

DATA SHEET

ZENER DIODES

GENERAL VOLTAGE REGULATION

BZT52CXXW SERIES

RoHS compliant & Halogen free

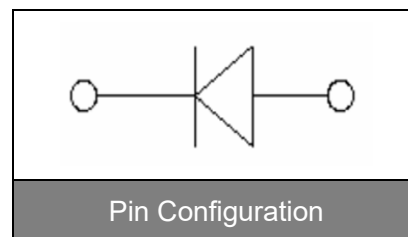
Product specification— May 14, 2026 V.1



Zener Diodes

Features

- Total power dissipation: max.500mW
- Zener voltage: 2.4V~75V
- Package: SOD-123
- Moisture sensitivity level 1
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102



Application

- Linear voltage regulator
- DC regulator
- Small-signal surge protection

Maximum Ratings (Ta = 25°C)

| Parameter | Symbol | Value | Unit |
|--------------------------------------|------------------|--------------------------------|------|
| Forward Voltage@I _F =10mA | V _F | 0.9 | V |
| Power Dissipation | P _D | 500 | mW |
| Maximum Regulator Current | I _{ZM} | P _D /V _Z | mA |
| Junction Temperature | T _J | -55 to +150 | °C |
| Storage Temperature Range | T _{stg} | -55 to +150 | °C |

Thermal Characteristics

| Parameter | Symbol | Max. | Unit |
|--|----------------------------------|------|------|
| Thermal Resistance Junction to Ambient | R _{θJ-A} ⁽¹⁾ | 250 | °C/W |
| Thermal Resistance Junction to Case | R _{θJ-C} ⁽¹⁾ | 200 | °C/W |

⁽¹⁾ Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 8mm*9mm copper pad areas.

Electrical Characteristics at Ta = 25°C

| Type | Marking Code | V _z (V)@I _{zt} | | | I _{zt} | Z _{zt} @I _{zt} | I _{zk} | Z _{zk} @I _{zk} | I _R @V _R | V _R |
|------------|--------------|------------------------------------|------|------|-----------------|----------------------------------|-----------------|----------------------------------|--------------------------------|----------------|
| | | Min. | Typ. | Max. | (mA) | Max(Ω) | (mA) | Max(Ω) | Max(μA) | (V) |
| BZT52C2V4W | WX. | 2.2 | 2.4 | 2.6 | 5 | 100 | 1.0 | 600 | 50 | 1.0 |
| BZT52C2V7W | W1. | 2.5 | 2.7 | 2.9 | 5 | 100 | 1.0 | 600 | 20 | 1.0 |
| BZT52C3V0W | W2. | 2.8 | 3.0 | 3.2 | 5 | 95 | 1.0 | 600 | 10 | 1.0 |
| BZT52C3V3W | W3. | 3.1 | 3.3 | 3.5 | 5 | 95 | 1.0 | 600 | 5 | 1.0 |
| BZT52C3V6W | W4. | 3.4 | 3.6 | 3.8 | 5 | 90 | 1.0 | 600 | 5 | 1.0 |

