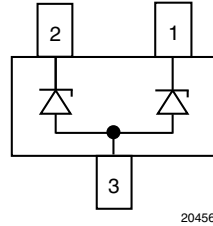
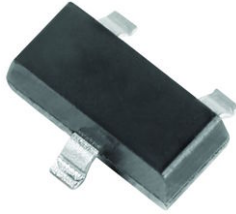




**THE DATASHEET OF  
AZ23C3V6-G3-08**



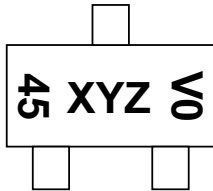
## Small Signal Zener Diodes



### LINKS TO ADDITIONAL RESOURCES



### MARKING (example only)



XYZ = type code  
 45 = working week  
 0 = year  
 V = Vishay

### FEATURES

- Silicon planar Zener diodes
- The Zener voltages are graded according to the international E24 standard. Standard Zener voltage tolerance is  $\pm 5\%$ , indicated by the "C" in the ordering code. Replace "C" with "B" for  $\pm 2\%$  tolerance.
- AEC-Q101 qualified available (part number on request)
- ESD capability acc. to AEC-Q101:  
 human body model: > 8 kV,  
 machine model: > 800 V
- 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)



| PRIMARY CHARACTERISTICS |               |      |
|-------------------------|---------------|------|
| PARAMETER               | VALUE         | UNIT |
| $V_Z$ range nom.        | 2.2 to 75     | V    |
| Test current $I_{ZT}$   | 2; 5          | mA   |
| $V_Z$ specification     | Pulse current |      |
| Circuit configuration   | Common anode  |      |

| ORDERING INFORMATION |                                 |                         |                    |                                   |                        |
|----------------------|---------------------------------|-------------------------|--------------------|-----------------------------------|------------------------|
| DEVICE NAME          | ORDERING CODE                   | ZENER VOLTAGE TOLERANCE | AEC-Q101 QUALIFIED | TAPED UNITS PER REEL              | MINIMUM ORDER QUANTITY |
| AZ23-G series        | AZ23C2V4-G3-08 to AZ23C75-G3-08 | 5 %                     | no                 | 3000<br>(8 mm tape on 7" reel)    | 15 000                 |
|                      | AZ23B2V4-G3-08 to AZ23B75-G3-08 | 2 %                     | no                 |                                   |                        |
|                      | AZ23C2V4-G3-18 to AZ23C75-G3-18 | 5 %                     | no                 | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|                      | AZ23B2V4-G3-18 to AZ23B75-G3-18 | 2 %                     | no                 |                                   |                        |

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

| ABSOLUTE MAXIMUM RATINGS               |   |            |             |      |  |
|--|---|------------|-------------|------|--|
| PARAMETER                              | TEST CONDITION  | SYMBOL     | VALUE       | UNIT |  |
| Power dissipation                      | $R_{thJL} = 250 \text{ K/W}$  | $P_{tot}$  | 500         | mW   |  |
|  | On FR-4 board with recommended soldering footprint                          | $P_{tot}$  | 300         | mW   |  |
| Thermal resistance junction to lead    |   | $R_{thJL}$ | 250         | K/W  |  |
| Thermal resistance junction to ambient | According to JEDEC® 51-3 on FR-4 board with recommended soldering footprint | $R_{thJA}$ | 420         | K/W  |  |
| Junction temperature                   |   | $T_j$      | 150         | °C   |  |
| Storage temperature range              |   | $T_{stg}$  | -65 to +150 | °C   |  |
| Operating temperature range            |   | $T_{op}$   | -55 to +150 | °C   |  |



| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |              |                                    |      |       |              |           |                         |      |                                       |                       |                            |      |
|--|--------------|------------------------------------|------|-------|--------------|-----------|-------------------------|------|---------------------------------------|-----------------------|----------------------------|------|
| PART NUMBER  | MARKING CODE | ZENER VOLTAGE RANGE <sup>(1)</sup> |      |       | TEST CURRENT |           | REVERSE LEAKAGE CURRENT |      | DYNAMIC RESISTANCE $f = 1\text{ kHz}$ |                       | TEMPERATURE COEFFICIENT    |      |
|  |              | $V_Z$ at $I_{ZT1}$                 |      |       | $I_{ZT1}$    | $I_{ZT2}$ | $I_R$ at $V_R$          |      | $Z_Z$ at $I_{ZT1}$                    | $Z_{ZK}$ at $I_{ZT2}$ | $\alpha_{VZ}$ at $I_{ZT1}$ |      |
|  |              | V                                  |      |       | mA           |           | $\mu\text{A}$           | V    | $\Omega$                              |                       | $10^{-4}/^{\circ}\text{C}$ |      |
|  |              | MIN.                               | NOM. | MAX.  |              |           | MAX.                    |      | MAX.                                  | MAX.                  | MIN.                       | MAX. |
| AZ23C2V2-G   | D77          | 2.09                               | 2.2  | 2.31  | 5            | 1         | 100                     | 1    | 120                                   | 600                   | -9                         | -4   |
| AZ23C2V4-G   | D78          | 2.28                               | 2.4  | 2.52  | 5            | 1         | 50                      | 1    | 100                                   | 600                   | -9                         | -4   |
| AZ23C2V7-G   | D41          | 2.57                               | 2.7  | 2.84  | 5            | 1         | 20                      | 1    | 83                                    | 500                   | -9                         | -4   |
| AZ23C3V0-G   | D42          | 2.85                               | 3.0  | 3.15  | 5            | 1         | 10                      | 1    | 95                                    | 500                   | -9                         | -3   |
| AZ23C3V3-G   | D43          | 3.14                               | 3.3  | 3.47  | 5            | 1         | 5                       | 1    | 95                                    | 500                   | -8                         | -3   |
| AZ23C3V6-G   | D44          | 3.42                               | 3.6  | 3.78  | 5            | 1         | 5                       | 1    | 90                                    | 500                   | -8                         | -3   |
| AZ23C3V9-G   | D45          | 3.71                               | 3.9  | 4.10  | 5            | 1         | 3                       | 1    | 90                                    | 500                   | -7                         | -3   |
| AZ23C4V3-G   | D46          | 4.09                               | 4.3  | 4.52  | 5            | 1         | 3                       | 1    | 90                                    | 500                   | -6                         | -1   |
| AZ23C4V7-G   | D47          | 4.47                               | 4.7  | 4.94  | 5            | 1         | 3                       | 2    | 78                                    | 500                   | -5                         | 2    |
| AZ23C5V1-G   | D48          | 4.85                               | 5.1  | 5.36  | 5            | 1         | 2                       | 2    | 60                                    | 480                   | -3                         | 4    |
|  |              |                                    |      |       |              |           | 0.1                     | 0.8  |                                       |                       |                            |      |
| AZ23C5V6-G   | D49          | 5.32                               | 5.6  | 5.88  | 5            | 1         | 1                       | 2    | 40                                    | 400                   | -2                         | 6    |
|  |              |                                    |      |       |              |           | 0.1                     | 1    |                                       |                       |                            |      |
| AZ23C6V2-G   | D50          | 5.89                               | 6.2  | 6.51  | 5            | 1         | 3                       | 4    | 10                                    | 150                   | -1                         | 7    |
|  |              |                                    |      |       |              |           | 0.1                     | 2    |                                       |                       |                            |      |
| AZ23C6V8-G   | D51          | 6.46                               | 6.8  | 7.14  | 5            | 1         | 2                       | 4    | 8                                     | 80                    | 2                          | 7    |
|  |              |                                    |      |       |              |           | 0.1                     | 3    |                                       |                       |                            |      |
| AZ23C7V5-G   | D52          | 7.13                               | 7.5  | 7.88  | 5            | 1         | 0.1                     | 5    | 7                                     | 50                    | 3                          | 7    |
