

FEATURES

- Large selection of zener voltages: 2.0V ~ 75V
- Tight voltage tolerance: $\pm 5\%$ for C-series
- Ultra low-profile package well suited for automated assembly
- MSL Class 1 compatible



APPLICATIONS

- General voltage regulation
- Mobile & handheld systems



ORDERING INFORMATION

| Part Number | Marking | Package |
|--------------------------|------------|---------|
| BZT52C2V0SQ - BZT52C75SQ | See Page 2 | SOD-323 |

MAXIMUM RATING (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|-----------------|------------|--------------------|
| Forward Voltage @ $I_F=10\text{mA}$ | V_F | 0.9 | V |
| Power Dissipation (Collector) | P_C | 200 | mW |
| Thermal Resistance (Junction-to-Ambient) | $R_{\theta JA}$ | 625 | $^\circ\text{C/W}$ |
| Thermal Resistance (Junction-to-Case) | $R_{\theta JC}$ | 337 | $^\circ\text{C/W}$ |
| Junction Temperature Range | T_J | -55 ~ +150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -65 ~ +150 | $^\circ\text{C}$ |

Note: These ratings are limiting values above which the serviceability of the diodes may be impaired.

ELECTRICAL CHARACTERISTICS (@ T_A = 25°C unless otherwise specified)

