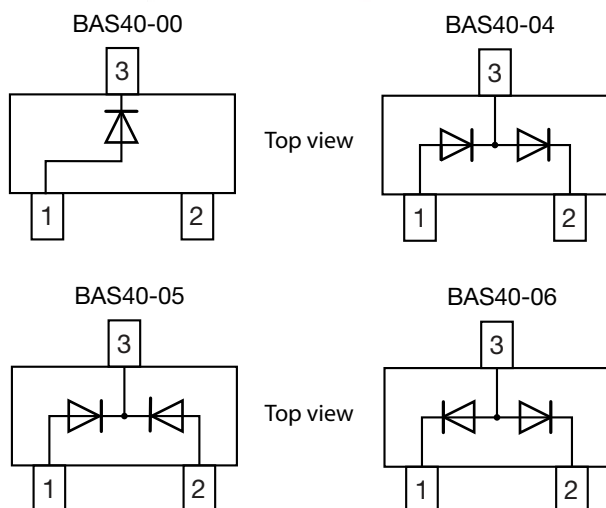
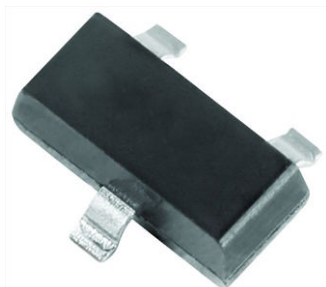


Small Signal Schottky Diodes, Single and Dual



FEATURES

- These diodes feature very low turn-on voltage and fast switching
- These devices are protected by a PN junction guarding against excessive voltage, such as electrostatic discharges
- 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 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE
GRADE
Available



RoHS
COMPLIANT

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

LINKS TO ADDITIONAL RESOURCES



3D Models



Models



Marking



Parametric Search



Order Samples

| PARTS TABLE | | | | | | |
|-------------|-------------------|--------------------|--------------|-----------------------|-----------------------------------|------------------------|
| PART | ORDERING CODE | AEC-Q101 QUALIFIED | TYPE MARKING | CIRCUIT CONFIGURATION | TAPED UNITS PER REEL | MINIMUM ORDER QUANTITY |
| BAS40-00 | BAS40-00-E3-08 | no | 43G | Single | 3 000 (8 mm tape on 7" reel) | 15 000 |
| | BAS40-00-HE3_A-08 | yes | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | BAS40-00-E3-18 | no | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | BAS40-00-HE3_A-18 | yes | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| BAS40-04 | BAS40-04-E3-08 | no | 44G | Dual serial | 3 000 (8 mm tape on 7" reel) | 15 000 |
| | BAS40-04-HE3_A-08 | yes | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | BAS40-04-E3-18 | no | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | BAS40-04-HE3_A-18 | yes | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| BAS40-05 | BAS40-05-E3-08 | no | 45G | Common cathode | 3 000 (8 mm tape on 7" reel) | 15 000 |
| | BAS40-05-HE3_A-08 | yes | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | BAS40-05-E3-18 | no | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | BAS40-05-HE3_A-18 | yes | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| BAS40-06 | BAS40-06-E3-08 | no | 46G | Common anode | 3 000 (8 mm tape on 7" reel) | 15 000 |
| | BAS40-06-HE3_A-08 | yes | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | BAS40-06-E3-18 | no | | | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | BAS40-06-HE3_A-18 | yes | | | 10 000 (8 mm tape on 13" reel) | 10 000 |



| PACKAGE | | | | |
|--------------|--------|---|--------------------------------|------------------------------|
| PACKAGE NAME | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL | SOLDERING CONDITIONS |
| SOT-23 | 9.2 mg | UL 94 V-0 | MSL 1 (according J-STD-020) | Peak temperature max. 260 °C |

| ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ °C}$, unless otherwise specified) | | | | |
|---|--|---------------------------|-------|------|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
| Repetitive peak reverse voltage | | $V_{RRM} = V_{RWM} = V_R$ | 40 | V |
| Forward continuous current ⁽¹⁾ | | I_F | 200 | mA |
| Surge forward current ⁽¹⁾ | $t_p < 1\text{ s}$ | I_{FSM} | 600 | mA |
| Power dissipation | on FR-4 board with recommended soldering footprint | P_{tot} | 220 | mW |
| | Infinite heatsink | | 310 | mW |

