

## 1.2A, 600V - 1000V Surface Mount Rectifiers

### FEATURES

- Ideal for automated placement
- Compact package size
- High surge current capability
- 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 definition
- AEC-Q101 qualified



**SOD123HE**



### MECHANICAL DATA

**Case:** SOD123HE

Molding compound, UL flammability classification rating 94V-0

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

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

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

Meet JESD 201 class 2 whisker test

**Polarity:** Indicated by cathode band

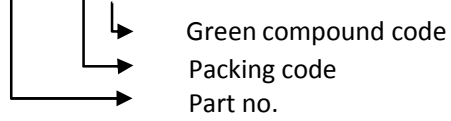
**Weight:** 0.022g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted) |                                      |              |       |       |      |
|--|--------------------------------------|--------------|-------|-------|------|
| PARAMETER  | SYMBOL                               | S1JLS        | S1KLS | S1MLS | UNIT |
| Marking code   |                                      | 1JLS         | 1KLS  | 1MLS  |      |
| 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<br>T <sub>J</sub> =125 °C           | I <sub>R</sub>                       | 5<br>150     |       |       | μA   |
| Typical thermal resistance   | R <sub>θJC</sub><br>R <sub>θJA</sub> | 26<br>74     |       |       | °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

ORDER INFORMATION (EXAMPLE)

**S1JLS RVG**



RATINGS AND CHARACTERISTICS CURVES

( $T_A=25^\circ\text{C}$  unless otherwise noted)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

