



BZT52C2V0-BZT52C75

Surface mount zener diode

FEATURES

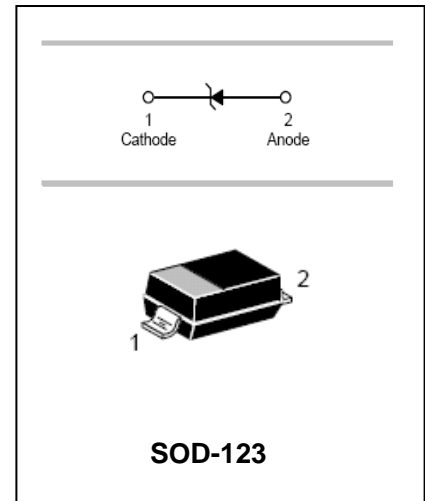
- Planar die construction.
- 500mW power dissipation on ceramic PCB.
- General purpose, medium current.
- Ideally suited for automated assembly processes.



Lead-free

APPLICATIONS

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



ORDERING INFORMATION

| Type No. | Marking | Package Code |
|--------------------|-------------|--------------|
| BZT52C2V0-BZT52C75 | See table 2 | SOD-123 |

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 | 500 | mW |
| Thermal resistance, junction to ambient air | R _{θjA} | 305 | °C/W |
| Junction temperature | T _j | 150 | °C |
| Storage temperature range | T _{stg} | -65 to +150 | °C |

Notes: 1. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm²

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

3. When provided, otherwise, parts are provided with date code only, and type number identifications appears on reel only.

