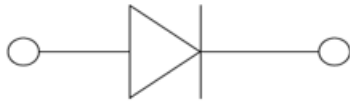


Small Signal Zener Diodes



SOD123

Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Zener Voltage 3.6V~47V
- V_z -tolerance $\pm 2\%$ approximately
- Part no. with suffix "Q" means AEC-Q101 qualified

Applications

- General regulation functions

Mechanical Data

- **Case:** SOD123
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■ Maximum Ratings ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | VALUE |
|-----------------------------------------------|-----------------|-----------------------------|-------------|
| Power Dissipation | P_D | mW | 500 |
| Storage Temperature Range | T_{stg} | $^\circ\text{C}$ | -55~+150 |
| Junction Temperature | T_J | $^\circ\text{C}$ | -55~+150 |
| Maximum Regulator Current | I_{ZM} | mA | P_D / V_z |
| Maximum Forward Voltage ($I_F=10\text{mA}$) | V_F | V | 0.9 |
| Thermal Resistance Junction to Ambient Air* | $R_{\theta JA}$ | $^\circ\text{C} / \text{W}$ | 340 |

■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|------------------------------|--------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| BZT52B3V6Q THRU BZT52B47Q | F2 | Approximate 0.01 | 3000 | 30000 | 120000 | 7" reel |



