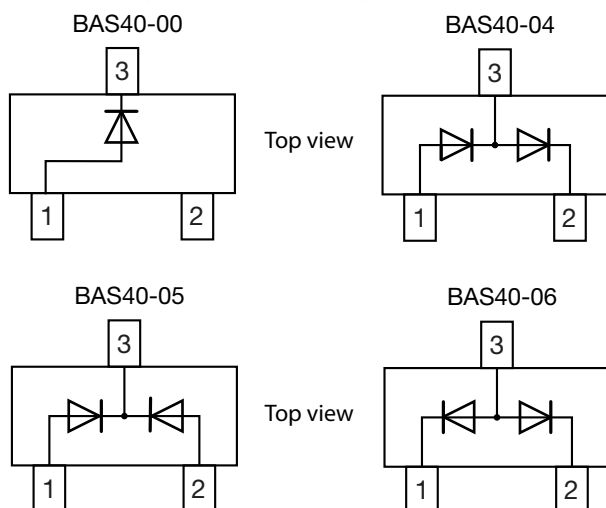
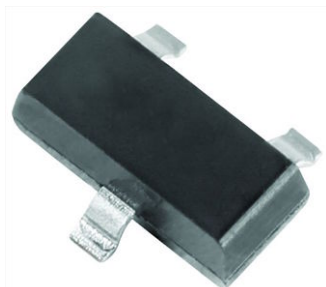


## Small Signal Schottky Diodes, Single and Dual



### 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](http://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<br>(8 mm tape on 7" reel)   | 15 000                 |
|             | BAS40-00-HE3_A-08 | yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|             | BAS40-00-E3-18    | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|             | BAS40-00-HE3_A-18 | yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
| BAS40-04    | BAS40-04-E3-08    | no                 | 44G          | Dual serial           | 3 000<br>(8 mm tape on 7" reel)   | 15 000                 |
|             | BAS40-04-HE3_A-08 | yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|             | BAS40-04-E3-18    | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|             | BAS40-04-HE3_A-18 | yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
| BAS40-05    | BAS40-05-E3-08    | no                 | 45G          | Common cathode        | 3 000<br>(8 mm tape on 7" reel)   | 15 000                 |
|             | BAS40-05-HE3_A-08 | yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|             | BAS40-05-E3-18    | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|             | BAS40-05-HE3_A-18 | yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
| BAS40-06    | BAS40-06-E3-08    | no                 | 46G          | Common anode          | 3 000<br>(8 mm tape on 7" reel)   | 15 000                 |
|             | BAS40-06-HE3_A-08 | yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|             | BAS40-06-E3-18    | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|             | BAS40-06-HE3_A-18 | yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |



| PACKAGE      |        |   |                                |                              |
|--------------|--------|---|--------------------------------|------------------------------|
| PACKAGE NAME | WEIGHT | MOLDING COMPOUND<br>FLAMMABILITY RATING | MOISTURE SENSITIVITY<br>LEVEL  | SOLDERING CONDITIONS         |
| SOT-23       | 9.2 mg | UL 94 V-0                               | MSL 1<br>(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 <sup>(1)</sup>   |  | $I_F$                     | 200   | mA   |
| Surge forward current <sup>(1)</sup>  | $t_p < 1\text{ s}$                                 | $I_{FSM}$                 | 600   | mA   |
| Power dissipation   | on FR-4 board with recommended soldering footprint | $P_{tot}$                 | 220   | mW   |
|   | Infinite heatsink                                  |                           | 310   | mW   |

**Note**<sup>(1)</sup> 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 <sup>(1)</sup>  | $I_F = 50\text{ mA}$  | $V_F$    |      |      | 1    | V    |
| Diode capacitance   | $V_R = 0$ ; $f = 1\text{ MHz}$  | $C_D$    |      | 2.5  | 5    | pF   |
| Reverse recovery time   | $I_F = I_R = 10\text{ mA}$ ,<br>$i_R = 1\text{ mA}$ , $R_L = 100\text{ }\Omega$ | $t_{rr}$ |      |      | 5    | ns   |