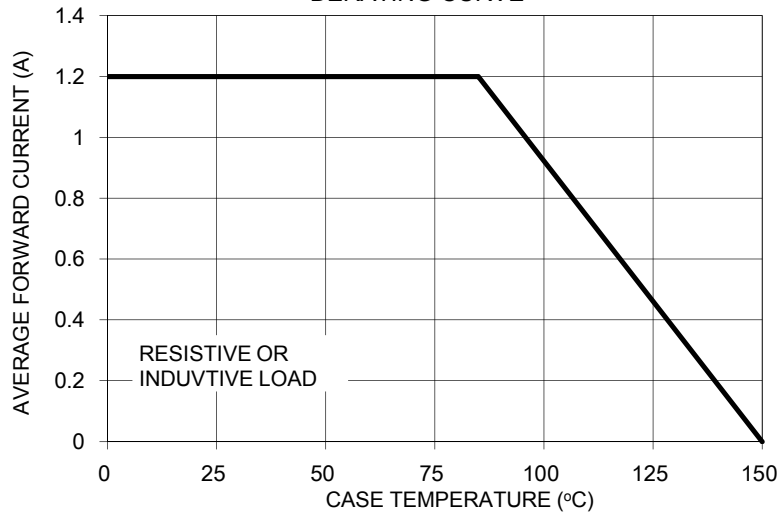


FIG. 2- TYPICAL REVERSE CHARACTERISTICS

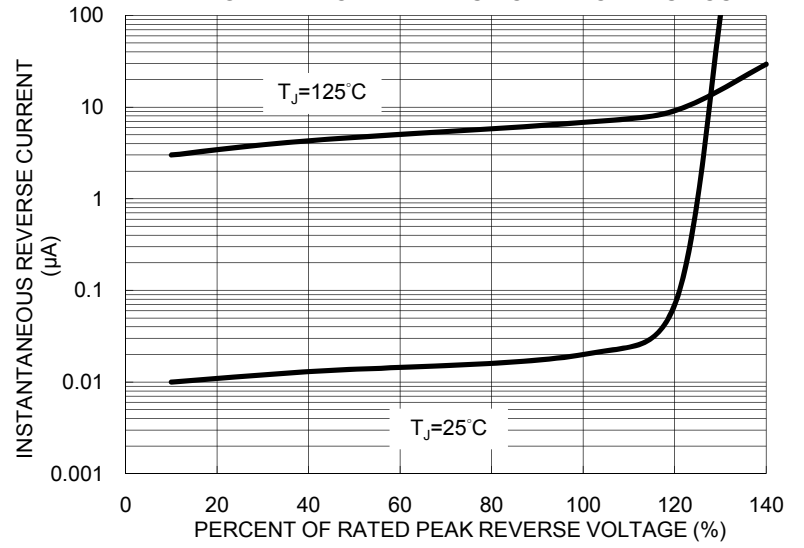


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

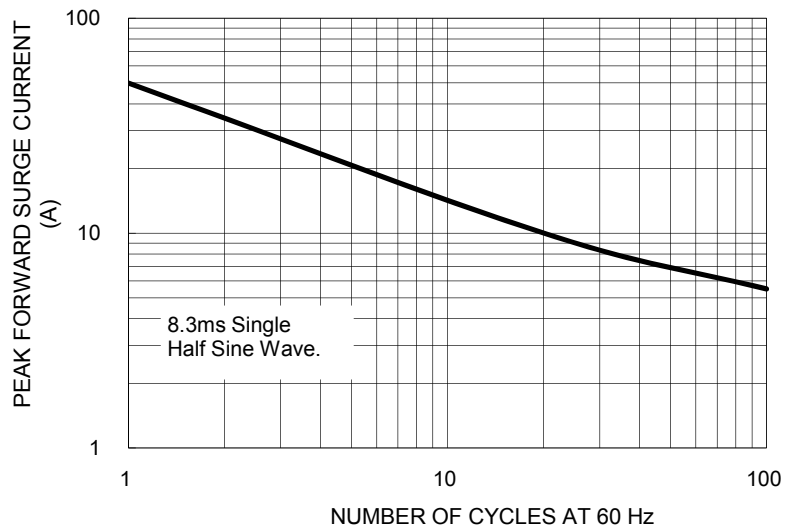


FIG. 4- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

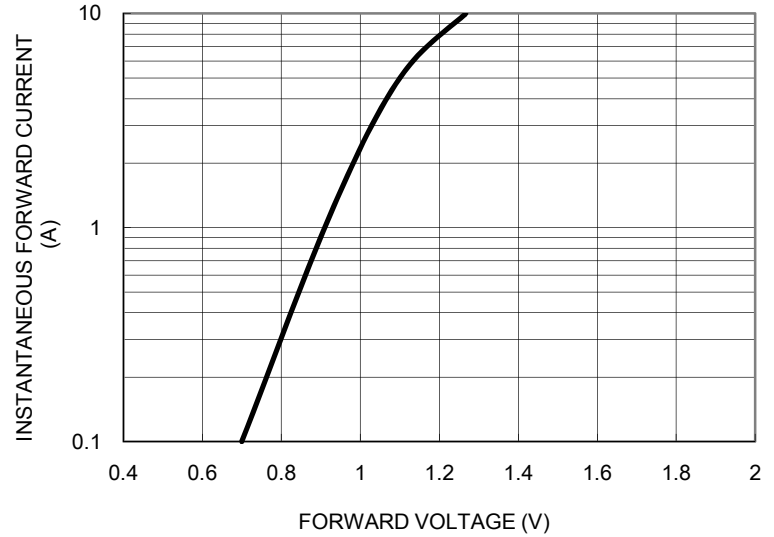
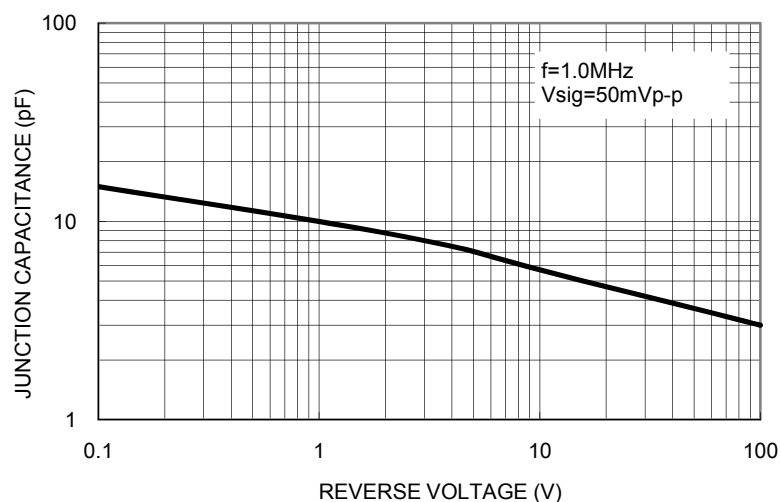
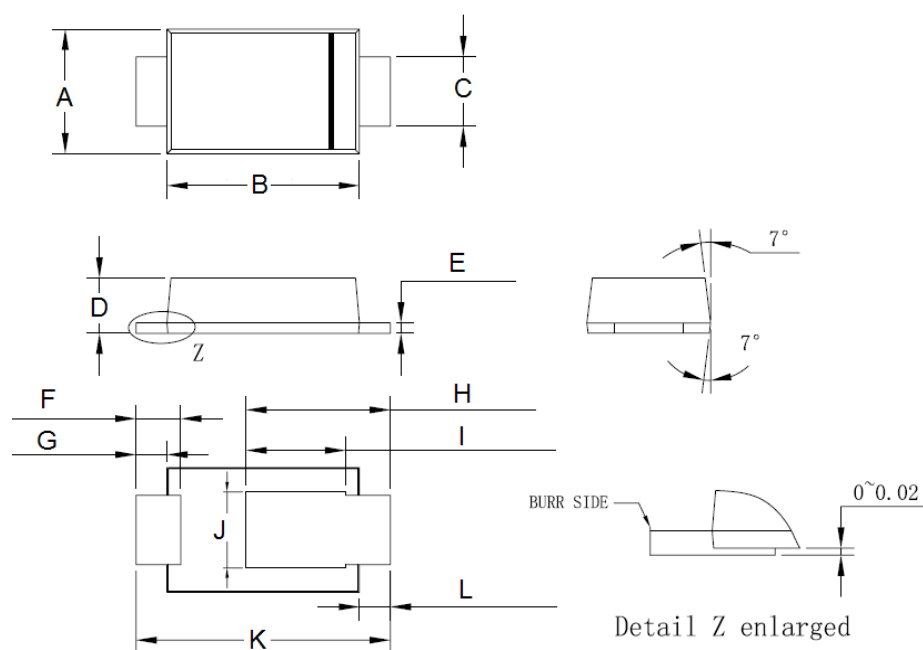


FIG. 5- TYPICAL JUNCTION CAPACITANCE



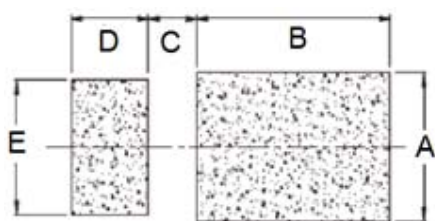
PACKAGE OUTLINE DIMENSIONS

**SOD123HE**



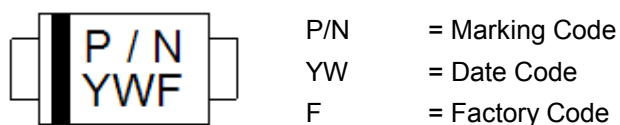
| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 1.65      | 1.95 | 0.065       | 0.077 |
| B    | 2.60      | 3.00 | 0.102       | 0.118 |
| C    | 0.85      | 1.15 | 0.033       | 0.045 |
| 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



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