| AZ23C8V2-G   | D53          | 7.79                               | 8.2  | 8.61  | 5            | 1         | 0.1                     | 6    | 7                                     | 50                    | 4                          | 7    |
| AZ23C9V1-G   | D54          | 8.65                               | 9.1  | 9.56  | 5            | 1         | 0.1                     | 7    | 10                                    | 50                    | 5                          | 8    |
| AZ23C10-G  | D55          | 9.50                               | 10   | 10.50 | 5            | 1         | 0.1                     | 7.5  | 15                                    | 70                    | 5                          | 8    |
| AZ23C11-G  | D56          | 10.45                              | 11   | 11.55 | 5            | 1         | 0.1                     | 8.5  | 20                                    | 70                    | 5                          | 9    |
| AZ23C12-G  | D57          | 11.40                              | 12   | 12.60 | 5            | 1         | 0.1                     | 9    | 20                                    | 90                    | 6                          | 9    |
| AZ23C13-G  | D58          | 12.40                              | 13   | 13.65 | 5            | 1         | 0.1                     | 10   | 25                                    | 110                   | 7                          | 9    |
| AZ23C15-G  | D59          | 14.25                              | 15   | 15.60 | 5            | 1         | 0.05                    | 11   | 30                                    | 110                   | 7                          | 9    |
| AZ23C16-G  | D60          | 15.30                              | 16   | 16.80 | 5            | 1         | 0.05                    | 12   | 40                                    | 170                   | 8                          | 9.5  |
| AZ23C18-G  | D61          | 17.10                              | 18   | 18.90 | 5            | 1         | 0.05                    | 14   | 45                                    | 170                   | 8                          | 9.5  |
| AZ23C20-G  | D62          | 19.00                              | 20   | 21.00 | 5            | 1         | 0.05                    | 15   | 50                                    | 220                   | 8                          | 10   |
| AZ23C22-G  | D63          | 20.90                              | 22   | 23.10 | 5            | 1         | 0.05                    | 17   | 55                                    | 220                   | 8                          | 10   |
| AZ23C24-G  | D64          | 22.80                              | 24   | 25.20 | 5            | 1         | 0.05                    | 18   | 70                                    | 220                   | 8                          | 10   |
| AZ23C27-G  | D65          | 25.65                              | 27   | 28.35 | 2            | 0.5       | 0.05                    | 20   | 80                                    | 250                   | 8                          | 10   |
| AZ23C30-G  | D66          | 28.50                              | 30   | 31.50 | 2            | 0.5       | 0.05                    | 22.5 | 80                                    | 250                   | 8                          | 10   |
| AZ23C33-G  | D67          | 31.35                              | 33   | 34.65 | 2            | 0.5       | 0.05                    | 25   | 80                                    | 250                   | 8                          | 10   |
| AZ23C36-G  | D68          | 34.20                              | 36   | 37.80 | 2            | 0.5       | 0.05                    | 27   | 87                                    | 250                   | 8                          | 10   |
| AZ23C39-G  | D69          | 37.05                              | 39   | 40.95 | 2            | 0.5       | 0.05                    | 29   | 87                                    | 300                   | 10                         | 12   |
| AZ23C43-G  | D70          | 40.85                              | 43   | 45.15 | 2            | 0.5       | 0.05                    | 32   | 97                                    | 375                   | 10                         | 12   |
| AZ23C47-G  | D71          | 44.65                              | 47   | 49.35 | 2            | 0.5       | 0.05                    | 35   | 97                                    | 375                   | 10                         | 12   |
| AZ23C51-G  | D72          | 48.45                              | 51   | 53.55 | 2            | 0.5       | 0.05                    | 38   | 100                                   | 400                   | 10                         | 12   |
| AZ23C56-G  | D73          | 53.20                              | 56   | 58.80 | 2            | 0.5       | 0.05                    | 42   | 135                                   | 425                   | 9                          | 11   |
| AZ23C62-G  | D74          | 58.90                              | 62   | 65.10 | 2            | 0.5       | 0.05                    | 46.5 | 150                                   | 450                   | 9                          | 12   |
| AZ23C68-G  | D75          | 64.60                              | 68   | 71.40 | 2            | 0.5       | 0.05                    | 51   | 200                                   | 475                   | 10                         | 12   |
| AZ23C75-G  | D76          | 71.25                              | 75   | 78.75 | 2            | 0.5       | 0.05                    | 56   | 250                                   | 500                   | 10                         | 12   |



| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |              |                                    |      |       |              |           |                         |      |                                       |                       |                            |      |
|--|--------------|------------------------------------|------|-------|--------------|-----------|-------------------------|------|---------------------------------------|-----------------------|----------------------------|------|
| PART NUMBER  | MARKING CODE | ZENER VOLTAGE RANGE <sup>(1)</sup> |      |       | TEST CURRENT |           | REVERSE LEAKAGE CURRENT |      | DYNAMIC RESISTANCE $f = 1\text{ kHz}$ |                       | TEMPERATURE COEFFICIENT    |      |
|  |              | $V_Z$ at $I_{ZT1}$                 |      |       | $I_{ZT1}$    | $I_{ZT2}$ | $I_R$ at $V_R$          |      | $Z_Z$ at $I_{ZT1}$                    | $Z_{ZK}$ at $I_{ZT2}$ | $\alpha_{VZ}$ at $I_{ZT1}$ |      |
|  |              | V                                  |      |       | mA           |           | $\mu\text{A}$           | V    | $\Omega$                              |                       | $10^{-4}/^{\circ}\text{C}$ |      |
|  |              | MIN.                               | NOM. | MAX.  |              |           | MAX.                    |      | MAX.                                  | MAX.                  | MIN.                       | MAX. |
| AZ23B2V2-G   | DG8          | 2.16                               | 2.2  | 2.24  | 5            | 1         | 100                     | 1    | 120                                   | 600                   | -9                         | -4   |
| AZ23B2V4-G   | DG9          | 2.35                               | 2.4  | 2.45  | 5            | 1         | 50                      | 1    | 100                                   | 600                   | -9                         | -4   |
| AZ23B2V7-G   | DD1          | 2.65                               | 2.7  | 2.75  | 5            | 1         | 20                      | 1    | 83                                    | 500                   | -9                         | -4   |
| AZ23B3V0-G   | DD2          | 2.94                               | 3.0  | 3.06  | 5            | 1         | 10                      | 1    | 95                                    | 500                   | -9                         | -3   |
| AZ23B3V3-G   | DD3          | 3.23                               | 3.3  | 3.37  | 5            | 1         | 5                       | 1    | 95                                    | 500                   | -8                         | -3   |
| AZ23B3V6-G   | DD4          | 3.53                               | 3.6  | 3.67  | 5            | 1         | 5                       | 1    | 90                                    | 500                   | -8                         | -3   |
| AZ23B3V9-G   | DD5          | 3.82                               | 3.9  | 3.98  | 5            | 1         | 3                       | 1    | 90                                    | 500                   | -7                         | -3   |
| AZ23B4V3-G   | DD6          | 4.21                               | 4.3  | 4.39  | 5            | 1         | 3                       | 1    | 90                                    | 500                   | -6                         | -1   |
| AZ23B4V7-G   | DD7          | 4.61                               | 4.7  | 4.79  | 5            | 1         | 3                       | 2    | 78                                    | 500                   | -5                         | 2    |
| AZ23B5V1-G   | DD8          | 5.00                               | 5.1  | 5.20  | 5            | 1         | 2                       | 2    | 60                                    | 480                   | -3                         | 4    |
| AZ23B5V6-G   | DD9          | 5.49                               | 5.6  | 5.71  | 5            | 1         | 0.1                     | 0.8  | 40                                    | 400                   | -2                         | 6    |
| AZ23B6V2-G   | DE0          | 6.08                               | 6.2  | 6.32  | 5            | 1         | 1                       | 2    | 10                                    | 150                   | -1                         | 7    |
| AZ23B6V8-G   | DE1          | 6.66                               | 6.8  | 6.94  | 5            | 1         | 0.1                     | 1    | 8                                     | 80                    | 2                          | 7    |
| AZ23B7V5-G   | DE2          | 7.35                               | 7.5  | 7.65  | 5            | 1         | 2                       | 4    | 7                                     | 50                    | 3                          | 7    |
| AZ23B8V2-G   | DE3          | 8.04                               | 8.2  | 8.36  | 5            | 1         | 0.1                     | 3    | 7                                     | 50                    | 4                          | 7    |
| AZ23B9V1-G   | DE4          | 8.92                               | 9.1  | 9.28  | 5            | 1         | 0.1                     | 2    | 10                                    | 50                    | 5                          | 8    |
