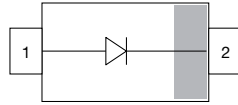


Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- AEC-Q101 qualified available
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3_A - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

 AUTOMOTIVE
GRADE
Available

RoHS
COMPLIANT

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 | 1N4448W-E3-08 | no | AJ | Single | 3000 (8 mm tape on 7" reel) | 15 000 |
| | 1N4448W-HE3_A-08 | yes | | | | |
| | 1N4448W-E3-18 | no | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | 1N4448W-HE3_A-18 | yes | | | | |

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

| ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °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 ⁽¹⁾ | | I _F | 300 | mA | |
| Average rectified current half wave rectification with resistive load ⁽¹⁾ | f ≥ 50 Hz | I _{F(AV)} | 250 | mA | |
| Surge current ⁽¹⁾ | t < 1 s and T _j = 25 °C | I _{FSM} | 500 | mA | |
| Power dissipation ⁽¹⁾ | On FR-4 board with recommended soldering footprint | P _{tot} | 280 | mW | |
| | Infinite heatsink | | 380 | mW | |

Note
⁽¹⁾ 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 | μA |
| | $V_R = 20\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$ | I_R | | | 50 | μA |
| Capacitance | $V_F = V_R = 0\text{ V}$ | | | | 1.5 | pF |
| Reverse recovery time | $I_F = 10\text{ mA}, i_R = 1\text{ mA}, V_R = 6\text{ V}, R_L = 100\text{ }\Omega$ | t_{rr} | | | 4 | ns |



TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

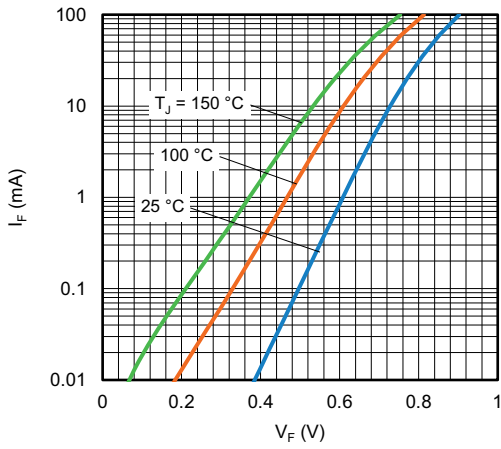


Fig. 1 - Typical Forward Current vs. Forward Voltage

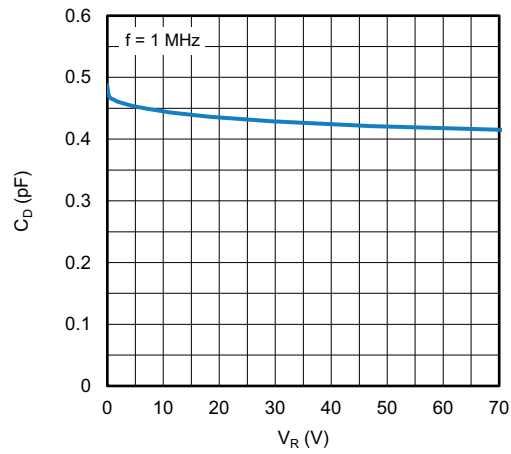


Fig. 3 - Typical Capacitance vs. Reverse Voltage

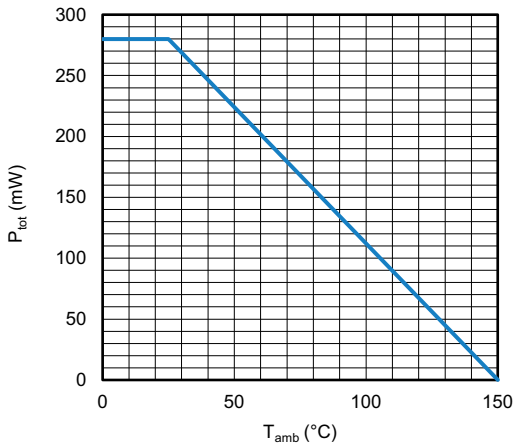


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

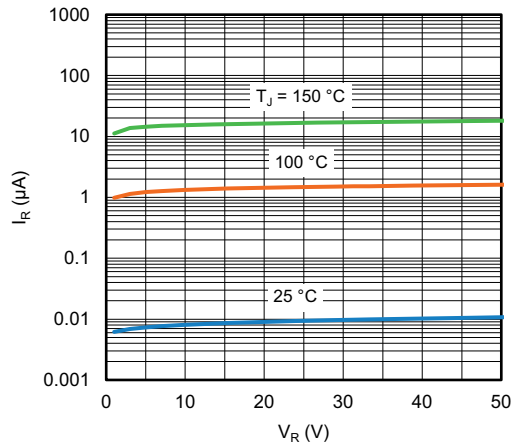
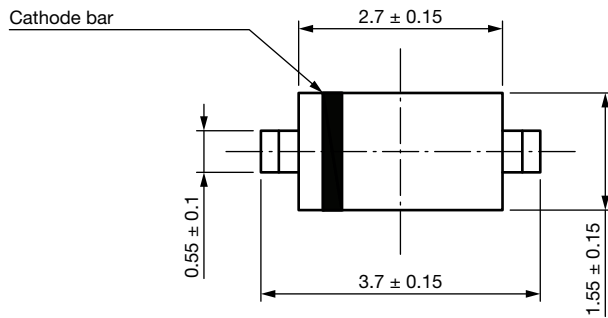
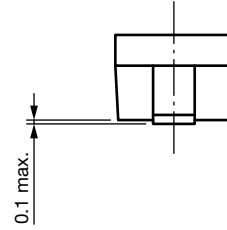
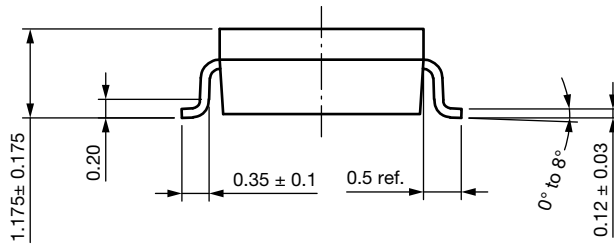