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



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

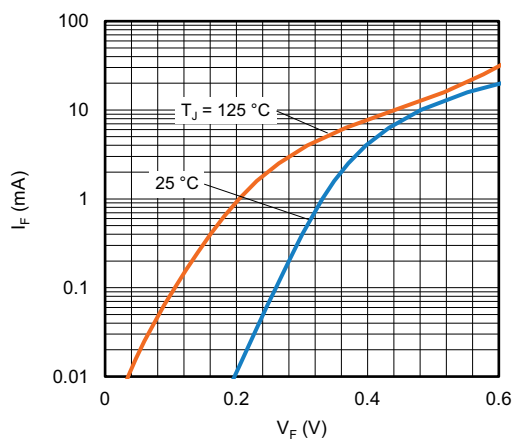


Fig. 1 - Typical Forward Current vs. Forward Voltage

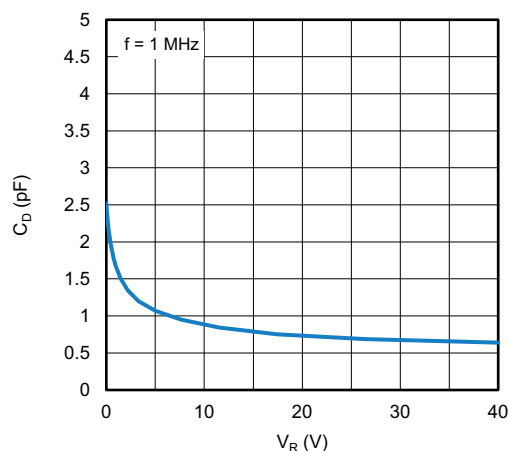


Fig. 3 - Typical Capacitance vs. Reverse Voltage

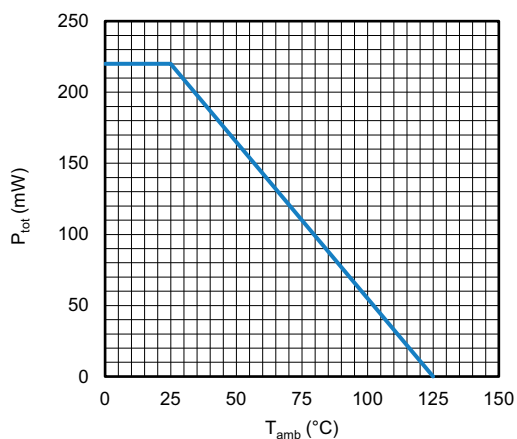


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

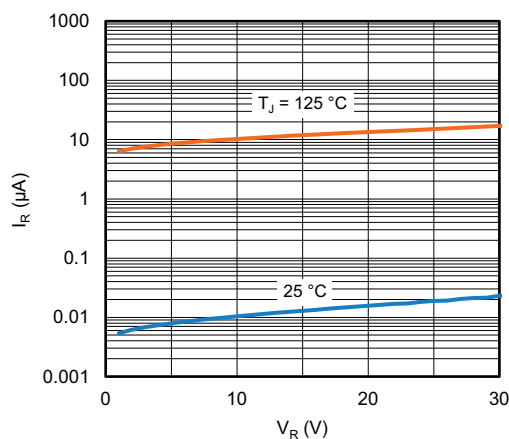
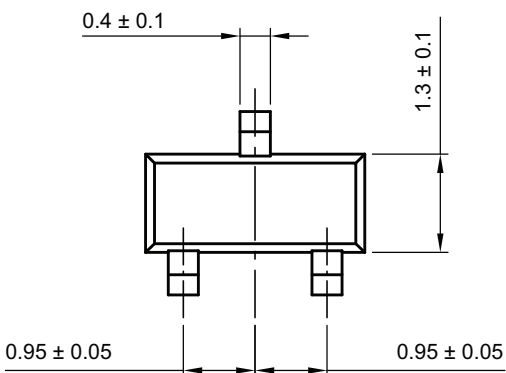
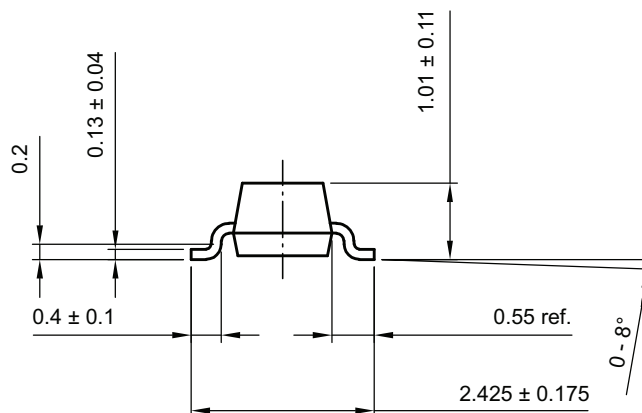
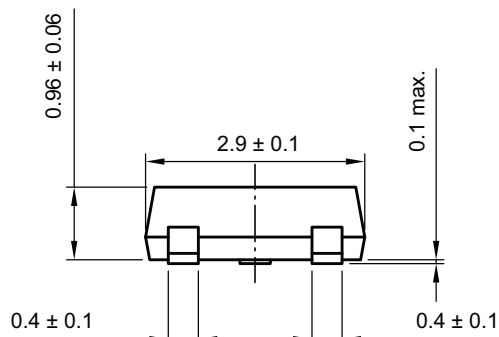