| Part Number | Marking Code | Zener Voltage V _Z (V) | | | @ I _{ZT} (mA) | Maximum Zener Impedance | | | Temperature Coefficient @ I _{ZT} T _C (mV/°C) | | Maximum Reverse Current I _R (μA) | @ V _R (V) |
|-------------|--------------|----------------------------------|-------|-------|------------------------|---------------------------------------|---------------------|------------------------|--|------|---|----------------------|
| | | Min. | Typ. | Max. | | Z _{ZT} (Ω) @ I _{ZT} | Z _{ZK} (Ω) | @ I _{ZK} (mA) | Min. | Max. | | |
| BZT52C2V0SQ | WY | 1.90 | 2.00 | 2.10 | 5 | 100 | 600 | 1.0 | -3.5 | 0.0 | 150.000 | 1.0 |
| BZT52C2V2SQ | 22• | 2.09 | 2.20 | 2.31 | 5 | 100 | 600 | 1.0 | -3.5 | 0.0 | 150.000 | 1.0 |
| BZT52C2V4SQ | WX | 2.28 | 2.40 | 2.52 | 5 | 100 | 600 | 1.0 | -3.5 | 0.0 | 50.000 | 1.0 |
| BZT52C2V7SQ | W1 | 2.57 | 2.70 | 2.84 | 5 | 100 | 600 | 1.0 | -3.5 | 0.0 | 20.000 | 1.0 |
| BZT52C3V0SQ | W2 | 2.85 | 3.00 | 3.15 | 5 | 95 | 600 | 1.0 | -3.5 | 0.0 | 10.000 | 1.0 |
| BZT52C3V3SQ | W3 | 3.14 | 3.30 | 3.47 | 5 | 95 | 600 | 1.0 | -3.5 | 0.0 | 5.000 | 1.0 |
| BZT52C3V6SQ | W4 | 3.42 | 3.60 | 3.78 | 5 | 90 | 600 | 1.0 | -3.5 | 0.0 | 5.000 | 1.0 |
| BZT52C3V9SQ | W5 | 3.71 | 3.90 | 4.10 | 5 | 90 | 600 | 1.0 | -3.5 | 0.0 | 3.000 | 1.0 |
| BZT52C4V3SQ | W6 | 4.09 | 4.30 | 4.52 | 5 | 90 | 600 | 1.0 | -3.5 | 0.0 | 3.000 | 1.0 |
| BZT52C4V7SQ | W7 | 4.47 | 4.70 | 4.94 | 5 | 80 | 500 | 1.0 | -3.5 | 0.2 | 3.000 | 2.0 |
| BZT52C5V1SQ | W8 | 4.85 | 5.10 | 5.36 | 5 | 60 | 480 | 1.0 | -2.7 | 1.2 | 2.000 | 2.0 |
| BZT52C5V6SQ | W9 | 5.32 | 5.60 | 5.88 | 5 | 40 | 400 | 1.0 | -2.0 | 2.5 | 1.000 | 2.0 |
| BZT52C6V2SQ | WA | 5.89 | 6.20 | 6.51 | 5 | 10 | 150 | 1.0 | 0.4 | 3.7 | 3.000 | 4.0 |
| BZT52C6V8SQ | WB | 6.46 | 6.80 | 7.14 | 5 | 15 | 80 | 1.0 | 1.2 | 4.5 | 2.000 | 4.0 |
| BZT52C7V5SQ | WC | 7.13 | 7.50 | 7.88 | 5 | 15 | 80 | 1.0 | 2.5 | 5.3 | 1.000 | 5.0 |
| BZT52C8V2SQ | WD | 7.79 | 8.20 | 8.61 | 5 | 15 | 80 | 1.0 | 3.2 | 6.2 | 0.700 | 5.0 |
| BZT52C9V1SQ | WE | 8.65 | 9.10 | 9.56 | 5 | 15 | 100 | 1.0 | 3.8 | 7.0 | 0.500 | 6.0 |
