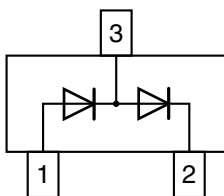
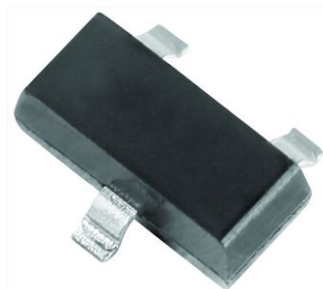


Dual In-Series Small Signal High Voltage Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Fast switching dual in-series diode, especially suited for applications requiring high voltage capability
- AEC-Q101 qualified available
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level (MSL) 1
- 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



3D Models



Models



Marking



Parametric Search



Order Samples

MECHANICAL DATA

Case: SOT-23

Weight: approx. 9.2 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 |
|----------|-------------------|--------------------|--------------|-----------------------|-----------------------------------|------------------------|
| GSD2004S | GSD2004S-E3-08 | no | DB7 | Dual serial | 3 000 (8 mm tape on 7" reel) | 15 000 |
| | GSD2004S-HE3_A-08 | yes | | | | |
| | GSD2004S-E3-18 | no | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | GSD2004S-HE3_A-18 | yes | | | | |

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

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|--|--|-----------|-------|------|
| Continuous reverse voltage | | V_R | 240 | V |
| Peak repetitive reverse voltage | | V_{RRM} | 300 | V |
| Forward current (continuous) ⁽¹⁾ | | I_F | 350 | mA |
| Peak repetitive forward current ⁽¹⁾ | | I_{FRM} | 625 | mA |
| Non-repetitive peak forward current ⁽¹⁾ | $t_p = 1 \mu\text{s}$ | I_{FSM} | 4.0 | A |
| | $t_p = 1 \text{ s}$ | I_{FSM} | 1.0 | A |
| Power dissipation | on FR-4 board with recommended soldering footprint | P_{tot} | 300 | mW |
| | Infinite heatsink | | 500 | mW |

Note

⁽¹⁾ Infinite heatsink

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

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|--|---|------------|-------------|--------------------|
| Typical thermal resistance junction to ambient air | according to JEDEC® 51-3 on FR-4 board with recommended soldering footprint | R_{thJA} | 420 | K/W |
| Thermal resistance junction to lead | Infinite heatsink | R_{thJL} | 250 | K/W |
| Junction temperature | | T_j | 150 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | -65 to +150 | $^{\circ}\text{C}$ |
| Operating temperature range | | 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 |
| Reverse breakdown voltage | $I_R = 100\text{ }\mu\text{A}$ | V_{BR} | 300 | | | V |
| Leakage current | $V_R = 240\text{ V}$ | I_R | | | 100 | nA |
| | $V_R = 240\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$ | I_R | | | 100 | μA |
| Forward voltage | $I_F = 20\text{ mA}$ | V_F | | 0.83 | 0.87 | V |
| | $I_F = 100\text{ mA}$ | V_F | | | 1.00 | V |
| Diode capacitance | $V_F = V_R = 0, f = 1\text{ MHz}$ | C_D | | | 2 | pF |
| Reverse recovery time | $I_F = I_R = 30\text{ mA}, i_R = 3.0\text{ mA}, R_L = 100\text{ }\Omega$ | t_{rr} | | | 50 | ns |

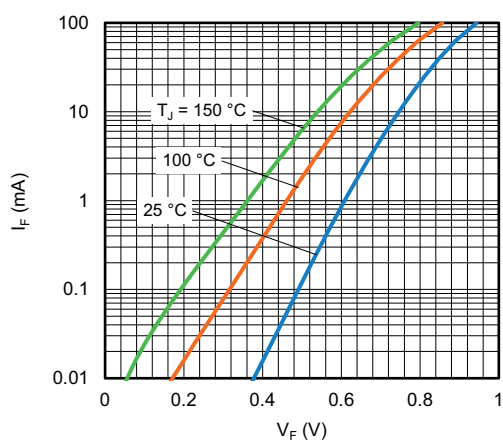
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

