

## Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Fast Switching Time
- Low Reverse Capacitance
- Surface Mount Package Ideally Suited for Automated Insertion
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

## Mechanical Data

- Package: SOD123
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band
- Weight: 0.01 grams (Approximate)

SOD123



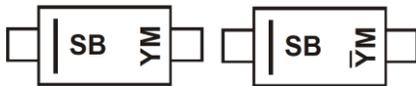
Top View

## Ordering Information (Note 4)

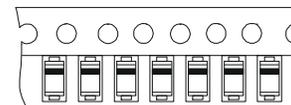
| Part Number | Package | Packing |               |
|-------------|---------|---------|---------------|
|             |         | Qty.    | Carrier       |
| 1N6263W-7-F | SOD123  | 3000    | Tape and Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



SB = Product Type Marking Code  
 YM &  $\bar{Y}M$  = Date Code Marking  
 Y &  $\bar{Y}$  = Year (ex: J = 2022)  
 M = Month (ex: 9 = September)



### Date Code Key

| Year  | 2005 | .... | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code  | S    | .... | J    | K    | L    | M    | N    | O    | P    | R    | S    | T    |
| Month | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| Code  | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | O    | N    | D    |

### Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                            | Symbol              | Value      | Unit |    |
|-------------------------------------------|---------------------|------------|------|----|
| Peak Repetitive Reverse Voltage           | V <sub>RRM</sub>    | 60         | V    |    |
| Working Peak Reverse Voltage              | V <sub>RWM</sub>    |            |      |    |
| DC Blocking Voltage                       | V <sub>R</sub>      |            |      |    |
| RMS Reverse Voltage                       | V <sub>R(RMS)</sub> | 42         | V    |    |
| Forward Continuous Current                | I <sub>F</sub>      | 15         | mA   |    |
| Non-Repetitive Peak Forward Surge Current | I <sub>FSM</sub>    | @ t ≤ 1.0s | 50   | mA |
|                                           |                     | @ t = 10ms | 2.0  | A  |

### Thermal Characteristics

| Characteristic                                       | Symbol           | Value       | Unit |
|------------------------------------------------------|------------------|-------------|------|
| Power Dissipation (Note 5)                           | P <sub>D</sub>   | 333         | mW   |
| Thermal Resistance, Junction to Ambient Air (Note 5) | R <sub>θJA</sub> | 300         | °C/W |
| Operating Temperature Range                          | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range                            | T <sub>STG</sub> | -55 to +150 | °C   |

### Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                     | Symbol             | Min | Typ | Max  | Unit | Test Condition                                                                                            |
|------------------------------------|--------------------|-----|-----|------|------|-----------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage (Note 6) | V <sub>(BR)R</sub> | 60  | —   | —    | V    | I <sub>R</sub> = 10μA                                                                                     |
| Reverse Leakage Current (Note 6)   | I <sub>RM</sub>    | —   | —   | 200  | nA   | V <sub>R</sub> = 50V                                                                                      |
| Forward Voltage Drop               | V <sub>FM</sub>    | —   | —   | 0.41 | V    | I <sub>F</sub> = 1.0mA                                                                                    |
|                                    |                    | —   | —   | 1.0  |      | I <sub>F</sub> = 15mA                                                                                     |
| Total Capacitance                  | C <sub>T</sub>     | —   | —   | 2.2  | pF   | V <sub>R</sub> = 0V, f = 1.0MHz                                                                           |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | —   | 1.0  | ns   | I <sub>F</sub> = I <sub>R</sub> = 5.0mA<br>I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω |

Notes: 5. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.  
6. Short duration pulse test used to minimize self-heating effect.