Note⁽¹⁾ Infinite heatsink

| THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$, 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} | 460 | K/W |
| Thermal resistance junction lead | Infinite heatsink | R_{thJL} | 320 | K/W |
| Maximum junction temperature | | T_j | 125 | °C |
| Storage temperature range | | T_{stg} | -65 to +150 | °C |
| Operating temperature range | | T_{op} | -55 to +125 | °C |

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$, unless otherwise specified) | | | | | | |
|---|---|----------|------|------|------|------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Reverse breakdown voltage | $I_R = 10\text{ }\mu\text{A}$ (pulsed) | V_{BR} | 40 | | | V |
| Leakage current | $V_R = 30\text{ V}$ | I_R | | 20 | 100 | nA |
| Forward voltage | $I_F = 1\text{ mA}$ | V_F | | | 380 | mV |
| Forward voltage ⁽¹⁾ | $I_F = 50\text{ mA}$ | V_F | | | 1 | V |
| Diode capacitance | $V_R = 0$; $f = 1\text{ MHz}$ | C_D | | 2.5 | 5 | pF |
| Reverse recovery time | $I_F = I_R = 10\text{ mA}$, $i_R = 1\text{ mA}$, $R_L = 100\text{ }\Omega$ | t_{rr} | | | 5 | ns |

