



Surface mount zener diode

BZT52C2V0S-BZT52C51S

FEATURES

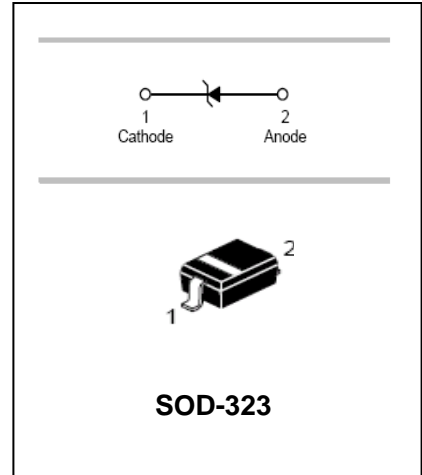
- Planar die construction
- General purpose, medium current
- Ideally suited for automated assembly processes



Lead-free

APPLICATIONS

- Zener diode
- Ultra-small surface mount package



SOD-323

ORDERING INFORMATION

| Type No. | Marking | Package Code |
|----------------------|-------------|--------------|
| BZT52C2V0S-BZT52C51S | See table 2 | SOD-323 |

MAXIMUM RATING @ Ta=25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|------------------|-------------|------|
| Forward Voltage @ I _F =10mA | V _F | 0.9 | V |
| Power Dissipation | P _d | 200 | mW |
| Thermal resistance, junction to ambient air | R _{θJA} | 625 | °C/W |
| Junction temperature | T _j | 150 | °C |
| Storage temperature range | T _{stg} | -65 to +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.



Surface mount zener diode

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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 | Min | Max |
| | | Nom(V) | Min(V) | Max(V) | mA | Ω | | mA | μA | V | | |
| 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 |
| BZT52C12S | 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 |
| BZT52C43S | WU | 43 | 40.0 | 46.0 | 5 | 100 | 700 | 1.0 | 0.1 | 32 | 10.0 | 12.0 |
| BZT52C47S | WV | 47 | 44.0 | 50.0 | 5 | 100 | 750 | 1.0 | 0.1 | 35 | 10.0 | 12.0 |
| BZT52C51S | WW | 51 | 48.0 | 54.0 | 5 | 100 | 750 | 1.0 | 0.1 | 38 | 10.0 | 12.0 |



Surface mount zener diode

BZT52C2V0S-BZT52C51S

- Notes: 1. Valid provided that device terminals are kept at ambient temperature.
 2. Tested with pulses, period=5ms, pulse width = 300μs.
 3. f = 1KHz.

