

## FEATURES

- Planar die construction.
- General purpose, medium current.
- Ideally suited for automated assembly processes.



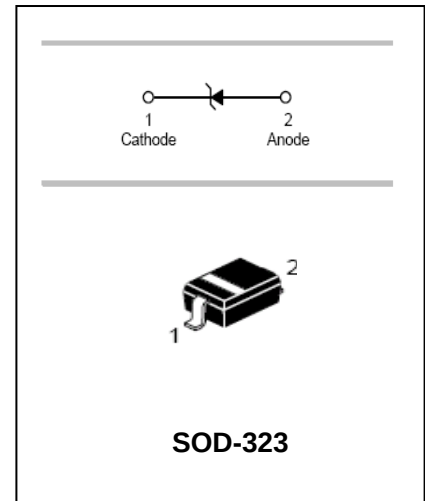
Lead-free

## APPLICATIONS

- Zener diode.
- Ultra-small surface mount package.

## ORDERING INFORMATION

| Type No.             | Marking     | Package Code |
|----------------------|-------------|--------------|
| BZT52C2V4S-BZT52C51S | See table 2 | SOD-323      |



## MAXIMUM RATING @ Ta=25°C unless otherwise specified

| Characteristic                              | Symbol           | Value   | Unit |
|---------------------------------------------|------------------|---------|------|
| Forward Voltage @ I <sub>F</sub> =10mA      | V <sub>F</sub>   | 0.9     | V    |
| Power Dissipation                           | P <sub>d</sub>   | 200     | mW   |
| Thermal resistance, junction to ambient air | R <sub>θJA</sub> | 625     | °C/W |
| Junction temperature                        | T <sub>j</sub>   | 150     | °C   |
| Storage temperature range                   | T <sub>stg</sub> | -65-150 | °C   |

Notes: 1. Valid provided that device terminals are kept at ambient temperature.

2. Short duration test pulse used in minimize self-heating effect.

3. f = 1KHz.

## ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



| Type Number | Marking Code | Zener Voltage Range |        |        |          | Maximum Zener Impedance |                 |          | Maximum Reverse Current |         | Temperature Coefficient of zener voltage @ $I_{ZTC}$ mV/°C |      |
|-------------|--------------|---------------------|--------|--------|----------|-------------------------|-----------------|----------|-------------------------|---------|------------------------------------------------------------|------|
|             |              | $V_Z@I_{ZT}$        |        |        | $I_{ZT}$ | $Z_{ZT}@I_{ZT}$         | $Z_{ZK}@I_{ZK}$ | $I_{ZK}$ | $I_R$                   | @ $V_R$ |                                                            |      |
|             |              | Nom(V)              | Min(V) | Max(V) | mA       | $\Omega$                |                 | mA       | $\mu A$                 | V       | Min                                                        | Max  |
| BZT52C2V0S  | WY           | 2.0                 | 1.91   | 2.09   | 5        | 100                     | 600             | 1.0      | 150                     | 1.0     | -3.5                                                       | 0    |
| BZT52C2V4S  | WX           | 2.4                 | 2.2    | 2.60   | 5        | 100                     | 600             | 1.0      | 50                      | 1.0     | -3.5                                                       | 0    |
| BZT52C2V7S  | W1           | 2.7                 | 2.5    | 2.9    | 5        | 100                     | 600             | 1.0      | 20                      | 1.0     | -3.5                                                       | 0    |
| BZT52C3V0S  | W2           | 3.0                 | 2.8    | 3.2    | 5        | 95                      | 600             | 1.0      | 10                      | 1.0     | -3.5                                                       | 0    |
| BZT52C3V3S  | W3           | 3.3                 | 3.1    | 3.5    | 5        | 95                      | 600             | 1.0      | 5                       | 1.0     | -3.5                                                       | 0    |
| BZT52C3V6S  | W4           | 3.6                 | 3.4    | 3.8    | 5        | 90                      | 600             | 1.0      | 5                       | 1.0     | -3.5                                                       | 0    |
| BZT52C3V9S  | W5           | 3.9                 | 3.7    | 4.1    | 5        | 90                      | 600             | 1.0      | 3                       | 1.0     | -3.5                                                       | 0    |
| BZT52C4V3S  | W6           | 4.3                 | 4.0    | 4.6    | 5        | 90                      | 600             | 1.0      | 3                       | 1.0     | -3.5                                                       | 0    |
| BZT52C4V7S  | W7           | 4.7                 | 4.4    | 5.0    | 5        | 80                      | 500             | 1.0      | 3                       | 2.0     | -3.5                                                       | 0.2  |
| BZT52C5V1S  | W8           | 5.1                 | 4.8    | 5.4    | 5        | 60                      | 480             | 1.0      | 2                       | 2.0     | -2.7                                                       | 1.2  |
| BZT52C5V6S  | W9           | 5.6                 | 5.2    | 6.0    | 5        | 40                      | 400             | 1.0      | 1                       | 2.0     | -2.0                                                       | 2.5  |
| BZT52C6V2S  | WA           | 6.2                 | 5.8    | 6.6    | 5        | 10                      | 150             | 1.0      | 3                       | 4.0     | 0.4                                                        | 3.7  |
| BZT52C6V8S  | WB           | 6.8                 | 6.4    | 7.2    | 5        | 15                      | 80              | 1.0      | 2                       | 4.0     | 1.2                                                        | 4.5  |
| BZT52C7V5S  | WC           | 7.5                 | 7.0    | 7.9    | 5        | 15                      | 80              | 1.0      | 1                       | 5.0     | 2.5                                                        | 5.3  |
| BZT52C8V2S  | WD           | 8.2                 | 7.7    | 8.7    | 5        | 15                      | 80              | 1.0      | 0.7                     | 5.0     | 3.2                                                        | 6.2  |
| BZT52C9V1S  | WE           | 9.1                 | 8.5    | 9.6    | 5        | 15                      | 100             | 1.0      | 0.5                     | 6.0     | 3.8                                                        | 7.0  |
| BZT52C10S   | WF           | 10                  | 9.4    | 10.6   | 5        | 20                      | 150             | 1.0      | 0.2                     | 7.0     | 4.5                                                        | 8.0  |
| BZT52C11S   | WG           | 11                  | 10.4   | 11.6   | 5        | 20                      | 150             | 1.0      | 0.1                     | 8.0     | 5.4                                                        | 9.0  |
| BZT52C12SX  | WH           | 12                  | 11.4   | 12.7   | 5        | 25                      | 150             | 1.0      | 0.1                     | 8.0     | 6.0                                                        | 10.0 |
| BZT52C13S   | WI           | 13                  | 12.4   | 14.1   | 5        | 30                      | 170             | 1.0      | 0.1                     | 8.0     | 7.0                                                        | 11.0 |
| BZT52C15S   | WJ           | 15                  | 13.8   | 15.6   | 5        | 30                      | 200             | 1.0      | 0.1                     | 10.5    | 9.2                                                        | 13.0 |
| BZT52C16S   | WK           | 16                  | 15.3   | 17.1   | 5        | 40                      | 200             | 1.0      | 0.1                     | 11.2    | 10.4                                                       | 14.0 |
| BZT52C18S   | WL           | 18                  | 16.8   | 19.1   | 5        | 45                      | 225             | 1.0      | 0.1                     | 12.6    | 12.4                                                       | 16.0 |
| BZT52C20S   | WM           | 20                  | 18.8   | 21.2   | 5        | 55                      | 225             | 1.0      | 0.1                     | 14.0    | 14.4                                                       | 18.0 |
| BZT52C22S   | WN           | 22                  | 20.8   | 23.3   | 5        | 55                      | 250             | 1.0      | 0.1                     | 15.4    | 16.4                                                       | 20.0 |
| BZT52C24S   | WO           | 24                  | 22.8   | 25.6   | 5        | 70                      | 250             | 1.0      | 0.1                     | 16.8    | 18.4                                                       | 22.0 |
| BZT52C27S   | WP           | 27                  | 25.1   | 28.9   | 2        | 80                      | 300             | 0.5      | 0.1                     | 18.9    | 21.4                                                       | 25.3 |
| BZT52C30S   | WQ           | 30                  | 28.0   | 32.0   | 2        | 80                      | 300             | 0.5      | 0.1                     | 21.0    | 24.4                                                       | 29.4 |
| BZT52C33S   | WR           | 33                  | 31.0   | 35.0   | 2        | 80                      | 325             | 0.5      | 0.1                     | 23.1    | 27.4                                                       | 33.4 |
| BZT52C36S   | WS           | 36                  | 34.0   | 38.0   | 2        | 90                      | 350             | 0.5      | 0.1                     | 25.2    | 30.4                                                       | 37.4 |
| BZT52C39S   | WT           | 39                  | 37.0   | 41.0   | 2        | 130                     | 350             | 0.5      | 0.1                     | 27.3    | 33.4                                                       | 41.2 |

Notes: 1. Valid provided that device terminals are kept at ambient temperature.