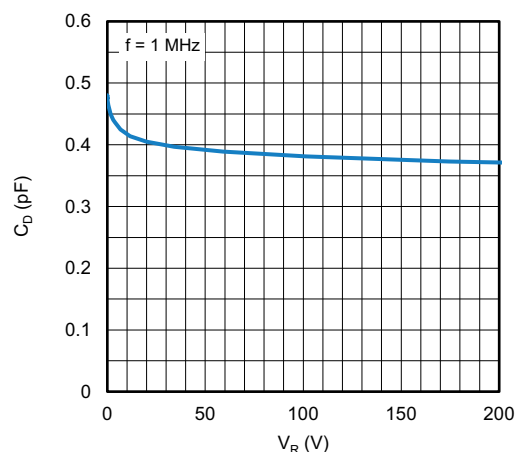


Fig. 3 - Typical Capacitance vs. Reverse Voltage

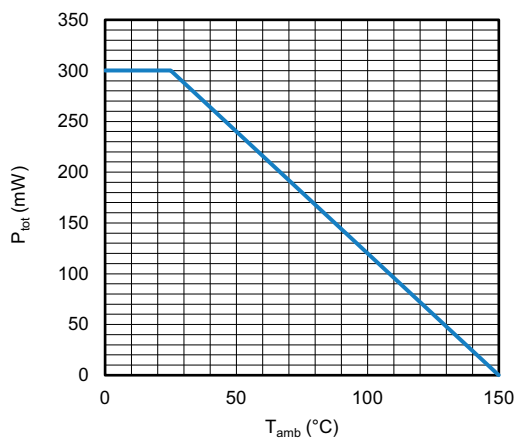


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

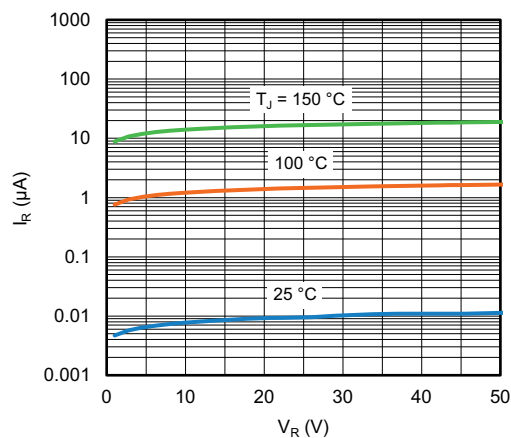
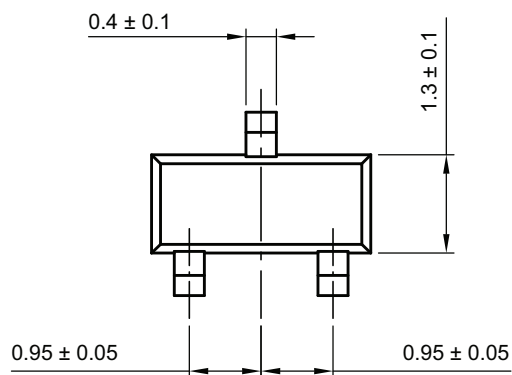
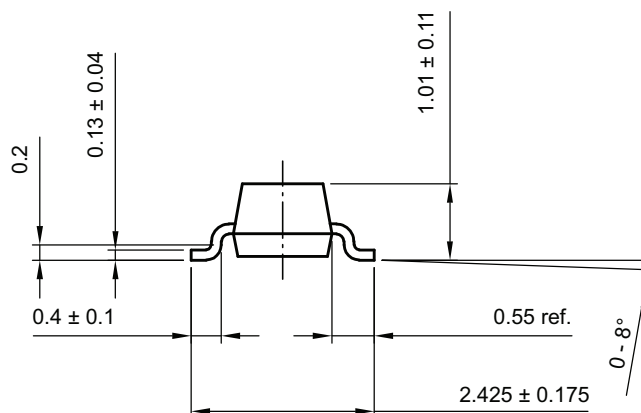
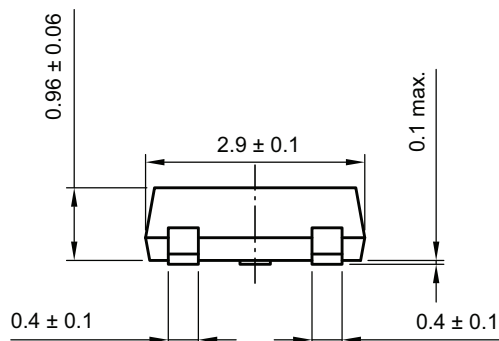


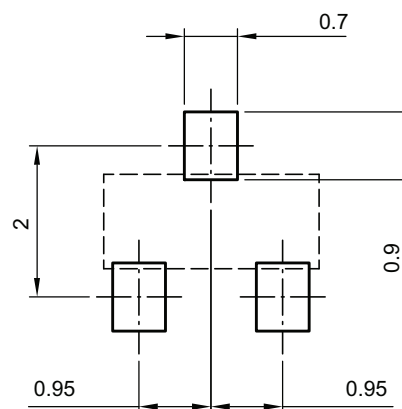
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



