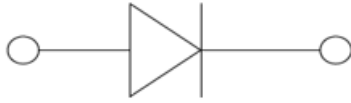


Small Signal Zener Diodes



SOD123

Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Zener Voltage 2.4V~47V
- V_z -tolerance $\pm 5\%$ 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 |
|------------------------------|--------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| BZT52C2V4Q THRU BZT52C47Q | F2 | Approximate 0.01 | 3000 | 30000 | 120000 | 7" reel |



BZT52C2V4Q THRU BZT52C47Q

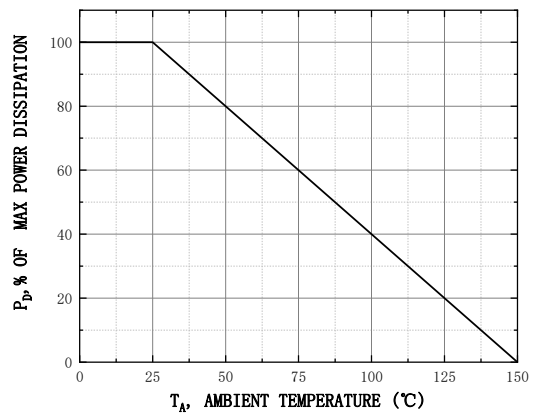
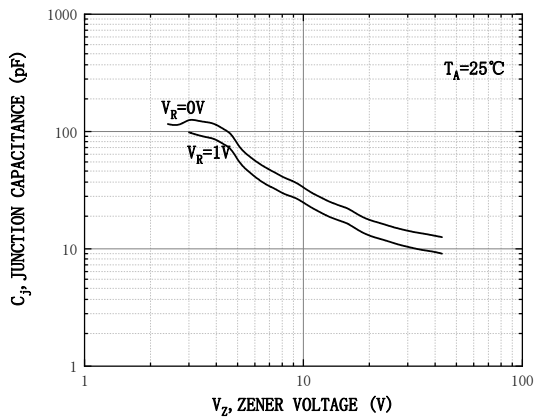
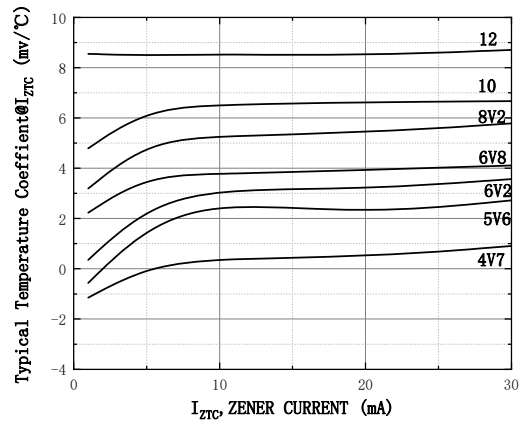
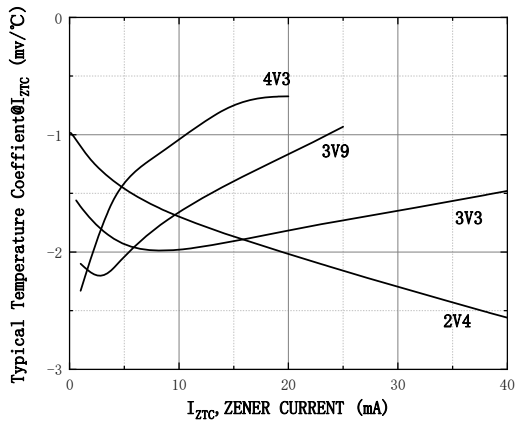
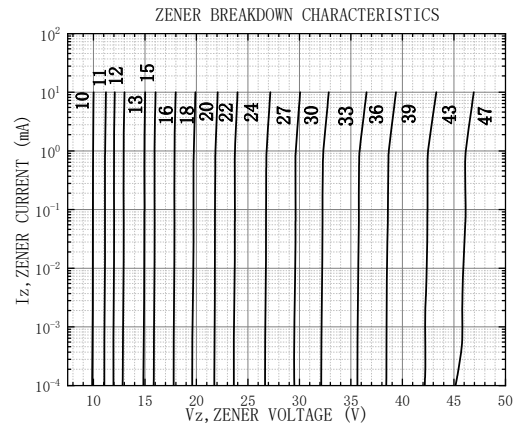
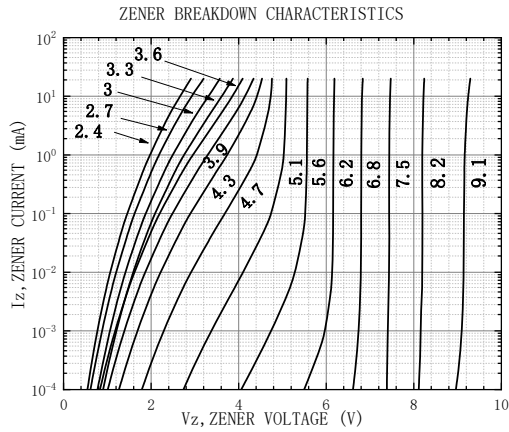
■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