2. Tested with pulses, period=5ms, pulse width = 300 $\mu$ s.

3. f = 1KHz.



### TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

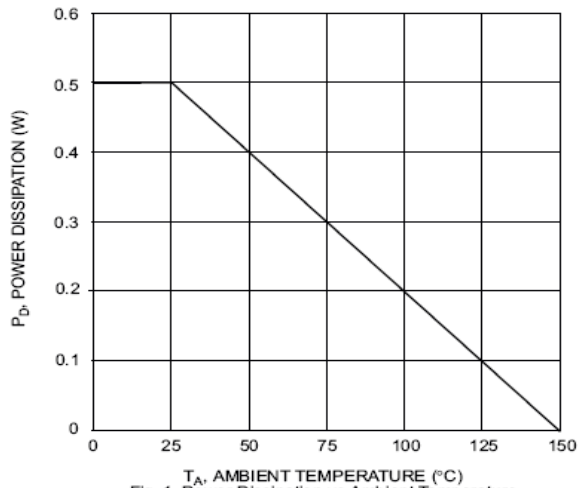


Fig. 1 Power Dissipation vs Ambient Temperature

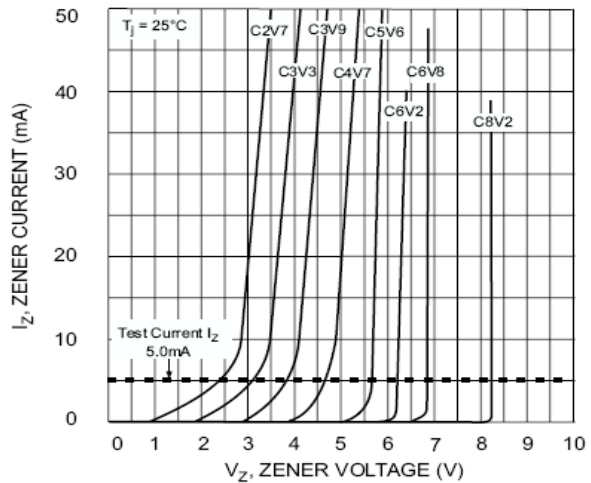


Fig. 2 Zener Breakdown Characteristics

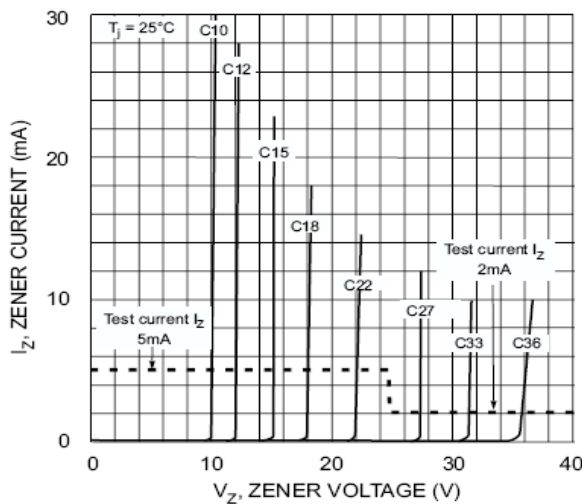


Fig. 3 Zener Breakdown Characteristics

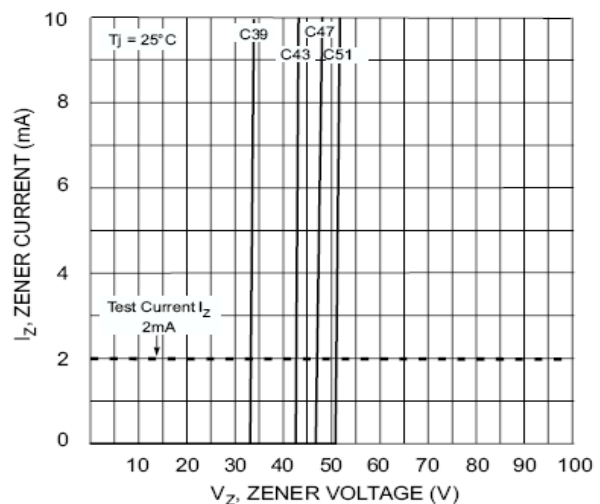