PACKAGE DIMENSIONS in millimeters: **SOT-23**



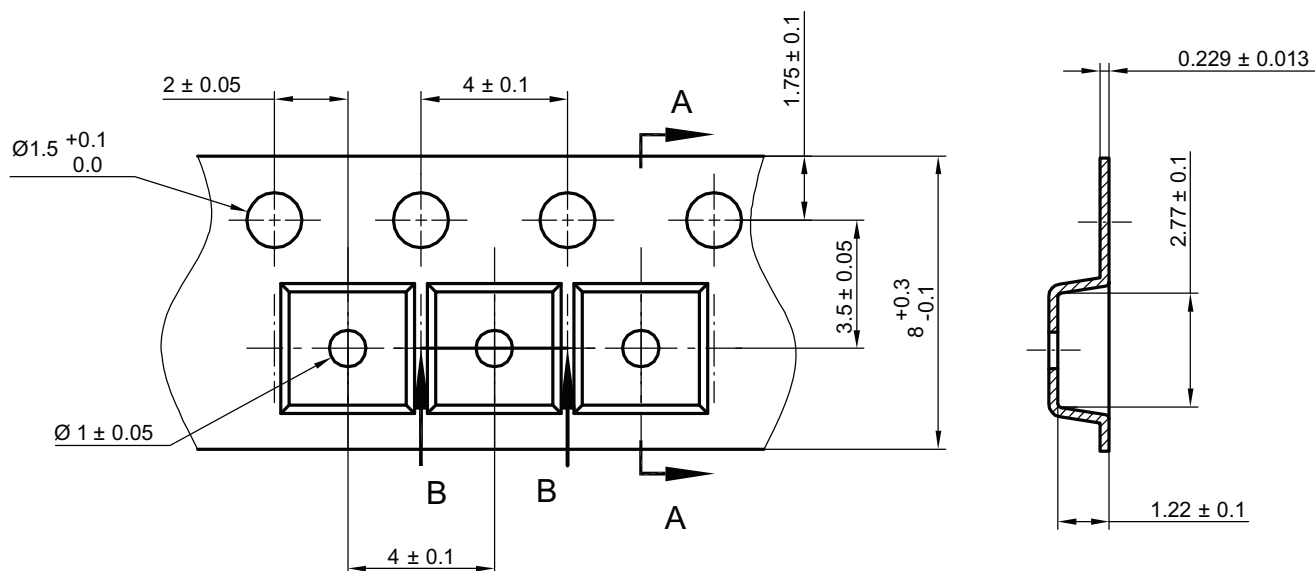
footprint recommendation:



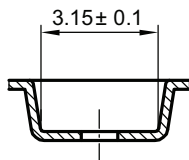
Created - Date: 18-Oct-2021
Rev. 01 - Date: 18-Jan-2022
S8-V-3929.01-009 (4)



CARRIER TAPE SOT-23

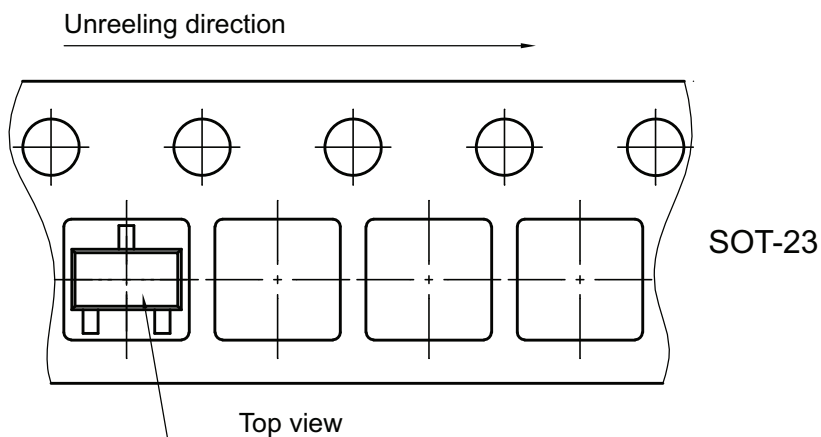


B-B Section



Created Date: 04-Feb-2010
Rev. Date: 07-Feb-2022
S8-V-3929.01-005 (4)

ORIENTATION IN CARRIER TAPE SOT-23



Created Date: 04-Feb-2010
Rev. Date: 07-Nov-2022
S8-V-3929.01-005 (4)



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