| AZ23B10-G  | DE5          | 9.80                               | 10   | 10.20 | 5            | 1         | 0.1                     | 7    | 15                                    | 70                    | 5                          | 8    |
| AZ23B11-G  | DE6          | 10.78                              | 11   | 11.22 | 5            | 1         | 0.1                     | 7.5  | 20                                    | 70                    | 5                          | 9    |
| AZ23B12-G  | DE7          | 11.76                              | 12   | 12.24 | 5            | 1         | 0.1                     | 8.5  | 20                                    | 90                    | 6                          | 9    |
| AZ23B13-G  | DE8          | 12.74                              | 13   | 13.26 | 5            | 1         | 0.1                     | 9    | 25                                    | 110                   | 7                          | 9    |
| AZ23B15-G  | DE9          | 14.70                              | 15   | 15.30 | 5            | 1         | 0.1                     | 10   | 30                                    | 110                   | 7                          | 9    |
| AZ23B16-G  | DF0          | 15.68                              | 16   | 16.32 | 5            | 1         | 0.05                    | 11   | 40                                    | 170                   | 8                          | 9.5  |
| AZ23B18-G  | DF1          | 17.64                              | 18   | 18.36 | 5            | 1         | 0.05                    | 12   | 45                                    | 170                   | 8                          | 9.5  |
| AZ23B20-G  | DF2          | 19.60                              | 20   | 20.40 | 5            | 1         | 0.05                    | 14   | 50                                    | 220                   | 8                          | 10   |
| AZ23B22-G  | DF3          | 21.56                              | 22   | 22.44 | 5            | 1         | 0.05                    | 15   | 55                                    | 220                   | 8                          | 10   |
| AZ23B24-G  | DF4          | 23.52                              | 24   | 24.48 | 5            | 1         | 0.05                    | 17   | 70                                    | 220                   | 8                          | 10   |
| AZ23B27-G  | DF5          | 26.46                              | 27   | 27.54 | 2            | 0.5       | 0.05                    | 18   | 80                                    | 250                   | 8                          | 10   |
| AZ23B30-G  | DF6          | 29.40                              | 30   | 30.60 | 2            | 0.5       | 0.05                    | 20   | 80                                    | 250                   | 8                          | 10   |
| AZ23B33-G  | DF7          | 32.34                              | 33   | 33.66 | 2            | 0.5       | 0.05                    | 22.5 | 80                                    | 250                   | 8                          | 10   |
| AZ23B36-G  | DF8          | 35.28                              | 36   | 36.72 | 2            | 0.5       | 0.05                    | 25   | 80                                    | 250                   | 8                          | 10   |
| AZ23B39-G  | DF9          | 38.22                              | 39   | 39.78 | 2            | 0.5       | 0.05                    | 27   | 87                                    | 250                   | 8                          | 10   |
| AZ23B43-G  | DG0          | 42.14                              | 43   | 43.86 | 2            | 0.5       | 0.05                    | 29   | 87                                    | 300                   | 10                         | 12   |
| AZ23B47-G  | DG1          | 46.06                              | 47   | 47.94 | 2            | 0.5       | 0.05                    | 32   | 97                                    | 375                   | 10                         | 12   |
| AZ23B51-G  | DG2          | 49.98                              | 51   | 52.02 | 2            | 0.5       | 0.05                    | 35   | 97                                    | 375                   | 10                         | 12   |
| AZ23B56-G  | DG3          | 54.88                              | 56   | 57.12 | 2            | 0.5       | 0.05                    | 38   | 100                                   | 400                   | 10                         | 12   |
| AZ23B62-G  | DG5          | 60.76                              | 62   | 63.24 | 2            | 0.5       | 0.05                    | 42   | 135                                   | 425                   | 9                          | 11   |
| AZ23B68-G  | DG6          | 66.64                              | 68   | 69.36 | 2            | 0.5       | 0.05                    | 46.5 | 150                                   | 450                   | 9                          | 12   |
| AZ23B75-G  | DG7          | 73.50                              | 75   | 76.50 | 2            | 0.5       | 0.05                    | 51   | 200                                   | 475                   | 10                         | 12   |
| AZ23B75-G  | DG7          | 73.50                              | 75   | 76.50 | 2            | 0.5       | 0.05                    | 56   | 250                                   | 500                   | 10                         | 12   |