Fig. 4 Zener Breakdown Characteristics

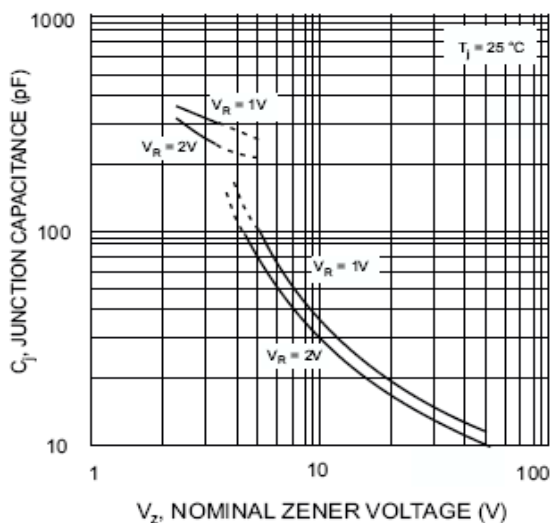
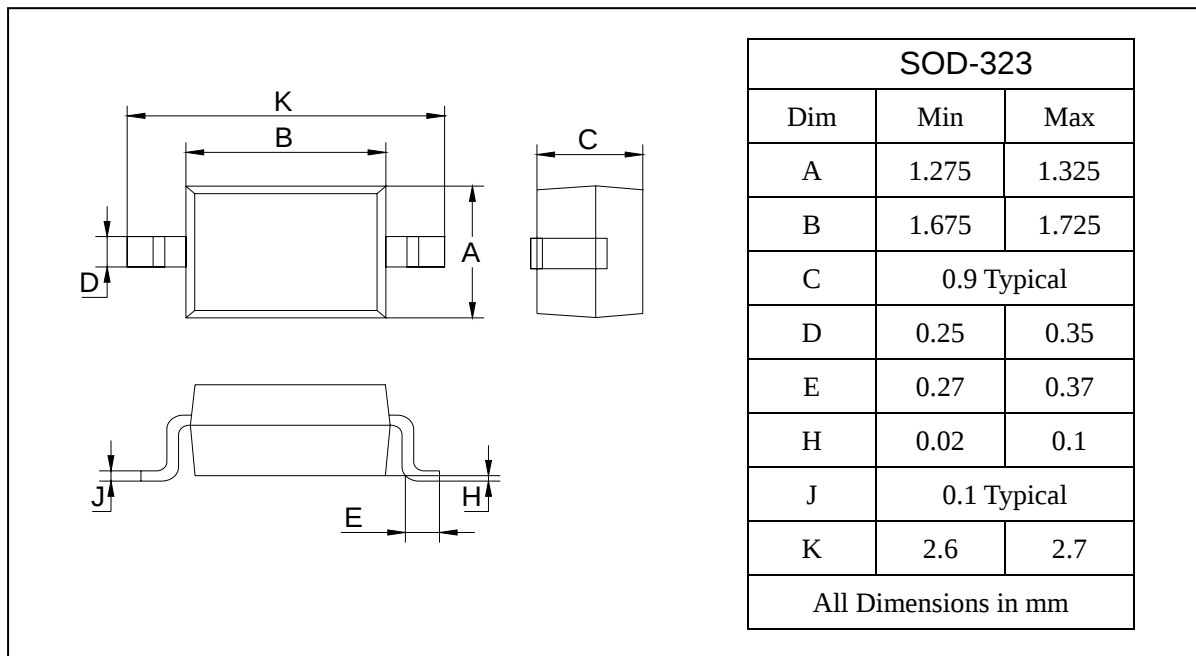


Fig. 5 Junction Capacitance vs Nominal Zener Voltage

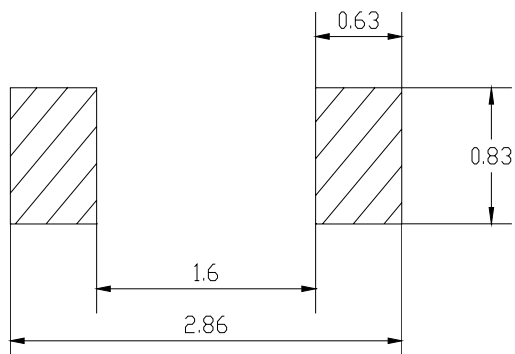
## PACKAGE OUTLINE

Plastic surface mounted package

SOD-323



## SOLDERING FOOTPRINT



Unit : mm

## PACKAGE INFORMATION

| Device     | Package | Shipping       |
|------------|---------|----------------|
| BZT52C12SX | SOD-323 | 3000/Tape&Reel |