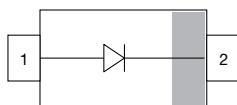


## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- AEC-Q101 qualified available (part number on request)
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level (MSL) 1
- Base P/N-G3-green, commercial grade
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### LINKS TO ADDITIONAL RESOURCES



### MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 10.6 mg

**Packaging codes / options:**

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

### PARTS TABLE

| PART      | ORDERING CODE | AEC-Q101 QUALIFIED | TYPE MARKING | CIRCUIT CONFIGURATION | TAPED UNITS PER REEL              | MINIMUM ORDER QUANTITY |
|-----------|---------------|--------------------|--------------|-----------------------|-----------------------------------|------------------------|
| 1N4448W-G | 1N4448W-G3-08 | no                 | AJ           | Single                | 3000<br>(8 mm tape on 7" reel)    | 15 000                 |
|           | 1N4448W-G3-18 | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |

### PACKAGE

| PACKAGE NAME | WEIGHT  | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL     | SOLDERING CONDITIONS        |
|--------------|---------|--------------------------------------|--------------------------------|-----------------------------|
| SOD -123     | 10.6 mg | UL 94 V-0                            | MSL 1<br>(according J-STD-020) | Peak temperature max. 260°C |

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                                                                            | TEST CONDITION                                          | SYMBOL      | VALUE | UNIT |
|--------------------------------------------------------------------------------------|---------------------------------------------------------|-------------|-------|------|
| Reverse voltage                                                                      |                                                         | $V_R$       | 75    | V    |
| Repetitive peak reverse voltage                                                      |                                                         | $V_{RRM}$   | 100   | V    |
| Continuous forward current <sup>(1)</sup>                                            |                                                         | $I_F$       | 300   | mA   |
| Average rectified current half wave rectification with resistive load <sup>(1)</sup> | $f \geq 50\text{ Hz}$                                   | $I_{F(AV)}$ | 250   | mA   |
| Surge current <sup>(1)</sup>                                                         | $t < 1\text{ s}$ and $T_j = 25\text{ }^{\circ}\text{C}$ | $I_{FSM}$   | 500   | mA   |
| Power dissipation <sup>(1)</sup>                                                     | On FR-4 board with recommended soldering footprint      | $P_{tot}$   | 280   | mW   |
|                                                                                      | Infinite heatsink                                       |             | 380   | mW   |

#### Note

<sup>(1)</sup> Infinite heatsink

**THERMAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                                  | TEST CONDITION                                                              | SYMBOL     | VALUE       | UNIT               |
|--------------------------------------------|-----------------------------------------------------------------------------|------------|-------------|--------------------|
| Thermal resistance junction to ambient air | According to JEDEC® 51-3 on FR-4 board with recommended soldering footprint | $R_{thJA}$ | 440         | K/W                |
| Thermal resistance junction to lead        | Infinite heatsink                                                           | $R_{thJL}$ | 330         | K/W                |
| Junction temperature                       |                                                                             | $T_j$      | 150         | $^{\circ}\text{C}$ |
| Storage temperature                        |                                                                             | $T_{stg}$  | -65 to +150 | $^{\circ}\text{C}$ |
| Operating temperature                      |                                                                             | $T_{op}$   | -55 to +150 | $^{\circ}\text{C}$ |

**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER             | TEST CONDITION                                                                                 | SYMBOL   | MIN. | TYP. | MAX. | UNIT          |
|-----------------------|------------------------------------------------------------------------------------------------|----------|------|------|------|---------------|
| Forward voltage       | $I_F = 100\text{ mA}$                                                                          | $V_F$    |      |      | 1    | V             |
|                       | $I_F = 5\text{ mA}$                                                                            | $V_F$    | 0.62 |      | 0.72 | V             |
| Leakage current       | $V_R = 20\text{ V}$                                                                            | $I_R$    |      |      | 25   | nA            |
|                       | $V_R = 75\text{ V}$                                                                            | $I_R$    |      |      | 2    | $\mu\text{A}$ |
|                       | $V_R = 20\text{ V}$ , $T_J = 150\text{ }^{\circ}\text{C}$                                      | $I_R$    |      |      | 50   | $\mu\text{A}$ |
| Capacitance           | $V_F = V_R = 0\text{ V}$                                                                       |          |      |      | 1.5  | pF            |
| Reverse recovery time | $I_F = 10\text{ mA}$ , $i_R = 1\text{ mA}$ ,<br>$V_R = 6\text{ V}$ , $R_L = 100\text{ }\Omega$ | $t_{rr}$ |      |      | 4    | ns            |