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

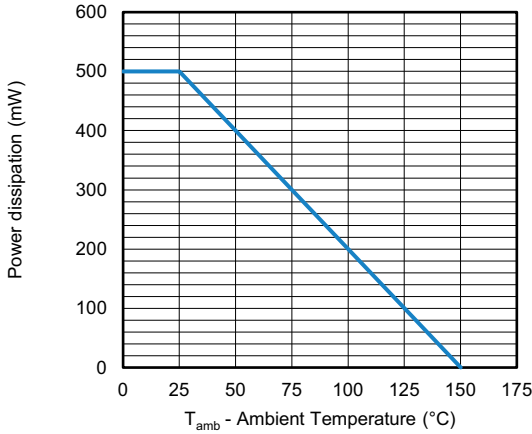


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

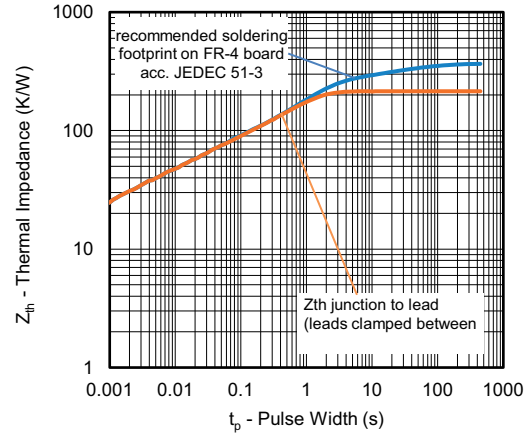
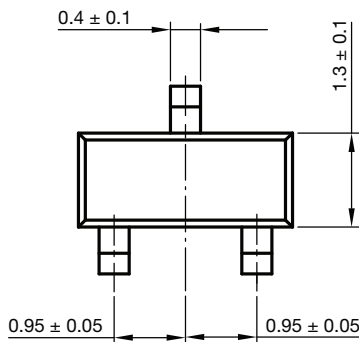
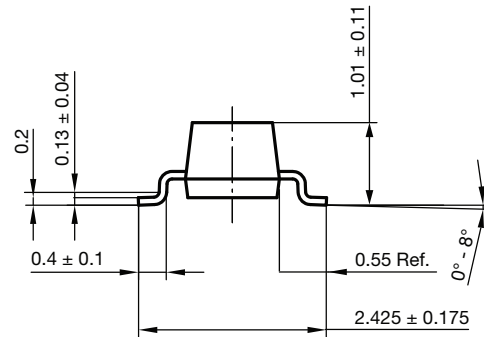
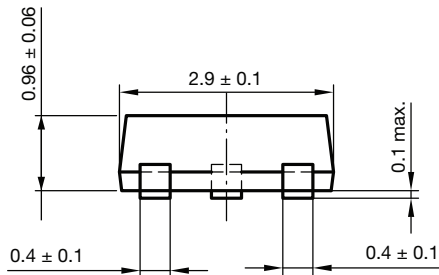
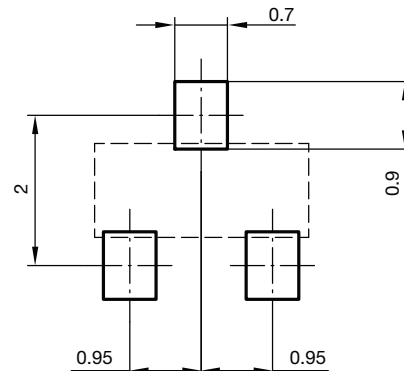