| Type Number | Device Marking | V _z at I _{zt} (V) | | | I _{zt} mA | Z _{zt} (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 _{zt} (mA) | max. | I _{zk} (mA) | max. | uA | V _R (V) | Min | Max | |
| BZT52C2V4Q | WX | 2.28 | 2.4 | 2.56 | 5 | 5 | 100 | 1.0 | 600 | 50 | 1.0 | -3.5 | 0 | 5 |
| BZT52C2V7Q | W1 | 2.5 | 2.7 | 2.9 | 5 | 5 | 100 | 1.0 | 600 | 20 | 1.0 | -3.5 | 0 | 5 |
| BZT52C3V0Q | W2 | 2.8 | 3.0 | 3.2 | 5 | 5 | 95 | 1.0 | 600 | 10 | 1.0 | -3.5 | 0 | 5 |
| BZT52C3V3Q | W3 | 3.1 | 3.3 | 3.5 | 5 | 5 | 95 | 1.0 | 600 | 5 | 1.0 | -3.5 | 0 | 5 |
| BZT52C3V6Q | W4 | 3.4 | 3.6 | 3.8 | 5 | 5 | 90 | 1.0 | 600 | 5 | 1.0 | -3.5 | 0 | 5 |
| BZT52C3V9Q | W5 | 3.7 | 3.9 | 4.1 | 5 | 5 | 90 | 1.0 | 600 | 3 | 1.0 | -3.5 | 0 | 5 |
| BZT52C4V3Q | W6 | 4.0 | 4.3 | 4.6 | 5 | 5 | 90 | 1.0 | 600 | 3 | 1.0 | -3.5 | 0 | 5 |
| BZT52C4V7Q | W7 | 4.4 | 4.7 | 5.0 | 5 | 5 | 80 | 1.0 | 500 | 3 | 2.0 | -3.5 | 0.2 | 5 |
| BZT52C5V1Q | W8 | 4.8 | 5.1 | 5.4 | 5 | 5 | 60 | 1.0 | 480 | 2 | 2.0 | -2.7 | 1.2 | 5 |
| BZT52C5V6Q | W9 | 5.2 | 5.6 | 6.0 | 5 | 5 | 40 | 1.0 | 400 | 1 | 2.0 | -2 | 2.5 | 5 |
| BZT52C6V2Q | WA | 5.8 | 6.2 | 6.6 | 5 | 5 | 10 | 1.0 | 150 | 3 | 4.0 | 0.4 | 3.7 | 5 |
| BZT52C6V8Q | WB | 6.4 | 6.8 | 7.2 | 5 | 5 | 15 | 1.0 | 80 | 2 | 4.0 | 1.2 | 4.5 | 5 |
| BZT52C7V5Q | WC | 7.0 | 7.5 | 7.9 | 5 | 5 | 15 | 1.0 | 80 | 1 | 5.0 | 2.5 | 5.3 | 5 |
| BZT52C8V2Q | WD | 7.7 | 8.2 | 8.7 | 5 | 5 | 15 | 1.0 | 80 | 0.7 | 5.0 | 3.2 | 6.2 | 5 |
| BZT52C9V1Q | WE | 8.5 | 9.1 | 9.6 | 5 | 5 | 15 | 1.0 | 100 | 0.5 | 6.0 | 3.8 | 7.0 | 5 |
| BZT52C10Q | WF | 9.4 | 10 | 10.6 | 5 | 5 | 20 | 1.0 | 150 | 0.2 | 7.0 | 4.5 | 8.0 | 5 |
| BZT52C11Q | WG | 10.4 | 11 | 11.6 | 5 | 5 | 20 | 1.0 | 150 | 0.1 | 8.0 | 5.4 | 9.0 | 5 |
| BZT52C12Q | WH | 11.4 | 12 | 12.7 | 5 | 5 | 25 | 1.0 | 150 | 0.1 | 8.0 | 6.0 | 10.0 | 5 |
| BZT52C13Q | WI | 12.4 | 13 | 14.1 | 5 | 5 | 30 | 1.0 | 170 | 0.1 | 8.0 | 7.0 | 11.0 | 5 |
| BZT52C15Q | WJ | 13.8 | 15 | 15.6 | 5 | 5 | 30 | 1.0 | 170 | 0.1 | 10.5 | 9.2 | 13.0 | 5 |
| BZT52C16Q | WK | 15.3 | 16 | 17.1 | 5 | 5 | 40 | 1.0 | 170 | 0.1 | 11.2 | 10.4 | 14.0 | 5 |
| BZT52C18Q | WL | 16.8 | 18 | 19.1 | 5 | 5 | 45 | 1.0 | 225 | 0.1 | 12.6 | 12.4 | 16.0 | 5 |
| BZT52C20Q | WM | 18.8 | 20 | 21.2 | 5 | 5 | 55 | 1.0 | 225 | 0.1 | 14.0 | 14.4 | 18.0 | 5 |
| BZT52C22Q | WN | 20.8 | 22 | 23.3 | 5 | 5 | 55 | 1.0 | 250 | 0.1 | 15.4 | 16.4 | 20.0 | 5 |
| BZT52C24Q | WO | 22.8 | 24 | 25.6 | 5 | 5 | 70 | 1.0 | 250 | 0.1 | 16.8 | 18.4 | 22.0 | 5 |
| BZT52C27Q | WP | 25.1 | 27 | 28.9 | 2 | 2 | 80 | 0.5 | 300 | 0.1 | 18.9 | 21.4 | 25.3 | 2 |
| BZT52C30Q | WQ | 28 | 30 | 32 | 2 | 2 | 80 | 0.5 | 300 | 0.1 | 21.0 | 24.4 | 29.4 | 2 |
| BZT52C33Q | WR | 31 | 33 | 35 | 2 | 2 | 80 | 0.5 | 325 | 0.1 | 23.1 | 27.4 | 33.4 | 2 |
| BZT52C36Q | WS | 34 | 36 | 38 | 2 | 2 | 90 | 0.5 | 350 | 0.1 | 25.2 | 30.4 | 37.4 | 2 |
| BZT52C39Q | WT | 37 | 39 | 41 | 2 | 2 | 130 | 0.5 | 350 | 0.1 | 27.3 | 33.4 | 41.2 | 2 |
| BZT52C43Q | WU | 40 | 43 | 46 | 2 | 2 | 100 | 0.5 | 700 | 0.1 | 32 | 37.6 | 50.6 | 2 |
| BZT52C47Q | WV | 44 | 47 | 50 | 2 | 2 | 100 | 0.5 | 750 | 0.1 | 35 | 42.0 | 55.8 | 2 |