Zener Diodes

BZT52CXXW SERIES

| Type | Marking Code | Vzt (V)@Izt | | | Izt | Zzt@Izt | Izk | Zzk@Izk | IR@VR | VR |
|------------|--------------|-------------|------|------|------|---------|------|---------|---------|------|
| | | Min. | Typ. | Max. | (mA) | Max(Ω) | (mA) | Max(Ω) | Max(uA) | (V) |
| BZT52C3V9W | W5. | 3.7 | 3.9 | 4.1 | 5 | 90 | 1.0 | 600 | 3 | 1.0 |
| BZT52C4V3W | W6. | 4.0 | 4.3 | 4.6 | 5 | 90 | 1.0 | 600 | 3 | 1.0 |
| BZT52C4V7W | W7. | 4.4 | 4.7 | 5.0 | 5 | 80 | 1.0 | 500 | 3 | 2.0 |
| BZT52C5V1W | W8. | 4.8 | 5.1 | 5.4 | 5 | 60 | 1.0 | 480 | 2 | 2.0 |
| BZT52C5V6W | W9. | 5.2 | 5.6 | 6.0 | 5 | 40 | 1.0 | 400 | 1 | 2.0 |
| BZT52C6V2W | WA. | 5.8 | 6.2 | 6.6 | 5 | 10 | 1.0 | 150 | 3 | 4.0 |
| BZT52C6V8W | WB. | 6.4 | 6.8 | 7.2 | 5 | 15 | 1.0 | 80 | 2 | 4.0 |
| BZT52C7V5W | WC. | 7.0 | 7.5 | 7.9 | 5 | 15 | 1.0 | 80 | 1 | 5.0 |
| BZT52C8V2W | WD. | 7.7 | 8.2 | 8.7 | 5 | 15 | 1.0 | 80 | 0.7 | 5.0 |
| BZT52C9V1W | WE. | 8.5 | 9.1 | 9.6 | 5 | 15 | 1.0 | 100 | 0.5 | 6.0 |
| BZT52C10W | WF. | 9.4 | 10 | 10.6 | 5 | 20 | 1.0 | 150 | 0.2 | 7.0 |
| BZT52C11W | WG. | 10.4 | 11 | 11.6 | 5 | 20 | 1.0 | 150 | 0.1 | 8.0 |
| BZT52C12W | WH. | 11.4 | 12 | 12.7 | 5 | 25 | 1.0 | 150 | 0.1 | 8.0 |
| BZT52C13W | WI. | 12.4 | 13 | 14.1 | 5 | 30 | 1.0 | 170 | 0.1 | 8.0 |
| BZT52C15W | WJ. | 13.8 | 15 | 15.6 | 5 | 30 | 1.0 | 200 | 0.1 | 10.5 |
| BZT52C16W | WK. | 15.3 | 16 | 17.1 | 5 | 40 | 1.0 | 200 | 0.1 | 11.2 |
| BZT52C18W | WL. | 16.8 | 18 | 19.1 | 5 | 45 | 1.0 | 225 | 0.1 | 12.6 |
| BZT52C20W | WM. | 18.8 | 20 | 21.2 | 5 | 55 | 1.0 | 225 | 0.1 | 14.0 |
| BZT52C22W | WN. | 20.8 | 22 | 23.3 | 5 | 55 | 1.0 | 250 | 0.1 | 15.4 |
| BZT52C24W | WO. | 22.8 | 24 | 25.6 | 5 | 70 | 1.0 | 250 | 0.1 | 16.8 |
| BZT52C27W | WP. | 25.1 | 27 | 28.9 | 2 | 80 | 0.5 | 300 | 0.1 | 18.9 |
| BZT52C30W | WQ. | 28 | 30 | 32 | 2 | 80 | 0.5 | 300 | 0.1 | 21.0 |
| BZT52C33W | WR. | 31 | 33 | 35 | 2 | 80 | 0.5 | 325 | 0.1 | 23.1 |
| BZT52C36W | WS. | 34 | 36 | 38 | 2 | 90 | 0.5 | 350 | 0.1 | 25.2 |
| BZT52C39W | WT. | 37 | 39 | 41 | 2 | 130 | 0.5 | 350 | 0.1 | 27.3 |
| BZT52C43W | WU. | 40 | 43 | 46 | 5 | 100 | 1.0 | 750 | 0.1 | 32 |
| BZT52C47W | WV. | 44 | 47 | 50 | 5 | 100 | 1.0 | 750 | 0.1 | 35 |
| BZT52C51W | WW. | 48 | 51 | 54 | 2 | 180 | 0.5 | 400 | 0.05 | 35.7 |
| BZT52C56W | X1. | 53 | 56 | 59 | 2 | 200 | 1 | 1000 | 0.1 | 42 |
| BZT52C62W | 5X2. | 58 | 62 | 66 | 2 | 215 | 0.5 | 450 | 0.05 | 43.4 |
| BZT52C68W | 5X3. | 64 | 68 | 72 | 2 | 240 | 0.5 | 475 | 0.05 | 47.6 |
| BZT52C75W | 5X4. | 70 | 75 | 79 | 2 | 255 | 0.5 | 500 | 0.05 | 52.5 |