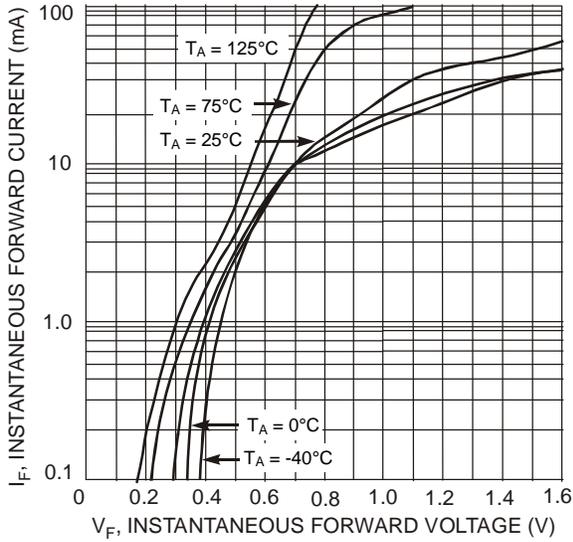


Fig. 1 Typical Forward Characteristics

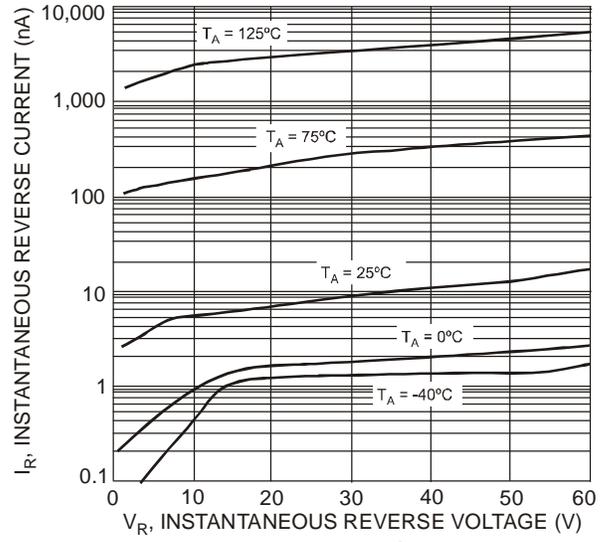


Fig. 2 Typical Reverse Characteristics

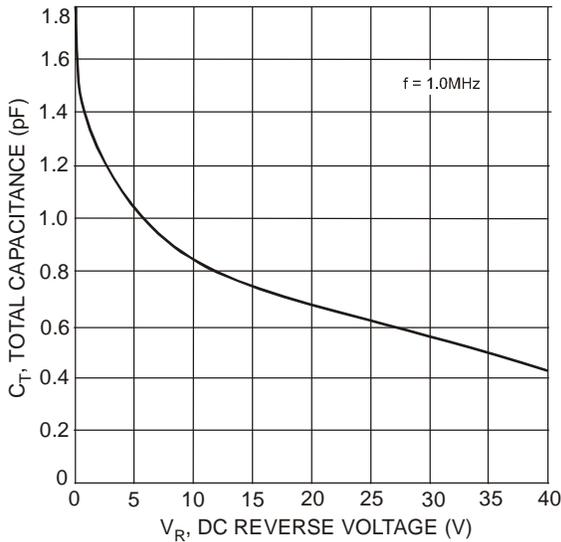


Fig. 3 Total Capacitance vs. Reverse Current

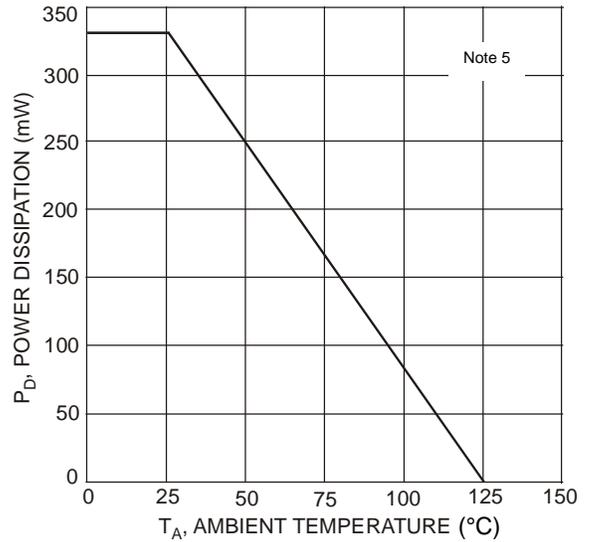
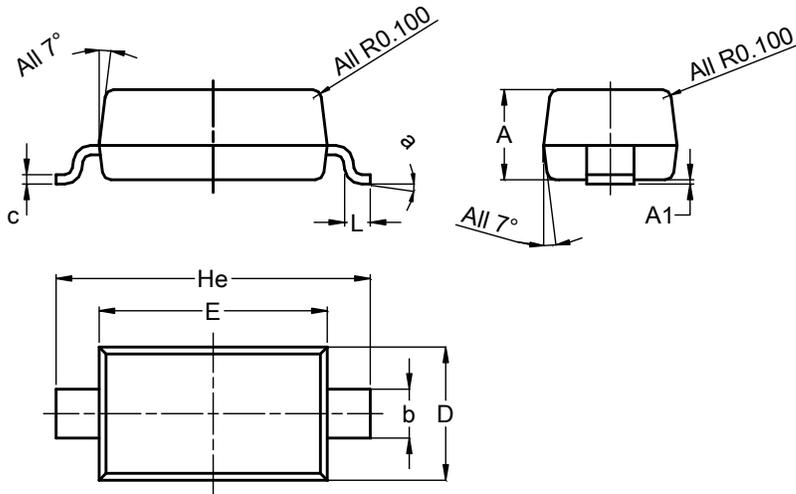


Fig. 4 Power Derating Curve

**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**SOD123**

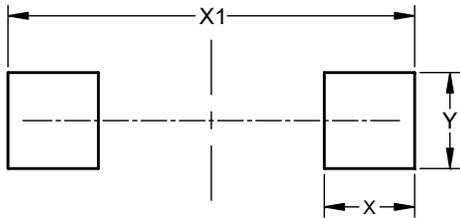


| SOD123               |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 1.00 | 1.35 | 1.05 |
| A1                   | 0.00 | 0.10 | 0.05 |
| b                    | 0.52 | 0.62 | 0.57 |
| c                    | 0.10 | 0.15 | 0.11 |
| D                    | 1.40 | 1.70 | 1.55 |
| E                    | 2.55 | 2.85 | 2.65 |
| He                   | 3.55 | 3.85 | 3.65 |
| L                    | 0.25 | 0.40 | 0.30 |
| a                    | 0°   | 8°   | --   |
| All Dimensions in mm |      |      |      |

**Suggested Pad Layout**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**SOD123**



| Dimensions | Value (in mm) |
|------------|---------------|
| X          | 0.900         |
| X1         | 4.050         |
| Y          | 0.950         |

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