Fig. 2 - Thermal Impedance vs. Time

**PACKAGE DIMENSIONS** in millimeters (inches): **SOT-23**



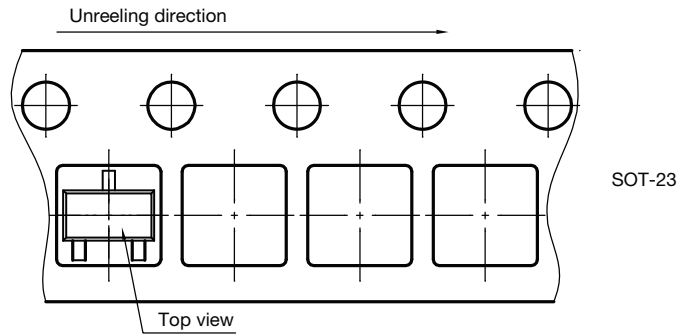
Foot print recommendation:



Document no.: S8-V-3929.01-009 (4)  
Created - Date: 18. Oct. 2021  
Rev. 01 - Date: 18. Jan. 2022

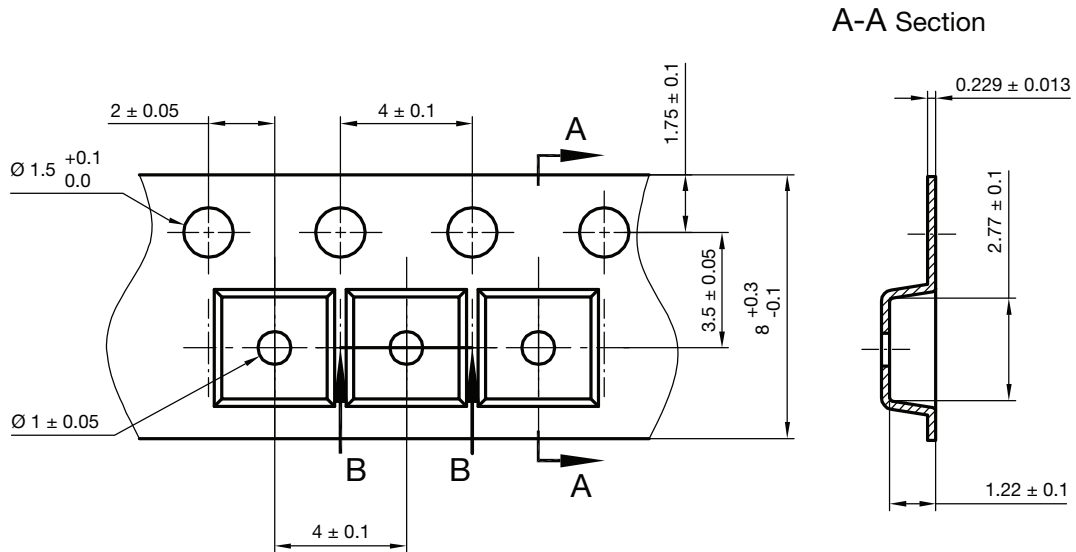


### ORIENTATION IN CARRIER TAPE



S8-V-3929.01-006 (4)  
 Created Date: 04.02.2010  
 Rev. 02 Date: 07.11.2022

### CARRIER TAPE



B-B Section

Document no.: S8-V-3929.01-005 (4)  
 Created - Date: 04. Feb. 2010



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