| BZT52C10SQ | WF | 9.50 | 10.00 | 10.50 | 5 | 20 | 150 | 1.0 | 4.5 | 8.0 | 0.200 | 7.0 |
| BZT52C11SQ | WG | 10.45 | 11.00 | 11.55 | 5 | 20 | 150 | 1.0 | 5.4 | 9.0 | 0.100 | 8.0 |
| BZT52C12SQ | WH | 11.40 | 12.00 | 12.60 | 5 | 25 | 150 | 1.0 | 6.0 | 10.0 | 0.100 | 8.0 |
| BZT52C13SQ | WI | 12.35 | 13.00 | 13.65 | 5 | 30 | 170 | 1.0 | 7.0 | 11.0 | 0.100 | 8.0 |
| BZT52C15SQ | WJ | 14.25 | 15.00 | 15.75 | 5 | 30 | 200 | 1.0 | 9.2 | 13.0 | 0.100 | 10.5 |
| BZT52C16SQ | WK | 15.20 | 16.00 | 16.80 | 5 | 40 | 200 | 1.0 | 10.4 | 14.0 | 0.100 | 11.2 |
| BZT52C18SQ | WL | 17.10 | 18.00 | 18.90 | 5 | 45 | 225 | 1.0 | 12.4 | 16.0 | 0.100 | 12.6 |
| BZT52C20SQ | WM | 19.00 | 20.00 | 21.00 | 5 | 55 | 225 | 1.0 | 14.4 | 18.0 | 0.100 | 14.0 |
| BZT52C22SQ | WN | 20.90 | 22.00 | 23.10 | 5 | 55 | 250 | 1.0 | 16.4 | 20.0 | 0.100 | 15.4 |
| BZT52C24SQ | WO | 22.80 | 24.00 | 25.20 | 5 | 70 | 250 | 1.0 | 18.4 | 22.0 | 0.100 | 16.8 |
| BZT52C27SQ | WP | 25.65 | 27.00 | 28.35 | 2 | 80 | 300 | 0.5 | 21.4 | 25.3 | 0.100 | 18.9 |
| BZT52C30SQ | WQ | 28.50 | 30.00 | 31.50 | 2 | 80 | 300 | 0.5 | 24.4 | 29.4 | 0.100 | 21.0 |
| BZT52C33SQ | WR | 31.35 | 33.00 | 34.65 | 2 | 80 | 325 | 0.5 | 27.4 | 33.4 | 0.100 | 23.1 |
| BZT52C36SQ | WS | 34.20 | 36.00 | 37.80 | 2 | 90 | 350 | 0.5 | 30.4 | 37.4 | 0.100 | 25.2 |
| BZT52C39SQ | WT | 37.05 | 39.00 | 40.95 | 2 | 130 | 350 | 0.5 | 33.4 | 41.2 | 0.100 | 27.3 |
| BZT52C43SQ | WU | 40.85 | 43.00 | 45.15 | 2 | 100 | 700 | 1.0 | 10.0 | 12.0 | 0.100 | 32.0 |
| BZT52C47SQ | WV | 44.65 | 47.00 | 49.35 | 2 | 100 | 750 | 1.0 | 10.0 | 12.0 | 0.100 | 35.0 |
| BZT52C51SQ | WW | 48.45 | 51.00 | 53.55 | 2 | 100 | 750 | 1.0 | 10.0 | 12.0 | 0.100 | 38.0 |
| BZT52C56SQ | WX• | 53.20 | 56.00 | 58.80 | 2 | 200 | 400 | 0.5 | 10.0 | 12.0 | 0.045 | 39.2 |
| BZT52C62SQ | WY• | 58.90 | 62.00 | 65.10 | 2 | 215 | 423 | 0.5 | 10.0 | 12.0 | 0.045 | 43.4 |
| BZT52C68SQ | WZ | 64.60 | 68.00 | 71.40 | 2 | 240 | 447 | 0.5 | 10.0 | 12.0 | 0.045 | 47.6 |
| BZT52C75SQ | 6H | 71.25 | 75.00 | 78.75 | 2 | 255 | 470 | 0.5 | 10.0 | 12.0 | 0.045 | 52.5 |