4. f = 1KHz



Surface mount zener diode

BZT52C2V0-BZT52C75

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| Type Number | Marking Code | Zener Voltage Range | | | | Maximum Zener Impedance | | | Maximum Reverse Current | | Typical Temperature Coefficient@ I _{ZTC} mV/°C | | Test Current I _{ZTC} mA |
|-------------|--------------|---------------------------------|--------|--------|-----------------|----------------------------------|----------------------------------|-----------------|-------------------------|-----------------|---|------|----------------------------------|
| | | 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 | | | |
| BZT52C2V0 | WY | 2.0 | 1.96 | 2.04 | 5 | 100 | 600 | 1.0 | 150 | 1 | -3.5 | 0 | 5 |
| BZT52C2V2 | WZ | 2.2 | 2.156 | 2.244 | 5 | 100 | 600 | 1.0 | 120 | 0.7 | -3.5 | 0 | 5 |
| BZT52C2V4 | WX | 2.4 | 2.2 | 2.6 | 5 | 100 | 600 | 1.0 | 50 | 1.0 | -3.5 | 0 | 5 |
| BZT52C2V7 | W1 | 2.7 | 2.5 | 2.9 | 5 | 100 | 600 | 1.0 | 20 | 1.0 | -3.5 | 0 | 5 |
| BZT52C3V0 | W2 | 3.0 | 2.8 | 3.2 | 5 | 95 | 600 | 1.0 | 10 | 1.0 | -3.5 | 0 | 5 |
| BZT52C3V3 | W3 | 3.3 | 3.1 | 3.5 | 5 | 95 | 600 | 1.0 | 5.0 | 1.0 | -3.5 | 0 | 5 |
| BZT52C3V6 | W4 | 3.6 | 3.4 | 3.8 | 5 | 90 | 600 | 1.0 | 5.0 | 1.0 | -3.5 | 0 | 5 |
| BZT52C3V9 | W5 | 3.9 | 3.7 | 4.1 | 5 | 90 | 600 | 1.0 | 3.0 | 1.0 | -3.5 | 0 | 5 |
| BZT52C4V3 | W6 | 4.3 | 4.0 | 4.6 | 5 | 90 | 600 | 1.0 | 3.0 | 1.0 | -3.5 | 0 | 5 |
| BZT52C4V7 | W7 | 4.7 | 4.4 | 5.0 | 5 | 80 | 500 | 1.0 | 3.0 | 2.0 | -3.5 | 0 | 5 |
| BZT52C5V1 | W8 | 5.1 | 4.8 | 5.4 | 5 | 60 | 480 | 1.0 | 2.0 | 2.0 | -2.7 | 1.2 | 5 |
| BZT52C5V6 | W9 | 5.6 | 5.2 | 6.0 | 5 | 40 | 400 | 1.0 | 1.0 | 2.0 | -2 | 2.5 | 5 |
| BZT52C6V2 | WA | 6.2 | 5.8 | 6.6 | 5 | 10 | 150 | 1.0 | 3.0 | 4.0 | 0.4 | 3.7 | 5 |
| BZT52C6V8 | WB | 6.8 | 6.4 | 7.2 | 5 | 15 | 80 | 1.0 | 2.0 | 4.0 | 1.2 | 4.5 | 5 |
| BZT52C7V5 | WC | 7.5 | 7.0 | 7.9 | 5 | 15 | 80 | 1.0 | 1.0 | 5.0 | 2.5 | 5.3 | 5 |
| BZT52C8V2 | WD | 8.2 | 7.7 | 8.7 | 5 | 15 | 80 | 1.0 | 0.7 | 5.0 | 3.2 | 6.2 | 5 |
| BZT52C9V1 | WE | 9.1 | 8.5 | 9.6 | 5 | 15 | 100 | 1.0 | 0.5 | 6.0 | 3.8 | 7.0 | 5 |
| BZT52C10 | WF | 10 | 9.4 | 10.6 | 5 | 20 | 150 | 1.0 | 0.2 | 7.0 | 4.5 | 8.0 | 5 |
| BZT52C11 | WG | 11 | 10.4 | 11.6 | 5 | 20 | 150 | 1.0 | 0.1 | 8.0 | 5.4 | 9.0 | 5 |
| BZT52C12 | WH | 12 | 11.4 | 12.7 | 5 | 25 | 150 | 1.0 | 0.1 | 8.0 | 6.0 | 10.0 | 5 |
| BZT52C13 | WI | 13 | 12.4 | 14.1 | 5 | 30 | 170 | 1.0 | 0.1 | 8.0 | 7.0 | 11.0 | 5 |
| BZT52C15 | WJ | 15 | 13.8 | 15.6 | 5 | 30 | 200 | 1.0 | 0.1 | 10.5 | 9.2 | 13.0 | 5 |
| BZT52C16 | WK | 16 | 15.3 | 17.1 | 5 | 40 | 200 | 1.0 | 0.1 | 11.2 | 10.4 | 14.0 | 5 |
| BZT52C18 | WL | 18 | 16.8 | 19.1 | 5 | 45 | 225 | 1.0 | 0.1 | 12.6 | 12.4 | 16.0 | 5 |
| BZT52C20 | WM | 20 | 18.8 | 21.2 | 5 | 55 | 225 | 1.0 | 0.1 | 14.0 | 14.4 | 18.0 | 5 |
| BZT52C22 | WN | 22 | 20.8 | 23.3 | 5 | 55 | 250 | 1.0 | 0.1 | 15.4 | 16.4 | 20.0 | 5 |
| BZT52C24 | WO | 24 | 22.8 | 25.6 | 5 | 70 | 250 | 1.0 | 0.1 | 16.8 | 18.4 | 22.0 | 5 |
| BZT52C27 | WP | 27 | 25.1 | 28.9 | 2 | 80 | 300 | 0.5 | 0.1 | 18.9 | 21.4 | 25.3 | 2 |
| BZT52C30 | WQ | 30 | 28.0 | 32.0 | 2 | 80 | 300 | 0.5 | 0.1 | 21.0 | 24.4 | 29.4 | 2 |
| BZT52C33 | WR | 33 | 31.0 | 35.0 | 2 | 80 | 325 | 0.5 | 0.1 | 23.1 | 27.4 | 33.4 | 2 |
| BZT52C36 | WS | 36 | 34.0 | 38.0 | 2 | 90 | 350 | 0.5 | 0.1 | 25.2 | 30.4 | 37.4 | 2 |
| BZT52C39 | WT | 39 | 37.0 | 41.0 | 2 | 130 | 350 | 0.5 | 0.1 | 27.3 | 33.4 | 41.2 | 2 |
| BZT52C43 | WU | 43 | 40.0 | 46.0 | 2 | 100 | 700 | 1.0 | 0.1 | 32 | 10.0 | 12.0 | 5 |
| BZT52C47 | WV | 47 | 44.0 | 50.0 | 2 | 100 | 750 | 1.0 | 0.1 | 35 | 10.0 | 12.0 | 5 |
| BZT52C51 | WW | 51 | 48.0 | 54.0 | 2 | 100 | 750 | 1.0 | 0.1 | 38 | 10.0 | 12.0 | 5 |