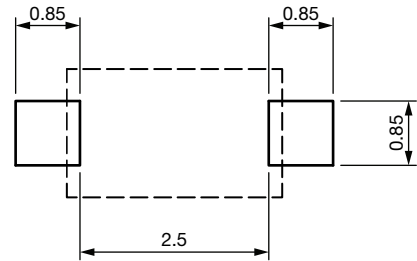
Fig. 4 - Typical Capacitance vs. Reverse Voltage



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



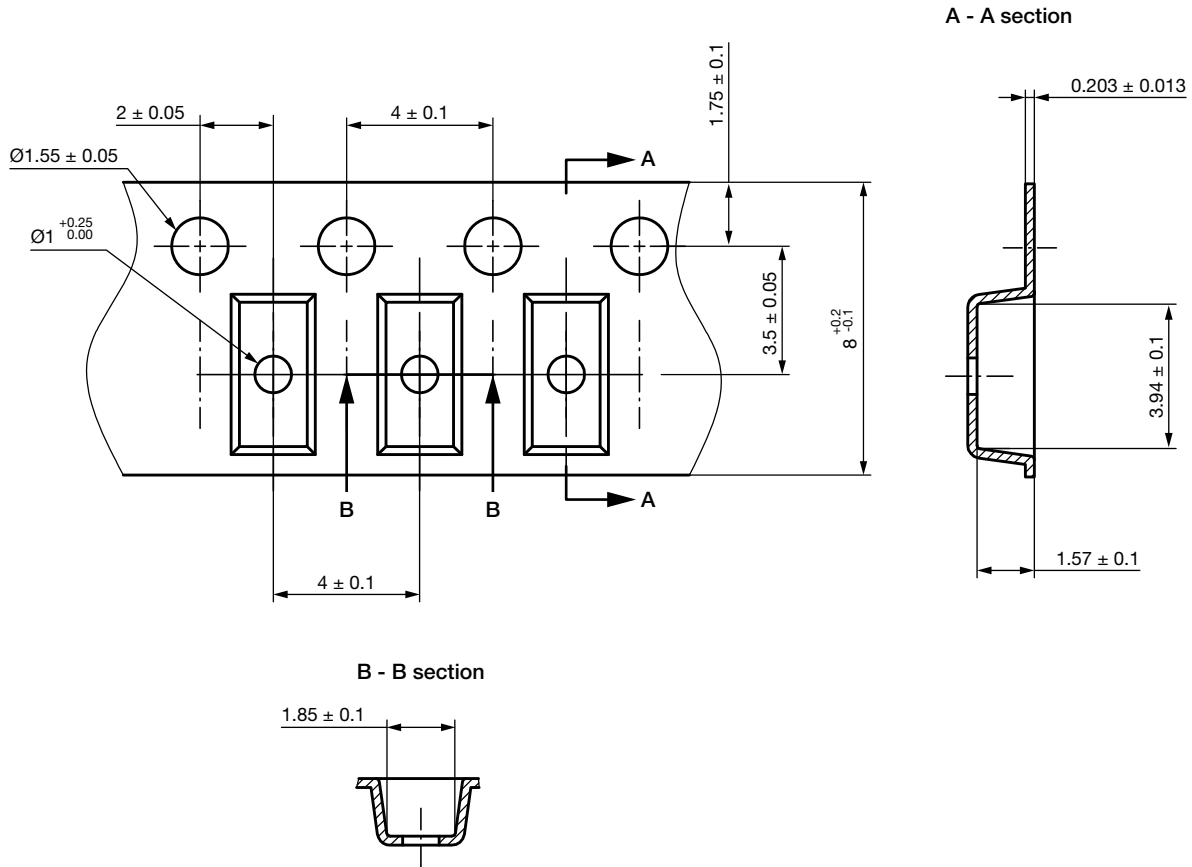
Foot print recommendation



Rev. 01 - Date: 18. Jan. 2022
Document no.: S8-V-3910.01-003 (4)

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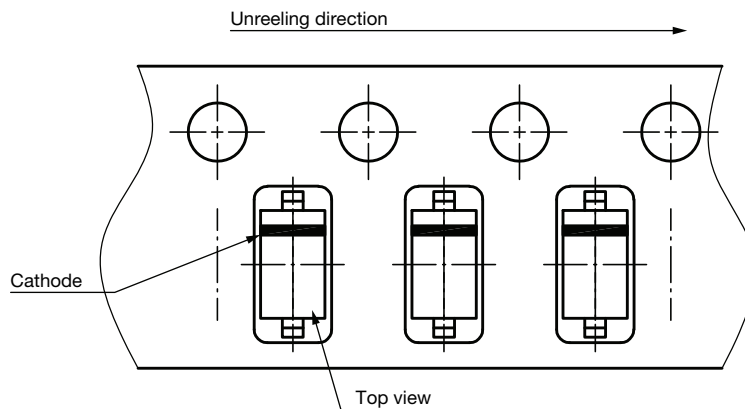
CARRIER TAPE SOD-123



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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