BZT52B3V6Q THRU BZT52B47Q

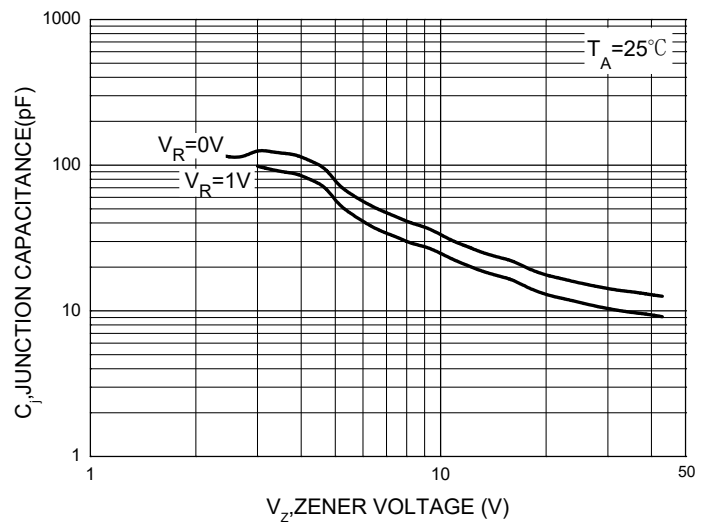
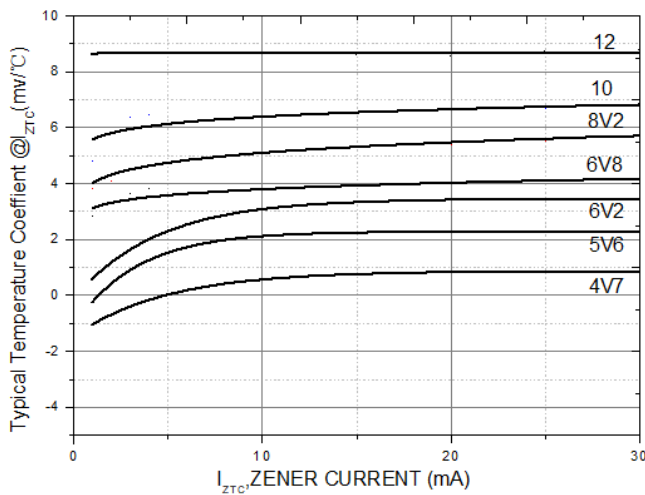
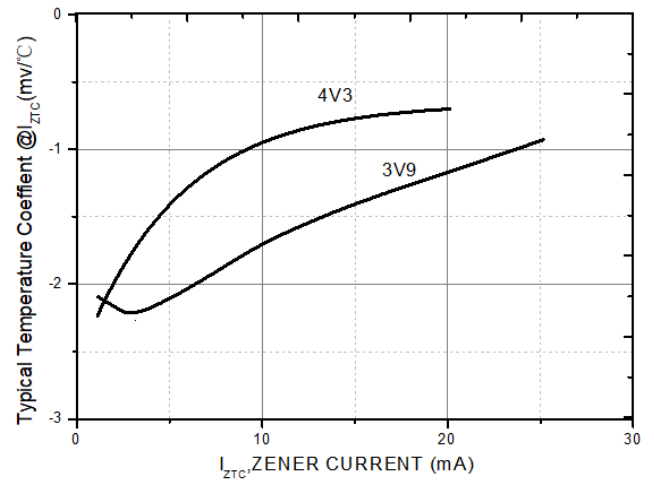
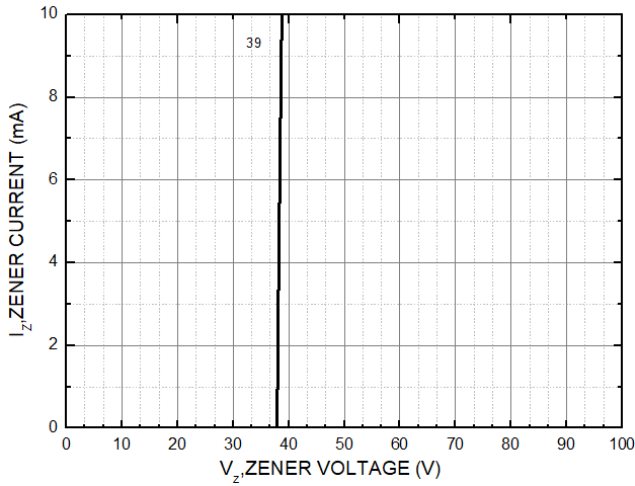
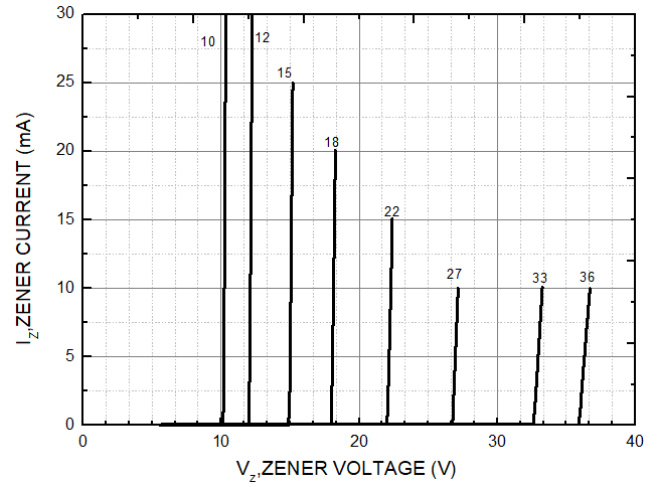
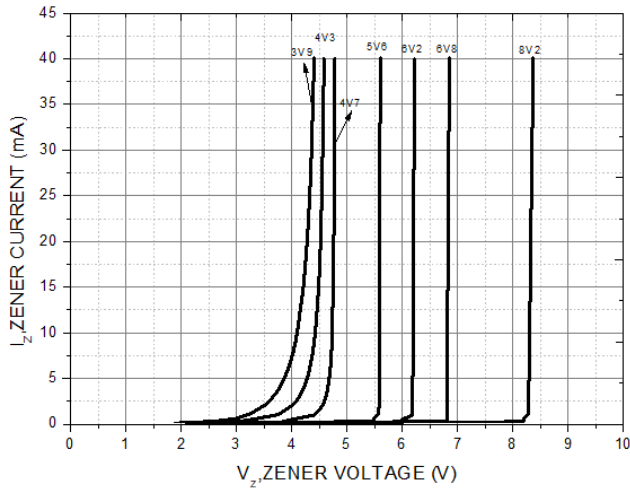
■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

