



BZT52CXXXS

ZENER DIODE

SURFACE MOUNT ZENER DIODE

■ DESCRIPTION

The UTC **BZT52CXXXS** is surface mount zener diode. it uses UTC's advanced technology to provide the customers with low leakage current, etc.

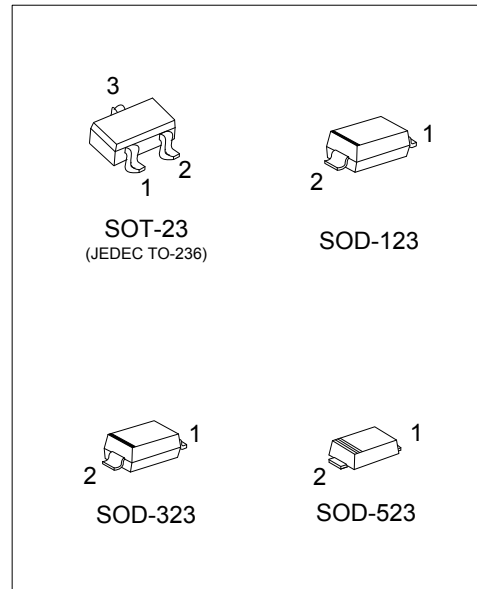
The UTC **BZT52CXXXS** is suitable for automated assembly processes, etc.

■ FEATURES

* Low leakage current

■ SYMBOL

| | |
|--------|-----------------------------|
| SOT-23 | SOD-123 / SOD-323 / SOD-523 |
| | |



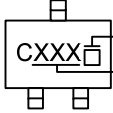
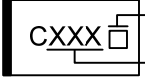
■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-------------------|-------------------|---------|----------------|----|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| BZT52CXXXSL-AE3-R | BZT52CXXXSG-AE3-R | SOT-23 | A | NC | K | Tape Reel |
| BZT52CXXXSL-CA2-R | BZT52CXXXSG-CA2-R | SOD-123 | A | K | - | Tape Reel |
| BZT52CXXXSL-CB2-R | BZT52CXXXSG-CB2-R | SOD-323 | A | K | - | Tape Reel |
| BZT52CXXXSL-CC2-R | BZT52CXXXSG-CC2-R | SOD-523 | A | K | - | Tape Reel |

Note: Pin Assignment: A: Anode K: Cathode

| | |
|--|---|
| <p>BZT52CXXXSG-AE3-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p> | <p>(1) R: Tape Reel (2) AE3: SOT-23, CA2 : SOD-123, CB2: SOD-323 CC2: SOD-523 (3) G: Halogen Free and Lead Free, L: Lead Free</p> |
|--|---|

MARKING INFORMATION

| PACKAGE | VOLTAGE CODE | | MARKING |
|-------------------------------|--------------|---------|---|
| SOT-23 | 2.0: 2.0V | 10: 10V |  <p>L: Lead Free G: Halogen Free Voltage Code</p> |
| | 2.4: 2.4V | 11: 11V | |
| | 2.7: 2.7V | 12: 12V | |
| | 3.0: 3.0V | 13: 13V | |
| | 3.3: 3.3V | 15: 15V | |
| | 3.6: 3.6V | 16: 16V | |
| | 3.9: 3.9V | 18: 18V | |
| | 4.3: 4.3V | 20: 20V | |
| | 4.7: 4.7V | 22: 22V | |
| | 5.1: 5.1V | 24: 24V | |
| SOD-123 SOD-323 SOD-523 | 5.6: 5.6V | 27: 27V |  <p>L: Lead Free G: Halogen Free Voltage Code</p> |
| | 6.2: 6.2V | 30: 30V | |
| | 6.8: 6.8V | 33: 33V | |
| | 7.5: 7.5V | 36: 36V | |
| | 8.2: 8.2V | 39: 39V | |
| | 9.1: 9.1V | | |

BZT52CXXS

ZENER DIODE

■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

Single phase, half wave, 60Hz, resistive or inductive load. For capacitance load, derate current by 20%.

| PARAMETER | | SYMBOL | RATINGS | UNIT |
|--------------------------------|-------------------|-----------|------------|--------------------|
| Forward Voltage | $I_F=10\text{mA}$ | V_F | 0.9 | V |
| Thermal characteristics | | | | |
| Power Dissipation (Note 2) | SOT-23 | P_D | 200 | mW |
| | SOD-123 | | 500 | mW |
| | SOD-323 | | 330 | mW |
| | SOD-523 | | 250 | mW |
| Operating Temperature | | T_J | -55 ~ +150 | $^{\circ}\text{C}$ |
| Storage Temperature | | T_{STG} | -55 ~ +150 | $^{\circ}\text{C}$ |

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Mounted on 5.0mm² (.013mm thick) land areas.