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

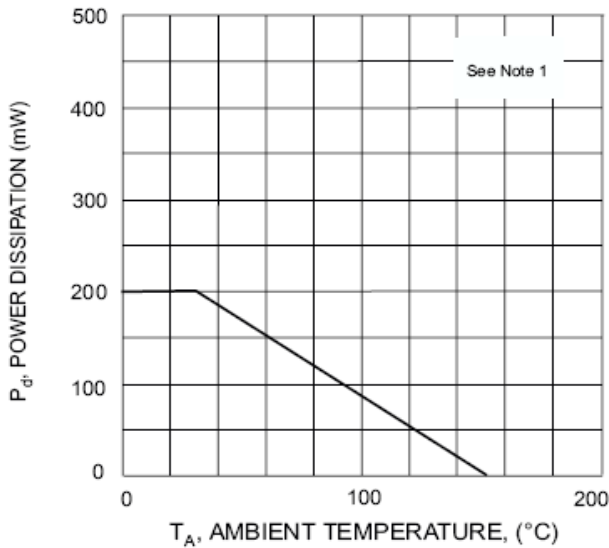


Fig. 1 Power Derating Curve

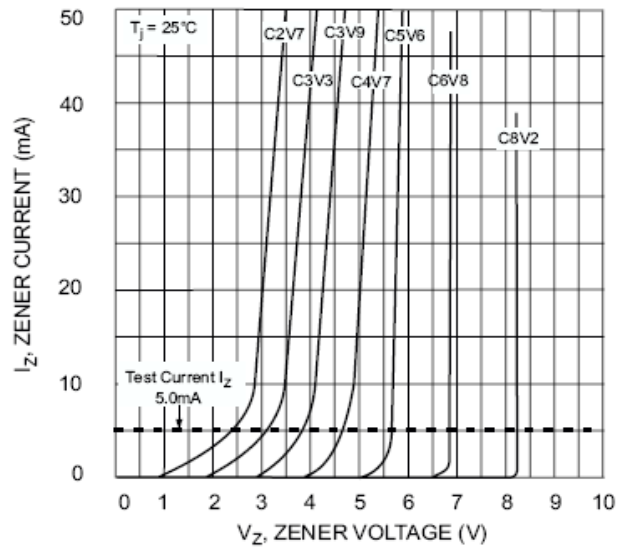


Fig. 2 Zener Breakdown Characteristics

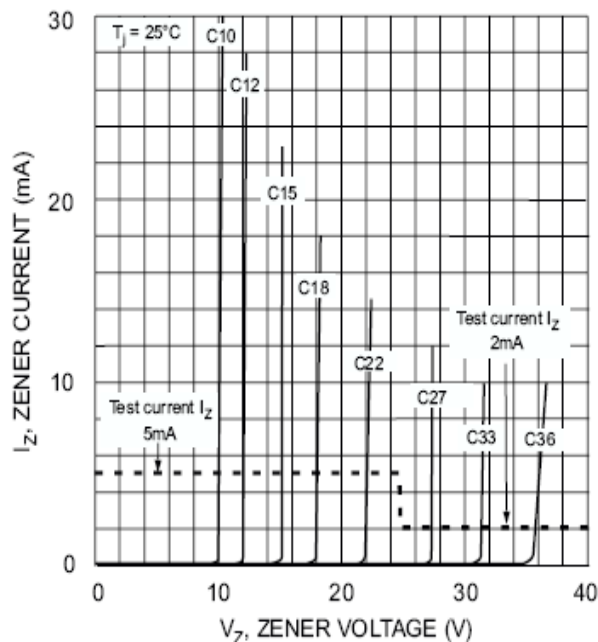


Fig. 3 Zener Breakdown Characteristics

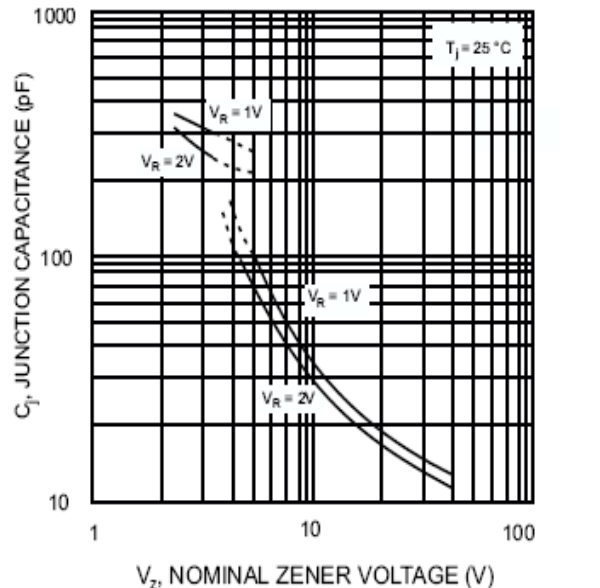


Fig. 4 Junction Capacitance vs Nominal Zener Voltage



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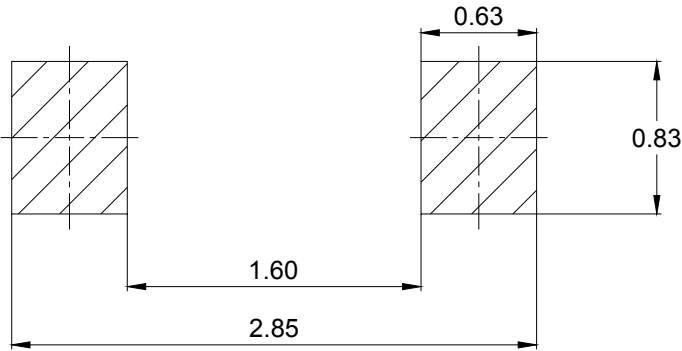
PACKAGE OUTLINE

Plastic surface mounted package

SOD-323

| SOD-323 | | |
|----------------------|--------------|------|
| Dim | Min | Max |
| A | 1.60 | 1.80 |
| B | 1.20 | 1.40 |
| C | 0.9 Typical | |
| D | 0.30 Typical | |
| E | 0.22 | 0.42 |
| H | 0.02 | 0.1 |
| J | 0.1 Typical | |
| K | 2.55 | 2.75 |
| All Dimensions in mm | | |

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

| Device | Package | Shipping |
|----------------------|---------|----------------|
| BZT52C2V0S-BZT52C51S | SOD-323 | 3000/Tape&Reel |