| Type Number | Device Marking | V _z at I _z (V) | | | I _z mA | Z _z (Ω) | | Z _{zk} (Ω) | | I _R (μA)@V _R | | Typical Temperature Coefficient@ I _{zTC} mV/°C | | Test Current I _{zTC} mA |
|-------------|----------------|--------------------------------------|------|-------|----------------------|---------------------|------|----------------------|------|------------------------------------|--------------------|---------------------------------------------------------|------|----------------------------------|
| | | min. | typ. | max. | | I _z (mA) | max. | I _{zk} (mA) | max. | uA | V _R (V) | Min | Max | |
| BZT52B3V6Q | 2W4 | 3.53 | 3.6 | 3.67 | 5 | 5 | 90 | 1.0 | 600 | 5 | 1.0 | -3.5 | 0 | 5 |
| BZT52B3V9Q | 2W5 | 3.82 | 3.9 | 3.98 | 5 | 5 | 90 | 1.0 | 600 | 3 | 1.0 | -3.5 | 0 | 5 |
| BZT52B4V3Q | 2W6 | 4.21 | 4.3 | 4.39 | 5 | 5 | 90 | 1.0 | 600 | 3 | 1.0 | -3.5 | 0 | 5 |
| BZT52B4V7Q | 2W7 | 4.61 | 4.7 | 4.79 | 5 | 5 | 80 | 1.0 | 500 | 3 | 2.0 | -3.5 | 0.2 | 5 |
| BZT52B5V1Q | 2W8 | 5.0 | 5.1 | 5.2 | 5 | 5 | 60 | 1.0 | 480 | 2 | 2.0 | -2.7 | 1.2 | 5 |
| BZT52B5V6Q | 2W9 | 5.49 | 5.6 | 5.71 | 5 | 5 | 40 | 1.0 | 400 | 1 | 2.0 | -2 | 2.5 | 5 |
| BZT52B6V2Q | 2WA | 6.08 | 6.2 | 6.32 | 5 | 5 | 10 | 1.0 | 150 | 3 | 4.0 | 0.4 | 3.7 | 5 |
| BZT52B6V8Q | 2WB | 6.66 | 6.8 | 6.94 | 5 | 5 | 15 | 1.0 | 80 | 2 | 4.0 | 1.2 | 4.5 | 5 |
| BZT52B7V5Q | 2WC | 7.35 | 7.5 | 7.65 | 5 | 5 | 15 | 1.0 | 80 | 1 | 5.0 | 2.5 | 5.3 | 5 |
| BZT52B8V2Q | 2WD | 8.04 | 8.2 | 8.36 | 5 | 5 | 15 | 1.0 | 80 | 0.7 | 5.0 | 3.2 | 6.2 | 5 |
| BZT52B9V1Q | 2WE | 8.92 | 9.1 | 9.28 | 5 | 5 | 15 | 1.0 | 100 | 0.5 | 6.0 | 3.8 | 7.0 | 5 |
| BZT52B10Q | 2WF | 9.8 | 10 | 10.2 | 5 | 5 | 20 | 1.0 | 150 | 0.2 | 7.0 | 4.5 | 8.0 | 5 |
| BZT52B11Q | 2WG | 10.78 | 11 | 11.22 | 5 | 5 | 20 | 1.0 | 150 | 0.1 | 8.0 | 5.4 | 9.0 | 5 |
| BZT52B12Q | 2WH | 11.76 | 12 | 12.24 | 5 | 5 | 25 | 1.0 | 150 | 0.1 | 8.0 | 6.0 | 10.0 | 5 |
| BZT52B13Q | 2WI | 12.74 | 13 | 13.3 | 5 | 5 | 30 | 1.0 | 170 | 0.1 | 8.0 | 7.0 | 11.0 | 5 |
| BZT52B15Q | 2WJ | 14.7 | 15 | 15.3 | 5 | 5 | 30 | 1.0 | 200 | 0.1 | 10.5 | 9.2 | 13.0 | 5 |
| BZT52B16Q | 2WK | 15.68 | 16 | 16.3 | 5 | 5 | 40 | 1.0 | 200 | 0.1 | 11.2 | 10.4 | 14.0 | 5 |
| BZT52B18Q | 2WL | 17.6 | 18 | 18.4 | 5 | 5 | 45 | 1.0 | 225 | 0.1 | 12.6 | 12.4 | 16.0 | 5 |
| BZT52B20Q | 2WM | 19.6 | 20 | 20.4 | 5 | 5 | 55 | 1.0 | 225 | 0.1 | 14.0 | 14.4 | 18.0 | 5 |
| BZT52B22Q | 2WN | 21.56 | 22 | 22.44 | 5 | 5 | 55 | 1.0 | 250 | 0.1 | 15.4 | 16.4 | 20.0 | 5 |
| BZT52B24Q | 2WO | 23.52 | 24 | 24.5 | 5 | 5 | 70 | 1.0 | 250 | 0.1 | 16.8 | 18.4 | 22.0 | 5 |
| BZT52B27Q | 2WP | 26.46 | 27 | 27.54 | 2 | 2 | 80 | 0.5 | 300 | 0.1 | 18.9 | 21.4 | 25.3 | 2 |
| BZT52B30Q | 2WQ | 29.4 | 30 | 30.6 | 2 | 2 | 80 | 0.5 | 300 | 0.1 | 21.0 | 24.4 | 29.4 | 2 |
| BZT52B33Q | 2WR | 32.34 | 33 | 33.7 | 2 | 2 | 80 | 0.5 | 325 | 0.1 | 23.1 | 27.4 | 33.4 | 2 |
| BZT52B36Q | 2WS | 35.28 | 36 | 36.72 | 2 | 2 | 90 | 0.5 | 350 | 0.1 | 25.2 | 30.4 | 37.4 | 2 |
| BZT52B39Q | 2WT | 38.22 | 39 | 39.8 | 2 | 2 | 130 | 0.5 | 350 | 0.1 | 27.3 | 33.4 | 41.2 | 2 |
| BZT52B43Q | 2WU | 42.14 | 43 | 43.86 | 2 | 2 | 100 | 0.5 | 700 | 0.1 | 32 | 37.6 | 50.6 | 2 |
| BZT52B47Q | 2WV | 46.06 | 47 | 47.94 | 2 | 2 | 100 | 0.5 | 750 | 0.1 | 35 | 42.0 | 55.8 | 2 |