Surface mount zener diode

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| Type Number | Marking Code | Zener Voltage Range | | | | Maximum Zener Impedance | | | Maximum Reverse | | Typical Temperature Coefficient@ I_{ZTC} mV/°C | | Test Current I_{ZTC} mA |
|-------------|--------------|---------------------|--------|--------|-------------|-------------------------|-------------------|-------------|-----------------|-----------|---|------|---------------------------|
| | | $V_Z@I_{ZT}$ | | | I_{ZT} mA | $Z_{ZT}@I_{ZT}$ Ω | $Z_{ZK}@I_{ZK}$ Ω | I_{ZK} mA | I_R μA | @ V_R V | Min | Max | |
| | | Nom(V) | Min(V) | Max(V) | | | | | | | | | |
| BZT52C56 | WX | 56 | 53.2 | 58.8 | 2 | 200 | 400 | 0.5 | 0.045 | 39.2 | 10.0 | 12.0 | 5 |
| BZT52C62 | 6E | 62 | 58.9 | 65.1 | 2 | 215 | 423 | 0.5 | 0.045 | 43.4 | 10.0 | 12.0 | 5 |
| BZT52C68 | 6F | 68 | 64.6 | 71.4 | 2 | 240 | 447 | 0.5 | 0.045 | 47.6 | 10.0 | 12.0 | 5 |
| BZT52C75 | 6H | 75 | 71.25 | 78.75 | 2 | 255 | 470 | 0.5 | 0.045 | 52.5 | 10.0 | 12.0 | 5 |