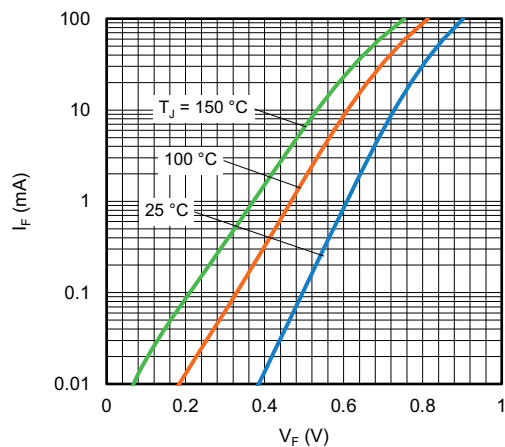
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Typical Forward Current vs. Forward Voltage

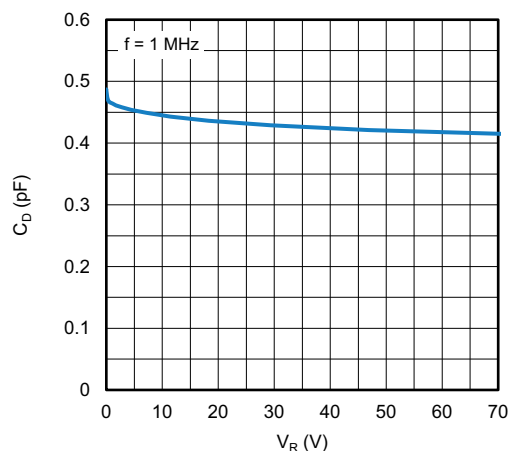


Fig. 3 - Typical Capacitance vs. Reverse Voltage

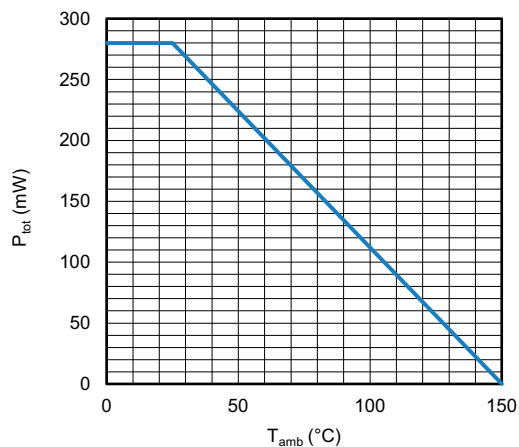


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

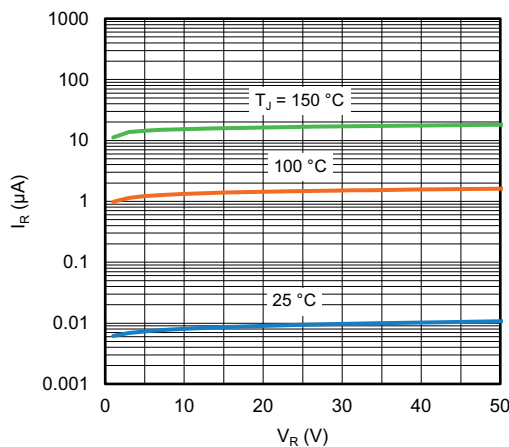
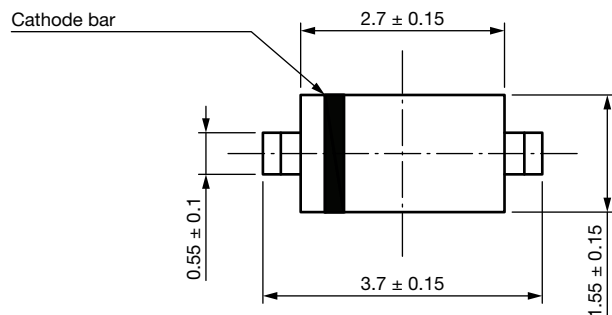
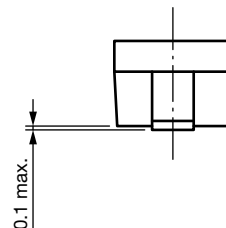
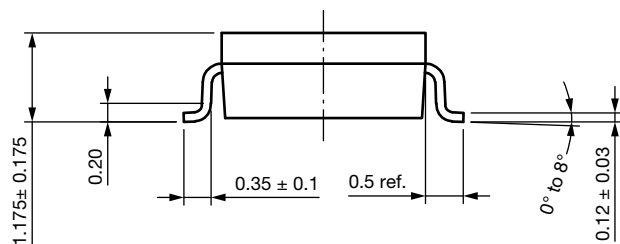


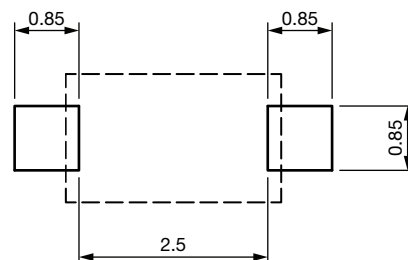
Fig. 4 - Typical Capacitance vs. Reverse Voltage