BZT52B3V6Q THRU BZT52B47Q

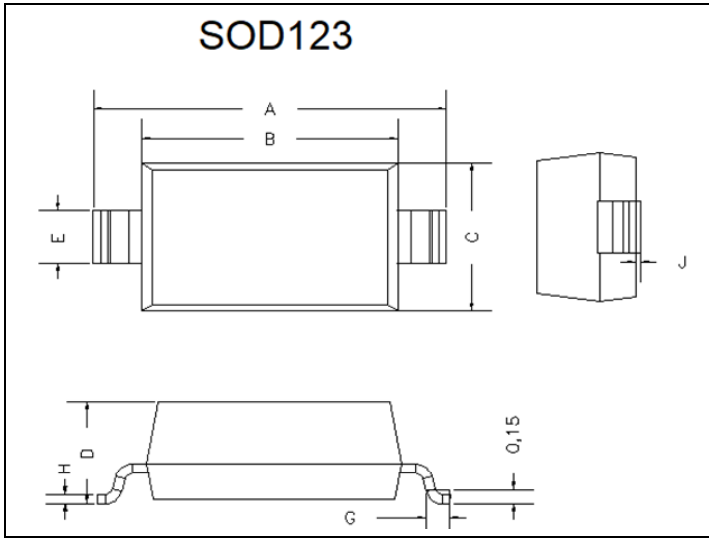
■ Characteristics (Typical)





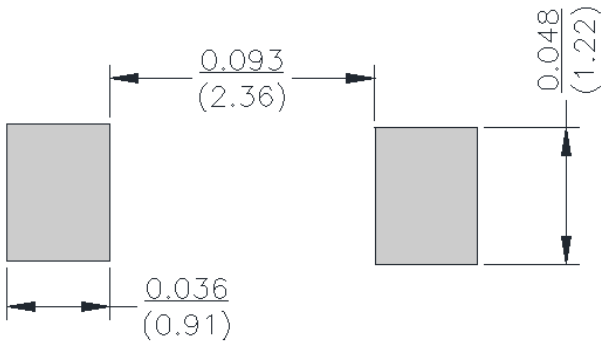
BZT52B3V6Q THRU BZT52B47Q

■ Outline Dimensions



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.140 | 0.152 | 3.55 | 3.85 | |
| B | 0.100 | 0.112 | 2.55 | 2.85 | |
| C | 0.055 | 0.071 | 1.40 | 1.80 | |
| D | - | 0.053 | - | 1.35 | |
| E | 0.012 | 0.031 | 0.30 | 0.78 | |
| G | 0.006 | - | 0.15 | - | |
| H | - | 0.010 | - | 0.25 | |
| J | - | 0.006 | - | 0.15 | |

■ Soldering Footprint



Unit: $\frac{\text{inch}}{\text{mm}}$



BZT52B3V6Q THRU BZT52B47Q

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