■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

($V_F = 0.9\text{V Max @ } I_F = 10\text{mA}$ for all types.)

| Part Number | Marking Code | Nominal Zener Voltage | | | Max Zener Impedance | | | | Max Reverse Leakage Current (Note) | |
|-------------|--------------|-----------------------|-------|-------|---------------------|------|-------------------|------|------------------------------------|------|
| | | $V_Z @ I_{ZT}$ (V) | | | $Z_{ZT} @ I_{ZT}$ | | $Z_{ZK} @ I_{ZK}$ | | $I_R @ V_R$ | |
| | | MIN | TYP | MAX | (Ω) | (mA) | (Ω) | (mA) | (μA) | (V) |
| BZT52C2V0S | 2.0 | 1.91 | 2.00 | 2.09 | 100 | 5 | 600 | 1.0 | 150 | 1.0 |
| BZT52C2V4S | 2.4 | 2.20 | 2.40 | 2.60 | 100 | 5 | 600 | 1.0 | 50 | 1.0 |
| BZT52C2V7S | 2.7 | 2.50 | 2.70 | 2.90 | 100 | 5 | 600 | 1.0 | 20 | 1.0 |
| BZT52C3S | 3.0 | 2.80 | 3.00 | 3.20 | 100 | 5 | 600 | 1.0 | 10 | 1.0 |
| BZT52C3V3S | 3.3 | 3.10 | 3.30 | 3.50 | 95 | 5 | 600 | 1.0 | 5 | 1.0 |
| BZT52C3V6S | 3.6 | 3.40 | 3.60 | 3.80 | 95 | 5 | 600 | 1.0 | 5 | 1.0 |
| BZT52C3V9S | 3.9 | 3.70 | 3.90 | 4.10 | 90 | 5 | 600 | 1.0 | 3 | 1.0 |
| BZT52C4V3S | 4.3 | 4.00 | 4.30 | 4.60 | 90 | 5 | 600 | 1.0 | 3 | 1.0 |
| BZT52C4V7S | 4.7 | 4.40 | 4.70 | 5.00 | 90 | 5 | 500 | 1.0 | 2 | 2.0 |
| BZT52C5V1S | 5.1 | 4.80 | 5.10 | 5.40 | 60 | 5 | 480 | 1.0 | 1 | 2.0 |
| BZT52C5V6S | 5.6 | 5.20 | 5.60 | 6.00 | 40 | 5 | 400 | 1.0 | 3 | 2.0 |
| BZT52C6V2S | 6.2 | 5.80 | 6.20 | 6.60 | 10 | 5 | 150 | 1.0 | 2 | 4.0 |
| BZT52C6V8S | 6.8 | 6.40 | 6.80 | 7.20 | 15 | 5 | 80 | 1.0 | 1 | 4.0 |
| BZT52C7V5S | 7.5 | 7.00 | 7.50 | 7.90 | 15 | 5 | 80 | 1.0 | 0.7 | 5.0 |
| BZT52C8V2S | 8.2 | 7.70 | 8.20 | 8.70 | 15 | 5 | 80 | 1.0 | 0.5 | 5.0 |
| BZT52C9V1S | 9.1 | 8.50 | 9.10 | 9.60 | 15 | 5 | 100 | 1.0 | 0.2 | 6.0 |
| BZT52C10S | 10 | 9.40 | 10.00 | 10.60 | 15 | 5 | 150 | 1.0 | 0.1 | 7.0 |
| BZT52C11S | 11 | 10.40 | 11.00 | 11.60 | 15 | 5 | 150 | 1.0 | 0.1 | 8.0 |
| BZT52C12S | 12 | 11.40 | 12.00 | 12.70 | 25 | 5 | 150 | 1.0 | 0.1 | 8.0 |
| BZT52C13S | 13 | 12.40 | 13.00 | 14.10 | 30 | 5 | 170 | 1.0 | 0.1 | 8.0 |
| BZT52C15S | 15 | 13.80 | 15.00 | 15.60 | 30 | 5 | 200 | 1.0 | 0.1 | 10.5 |
| BZT52C16S | 16 | 15.30 | 16.00 | 17.10 | 40 | 5 | 200 | 1.0 | 0.1 | 11.2 |
| BZT52C18S | 18 | 16.80 | 18.00 | 19.10 | 45 | 5 | 225 | 1.0 | 0.1 | 12.6 |
| BZT52C20S | 20 | 18.80 | 20.00 | 21.20 | 55 | 5 | 225 | 1.0 | 0.1 | 14.4 |
| BZT52C22S | 22 | 20.80 | 22.00 | 23.30 | 55 | 5 | 250 | 1.0 | 0.1 | 16.4 |
| BZT52C24S | 24 | 22.80 | 24.00 | 25.60 | 70 | 5 | 250 | 1.0 | 0.1 | 18.4 |
| BZT52C27S | 27 | 25.10 | 27.00 | 28.90 | 80 | 2 | 300 | 0.5 | 0.1 | 21.4 |
| BZT52C30S | 30 | 28.00 | 30.00 | 32.00 | 80 | 2 | 300 | 0.5 | 0.1 | 24.4 |
| BZT52C33S | 33 | 31.00 | 33.00 | 35.00 | 80 | 2 | 325 | 0.5 | 0.1 | 27.4 |

■ ELECTRICAL CHARACTERISTICS (Cont.)

| Part Number | Marking Code | Nominal Zener Voltage | | | Max Zener Impedance | | | | Max Reverse Leakage Current (Note) | |
|-------------|--------------|--------------------------------------|-------|-------|-----------------------------------|------|-----------------------------------|------|------------------------------------|------|
| | | V _Z @ I _{ZT} (V) | | | Z _{ZT} @ I _{ZT} | | Z _{ZK} @ I _{ZK} | | I _R @ V _R | |
| | | MIN | TYP | MAX | (Ω) | (mA) | (Ω) | (mA) | (μA) | (V) |
| BZT52C36S | 36 | 34.00 | 36.00 | 38.00 | 90 | 2 | 350 | 0.5 | 0.1 | 30.4 |
| BZT52C39S | 39 | 37.00 | 39.00 | 41.00 | 130 | 2 | 350 | 0.5 | 0.1 | 33.4 |

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

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