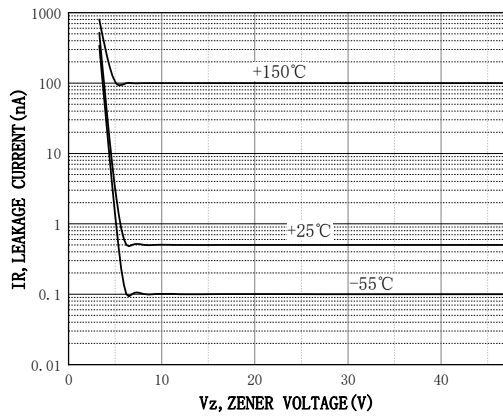
BZT52C2V4Q THRU BZT52C47Q

■ Characteristics (Typical)





BZT52C2V4Q THRU BZT52C47Q

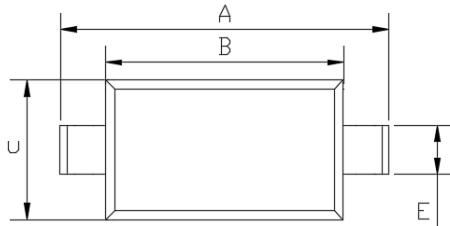




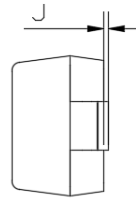
BZT52C2V4Q THRU BZT52C47Q

■ Outline Dimensions

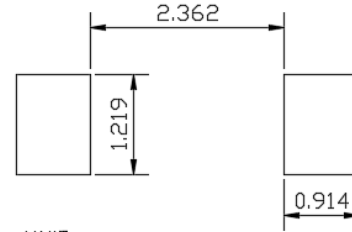
SOD-123



TOP VIEW

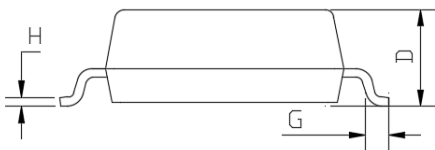


SIDE VIEW



UNIT: mm

SUGGESTED SOLDER PAD LAYOUT



SIDE VIEW

| DIMENSIONS | | | | |
|------------|--------|-------|-------|-------|
| DIM | INCHES | | MM | |
| | MIN | MAX | MIN | MAX |
| A | 0.140 | 0.152 | 3.550 | 3.850 |
| B | 0.100 | 0.112 | 2.550 | 2.850 |
| C | 0.055 | 0.071 | 1.400 | 1.800 |
| D | --- | 0.053 | --- | 1.350 |
| E | 0.020 | 0.028 | 0.510 | 0.710 |
| G | 0.006 | --- | 0.150 | --- |
| H | --- | 0.010 | --- | 0.250 |
| J | --- | 0.006 | --- | 0.150 |

■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. XX is Marking Code
4. Body color: Black



BZT52C2V4Q THRU BZT52C47Q

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