Note⁽¹⁾ Pulse test $t_p < 300\mu\text{s}$



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

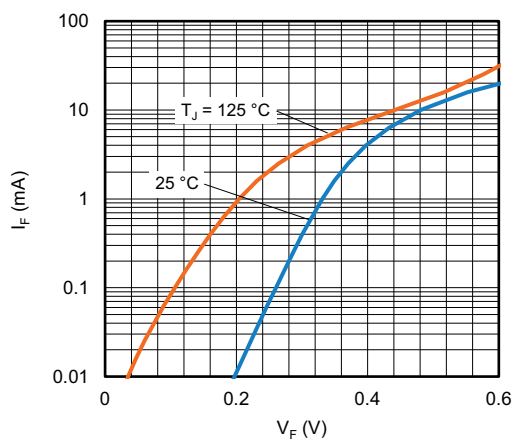


Fig. 1 - Typical Forward Current vs. Forward Voltage

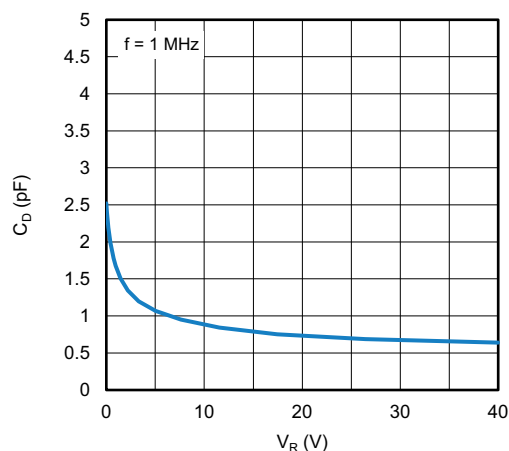


Fig. 3 - Typical Capacitance vs. Reverse Voltage

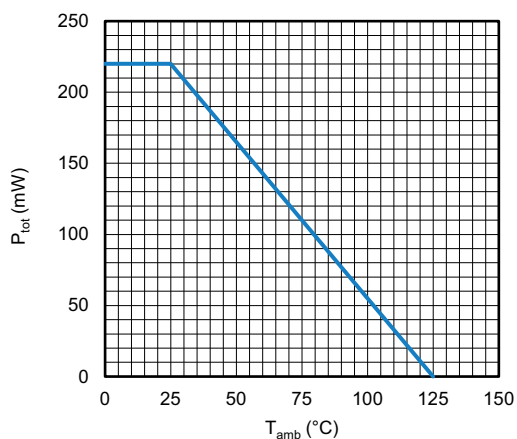


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

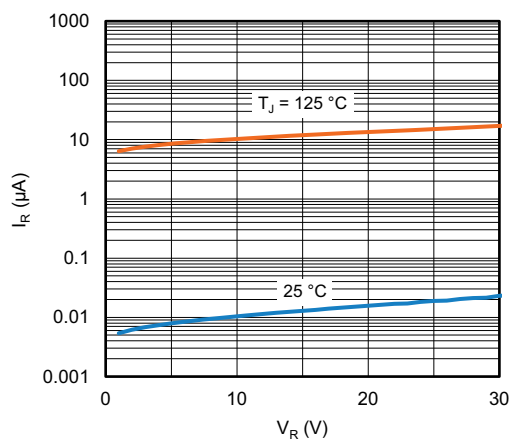
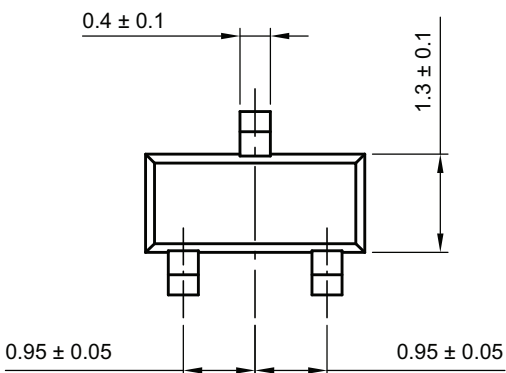
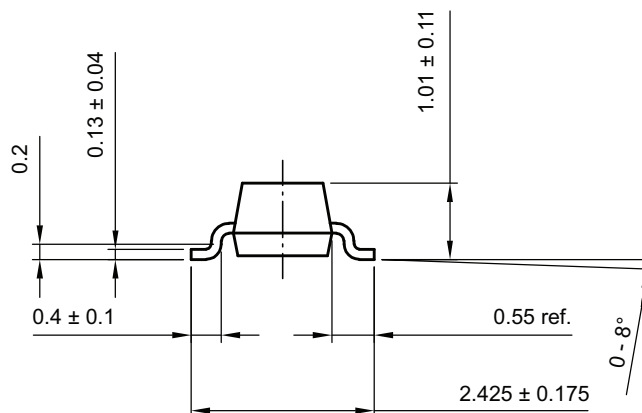
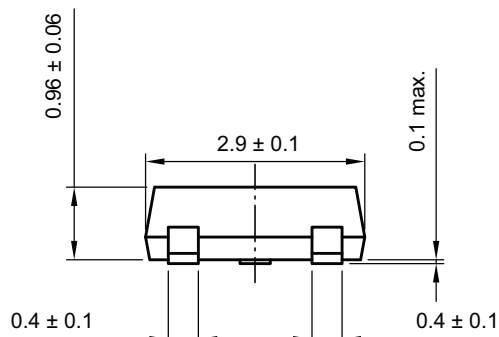


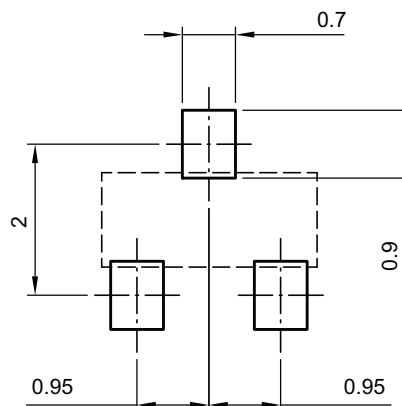
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