Electrical Characteristic Curves

Figure 1. Zener Characteristics Curve

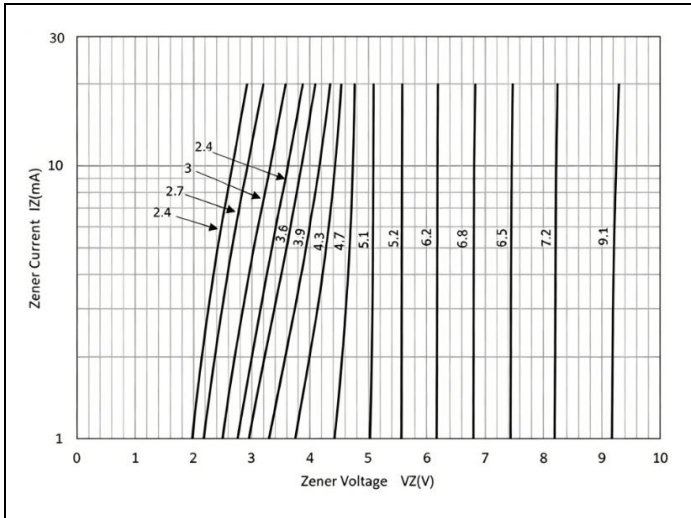


Figure 2. Zener Characteristics Curve

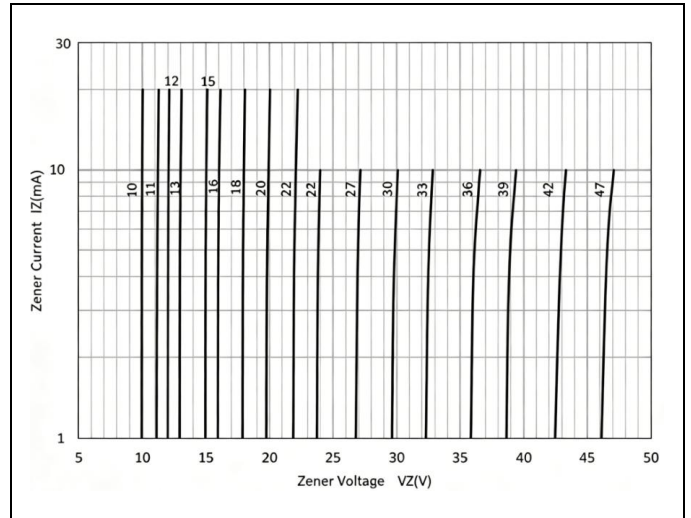


Figure 3. Zener Characteristics Curve

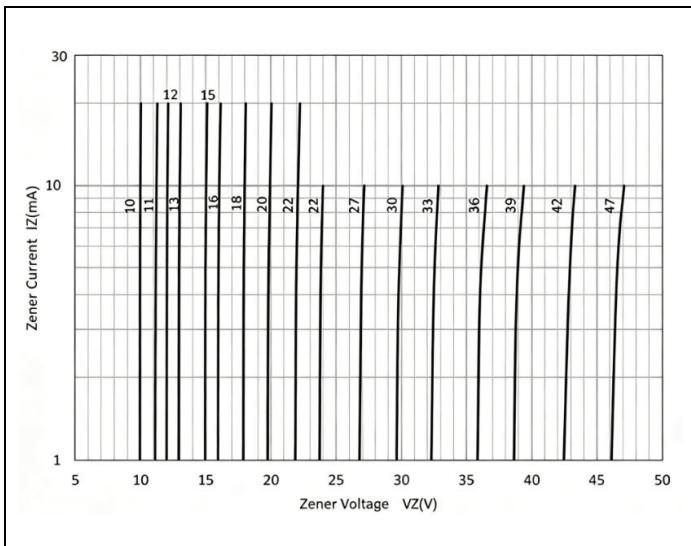
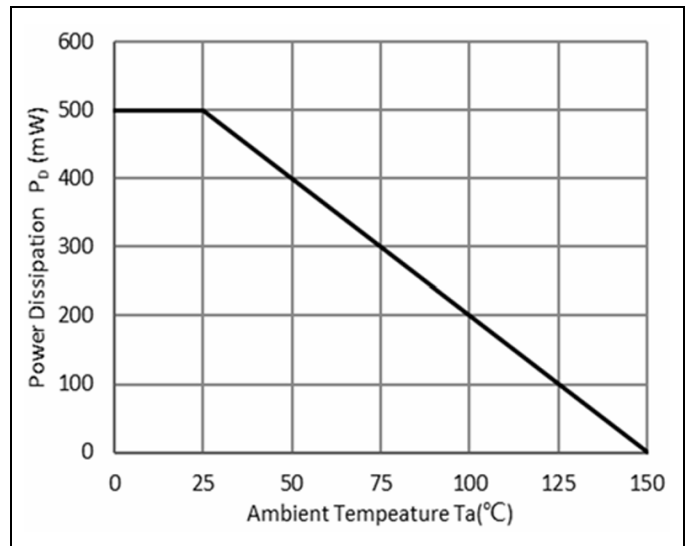


Figure 4. P_D - T_a Curve



Dimensions (SOD-123)

| Symbol | Dimension (mm) | | | |
|----------|----------------|------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 3.55 | 3.85 | 0.140 | 0.152 |
| B | 2.55 | 2.85 | 0.100 | 0.112 |
| C | 1.40 | 1.80 | 0.055 | 0.071 |
| D | 0.95 | 1.35 | 0.037 | 0.053 |
| E | 0.51 | 0.71 | 0.020 | 0.028 |
| G | 0.15 | 0.45 | 0.006 | 0.018 |
| H | 0.08 | 0.25 | 0.003 | 0.010 |
| J | 0.00 | 0.15 | 0.000 | 0.006 |
| θ | 0 | 8° | 0 | 8° |

Packing

| Tape | | Symbol | Dimension(mm) |
|------|--|-------------------|---------------|
| | | W | 8.00±0.20 |
| | | P0 | 4.00±0.10 |
| | | P1 | 4.00±0.10 |
| | | P2 | 2.00±0.10 |
| | | R | Φ1.50±0.10 |
| | | R0 | Φ1.00±0.25 |
| | | E | 1.75±0.10 |
| | | F | 3.50±0.05 |
| | | A0 | 1.75±0.10 |
| | | B0 | 3.94±0.10 |
| | | B1 | 2.59±0.20 |
| | | T | 0.20±0.02 |
| | | T1 | 1.52±0.10 |
| Reel | | D | Φ178±1.0 |
| | | D2 | Φ13.5±0.30 |
| | | W1 | 9.3±1.5 |
| | | Quantity: 3000PCS | |

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