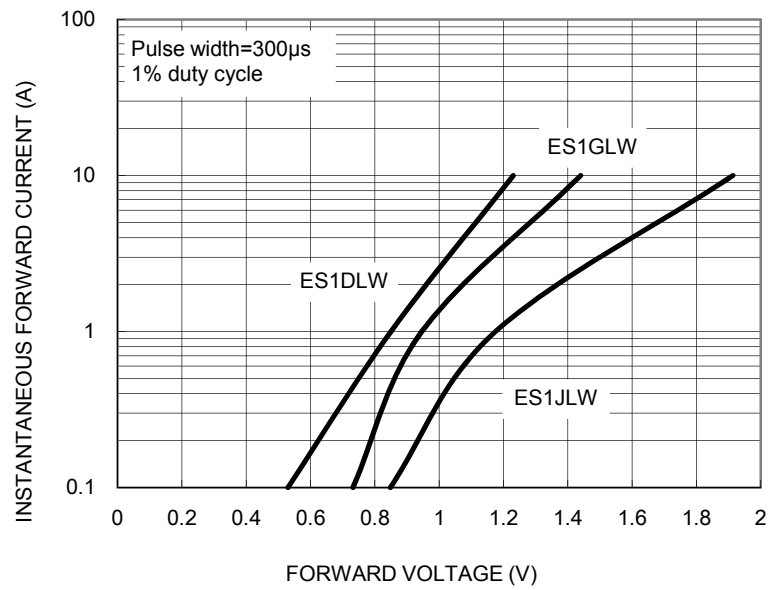


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

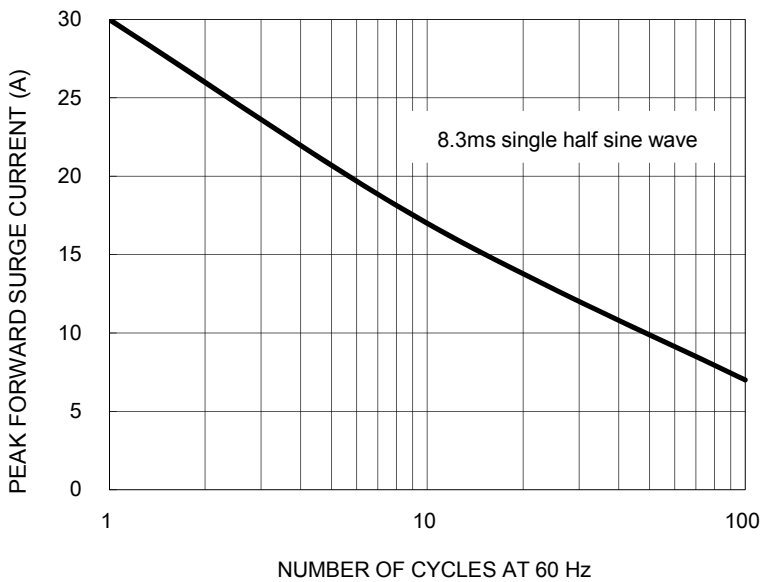


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

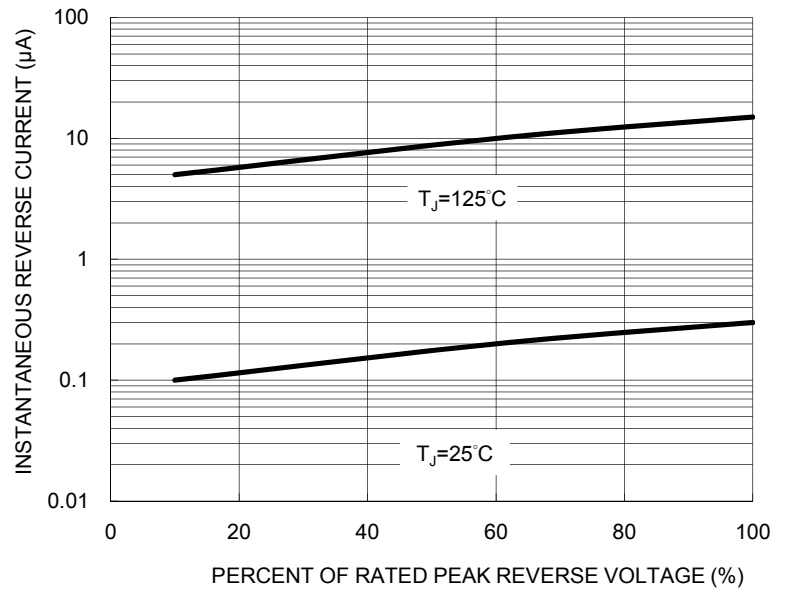
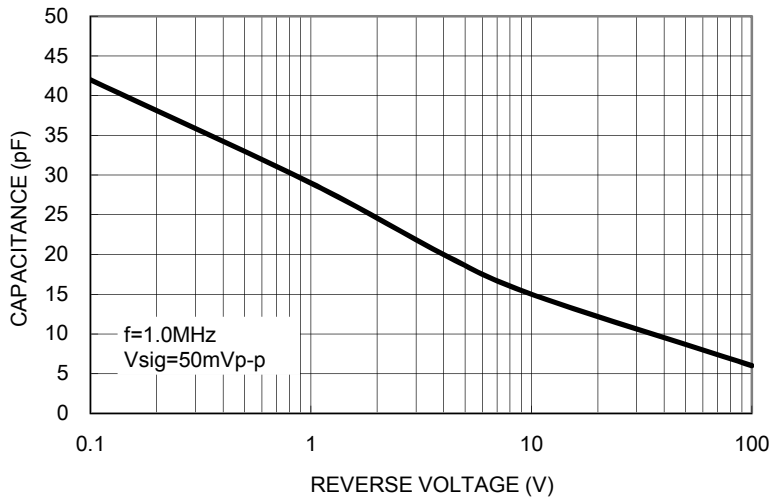