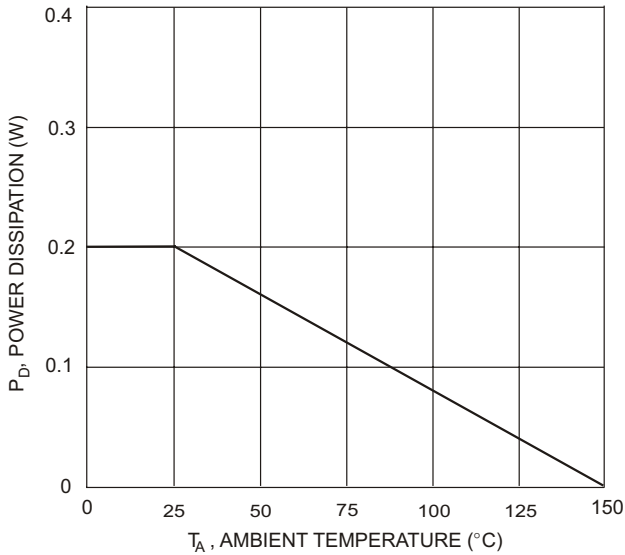
TYPICAL CHARACTERISTICS (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)


Fig. 1 Power Derating Curve

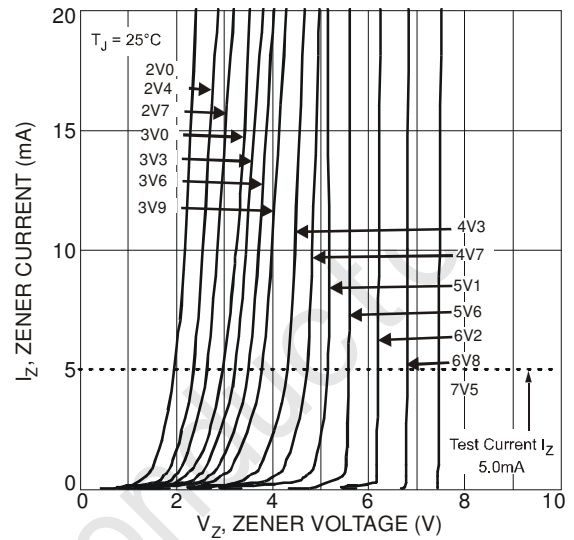


Fig. 2 Typical Zener Breakdown Characteristics



Fig. 3 Typical Zener Breakdown Characteristics

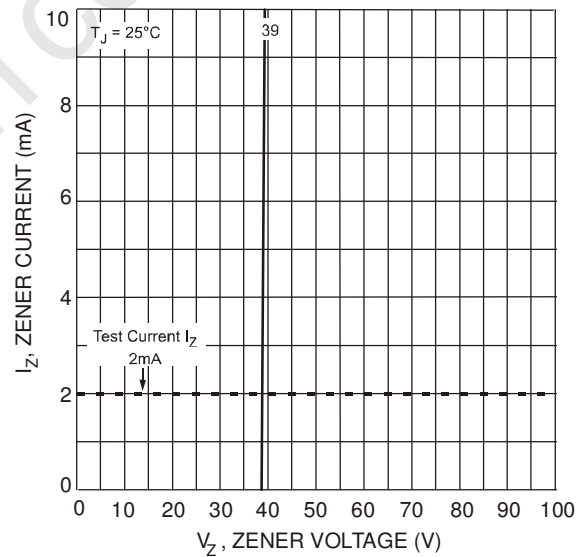


Fig. 4 Typical Zener Breakdown Characteristics



Fig. 5 Typical Temperature Coefficient of Zener Voltage

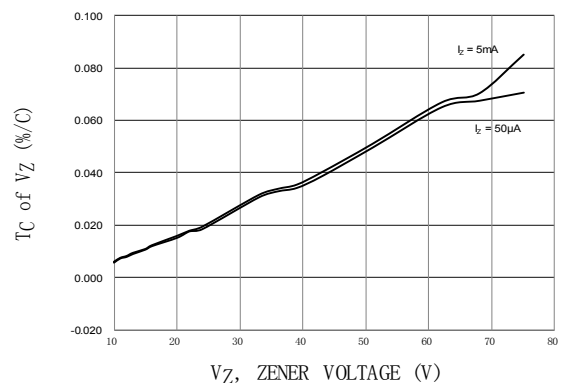
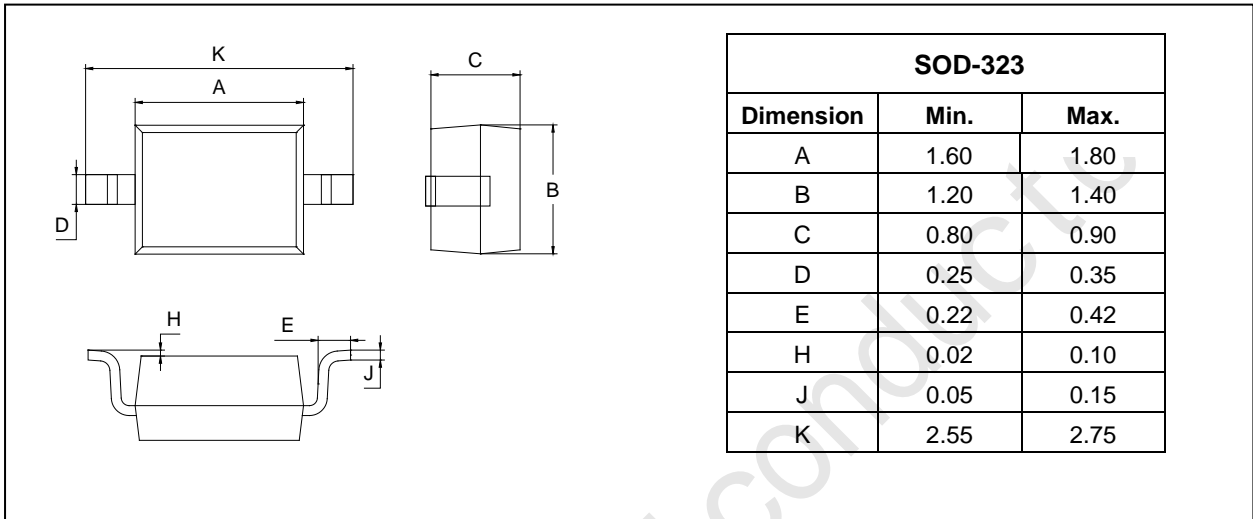


Fig. 6 Typical Temperature Coefficient of Zener Voltage

PACKAGE OUTLINE (Unit: mm)

Plastic surface mounted package


MOUNTING PAD LAYOUT (Unit: mm)

PACKAGE INFORMATION

| Part Number | Package | Shipping Quantity |
|--------------------------|---------|-----------------------|
| BZT52C2V0SQ - BZT52C75SQ | SOD-323 | 3000pcs / Tape & Reel |