**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-123**



Foot print recommendation



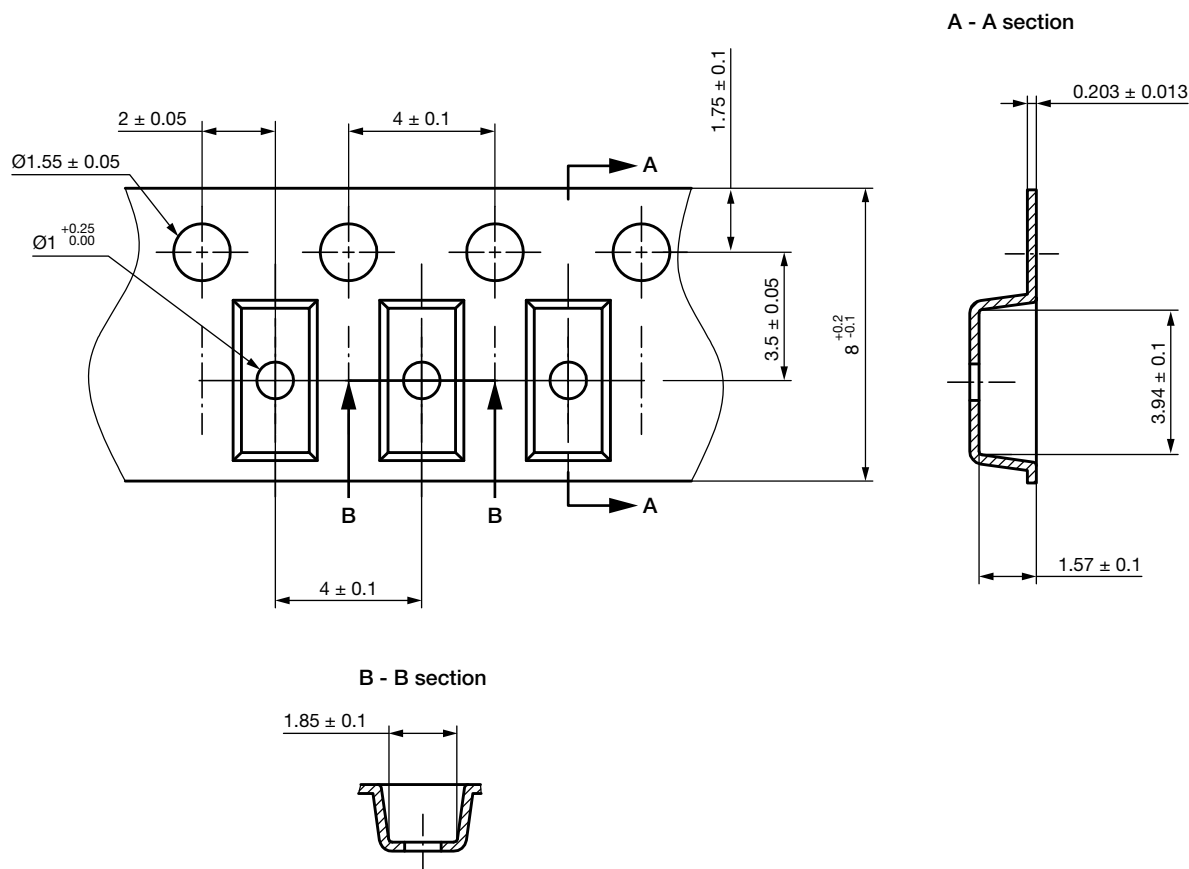
Rev. 01 - Date: 18. Jan. 2022

Document no.: S8-V-3910.01-003 (4)

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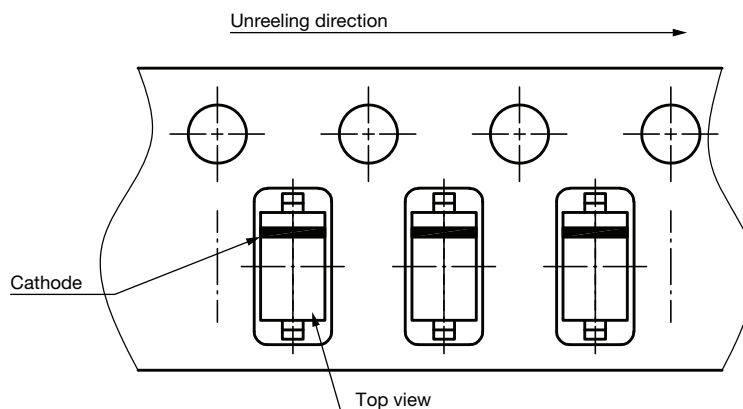
**CARRIER TAPE SOD-123**



Rev. 02 - Date: 21. Jan. 2014  
Document no.: S8-V-3717.10-002 (4)

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**ORIENTATION IN CARRIER TAPE SOD-123**



Rev. 02 - Date: 07. Nov. 2022  
Document no.: S8-V-3717.10-003 (4)

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