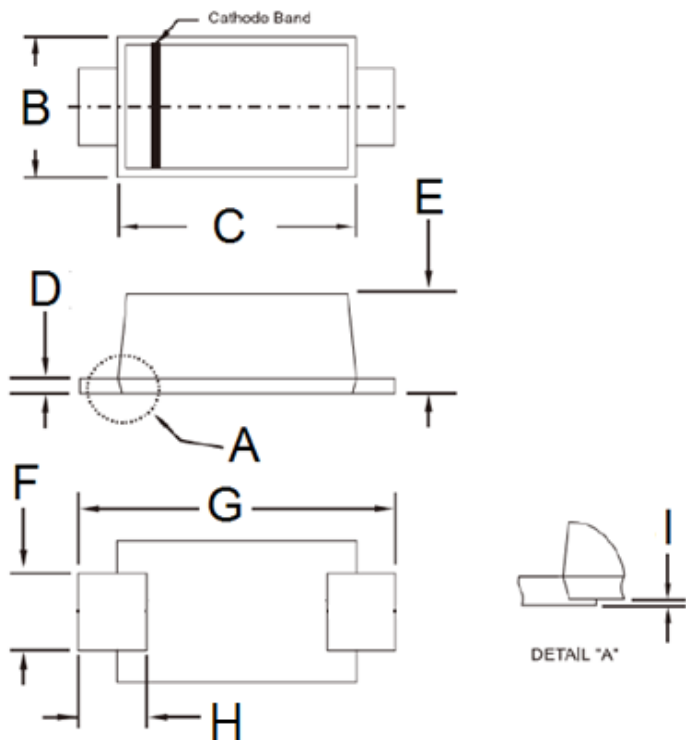


FIG. 5 TYPICAL JUNCTION CAPACITANCE



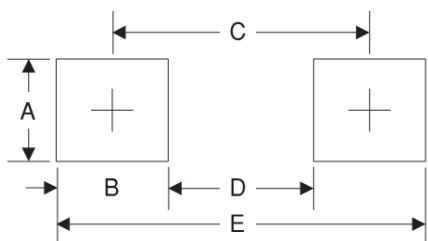
PACKAGE OUTLINE DIMENSIONS

**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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