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

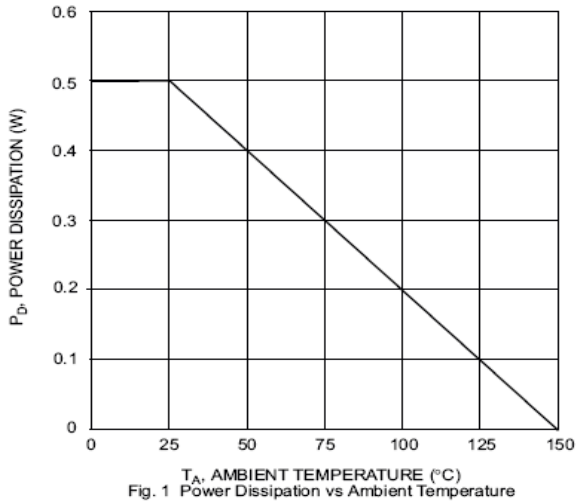


Fig. 1 Power Dissipation vs Ambient Temperature

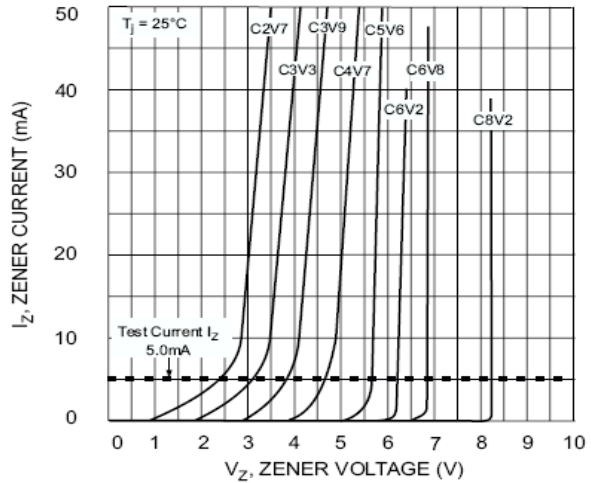


Fig. 2 Zener Breakdown Characteristics

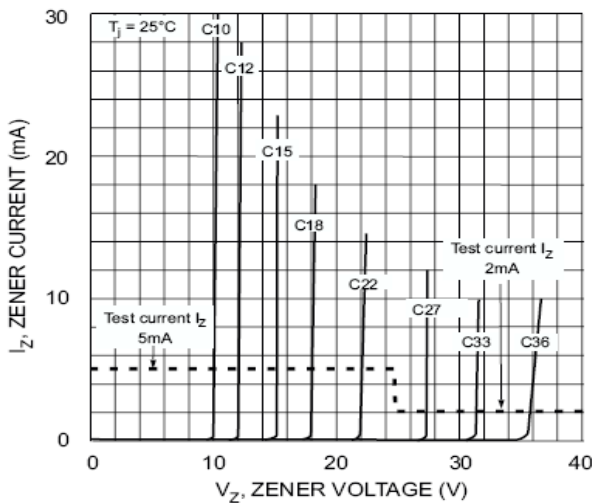


Fig. 3 Zener Breakdown Characteristics

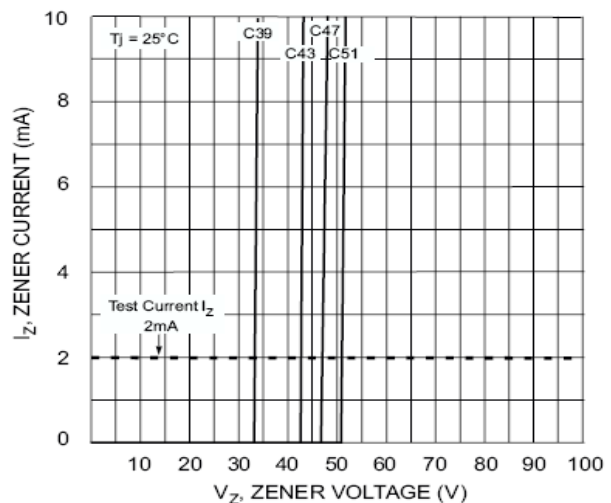


Fig. 4 Zener Breakdown Characteristics



Surface mount zener diode

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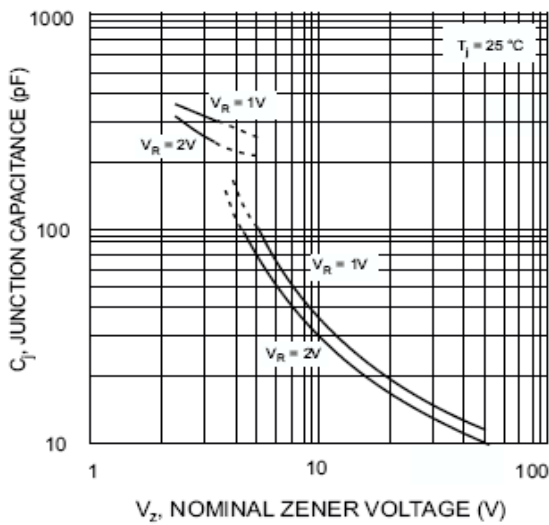


Fig. 5 Junction Capacitance vs Nominal Zener Voltage

PACKAGE OUTLINE

Plastic surface mounted package

SOD-123

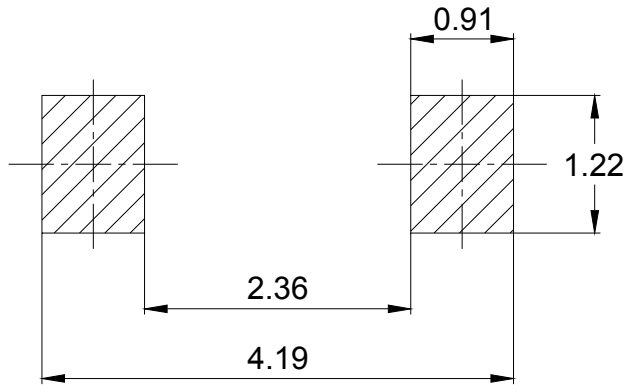
| SOD-123 | | |
|----------------------|--------------|------|
| Dim | Min | Max |
| A | 1.45 | 1.75 |
| B | 2.55 | 2.85 |
| C | 1.15 Typical | |
| D | 0.55 Typical | |
| E | 0.25 | 0.45 |
| H | 0.02 | 0.10 |
| J | 0.1 Typical | |
| K | 3.55 | 3.85 |
| All Dimensions in mm | | |



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SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

| Device | Package | Shipping |
|--------------------|---------|----------------|
| BZT52C2V0-BZT52C75 | SOD-123 | 3000/Tape&Reel |

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