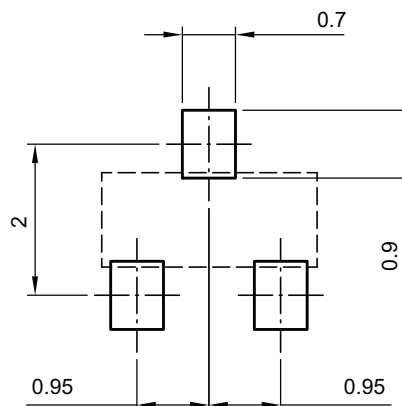
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



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



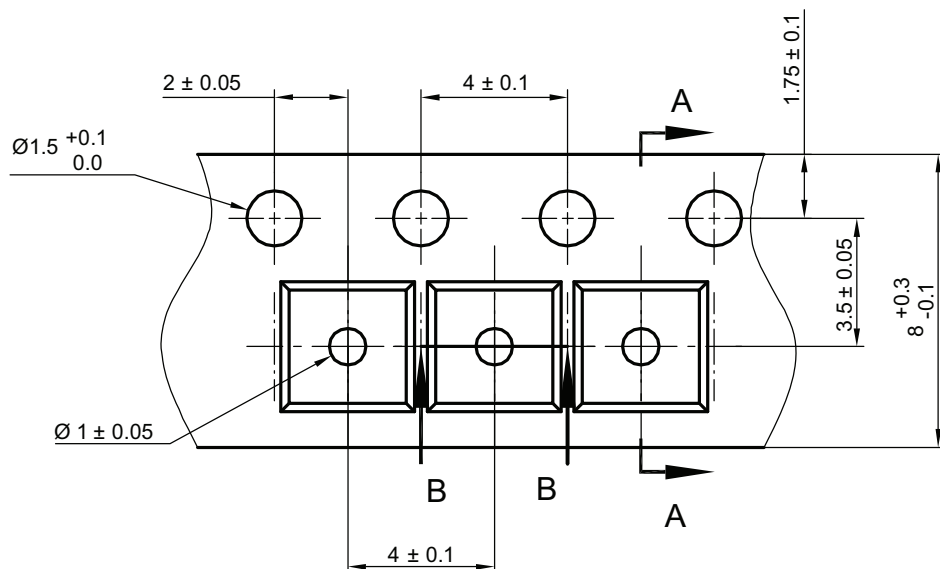
footprint recommendation:



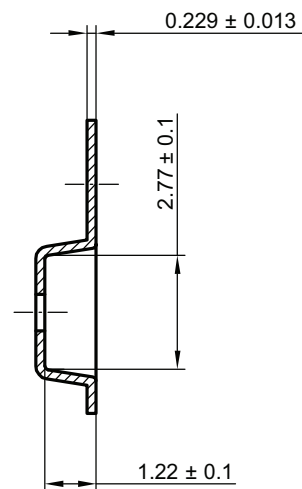
Created - Date: 18-Oct-2021  
Rev. 01 - Date: 18-Jan-2022  
S8-V-3929.01-009 (4)



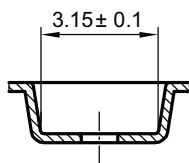
**CARRIER TAPE SOT-23**



A-A Section

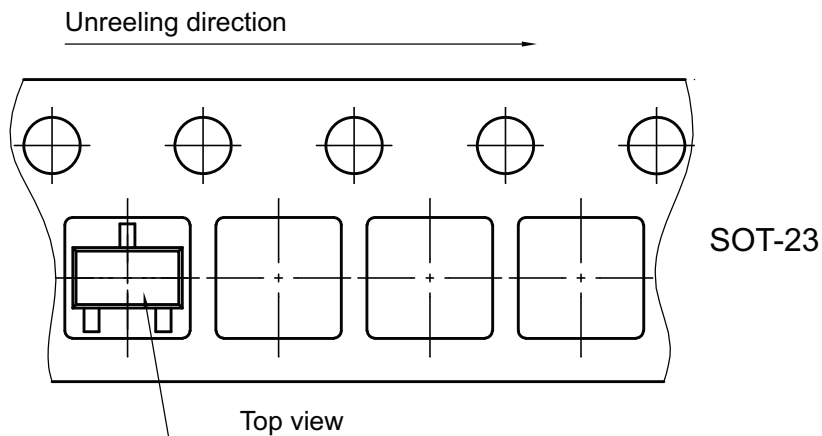


B-B Section



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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