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



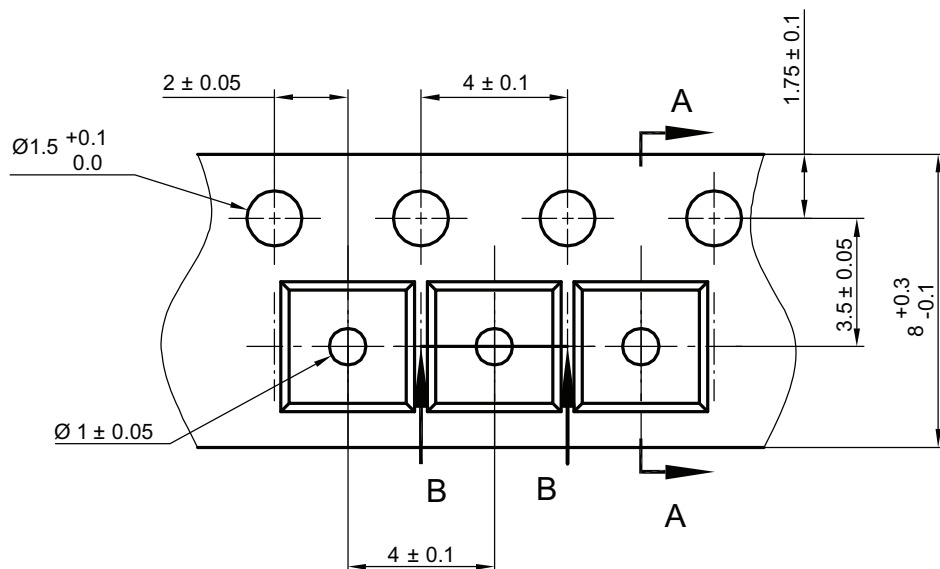
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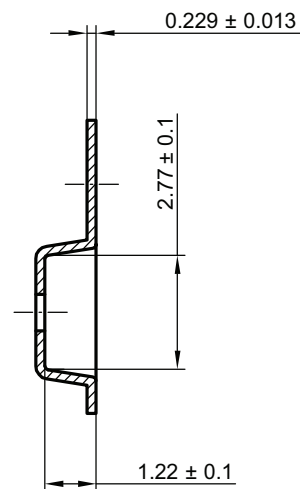
Created - Date: 18-Oct-2021
Rev. 01 - Date: 18-Jan-2022
S8-V-3929.01-009 (4)



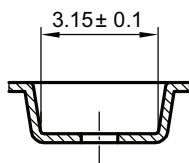
CARRIER TAPE SOT-23



A-A Section

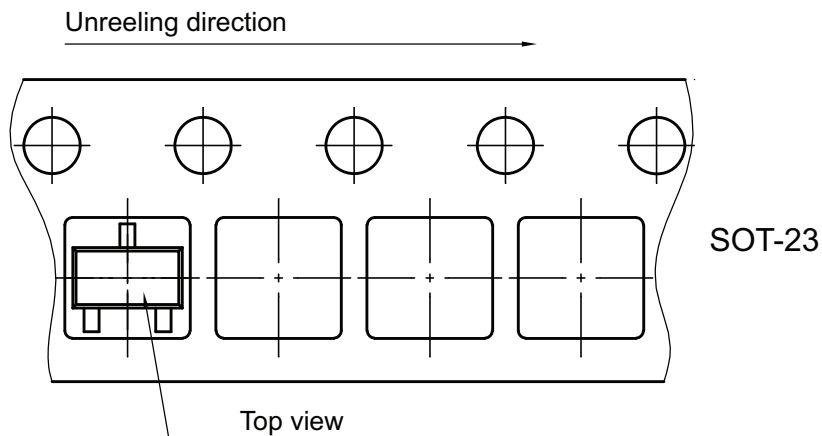


B-B Section



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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