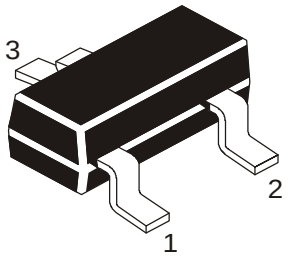
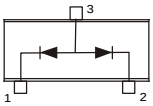
## SILIICON PLANAR ZENER DIODES

**CZMA3V9-47V**




**Pin Configuration**
1 = CATHODE
2 = CATHODE
3 = ANODE

**SOT-23**
**Formed SMD Package**

**For Lead Free Parts, Device Part # will be Prefixed with "T"**



## Dual Zener Diodes, Common Anode

**ABSOLUTE MAXIMUM RATINGS per diode ($T_a$=25°C unless specified otherwise)**

| DESCRIPTION | SYMBOL | VALUE | UNIT |
|---|---|---|---|
| Working Voltage Range | $V_Z$ | 3V9 to 39 | V |
| Working Voltage Tolerance | | ± 5 | % |
| Repetitive Peak Forward Current | $I_{FRM}$ | 250 | mA |
| Repetitive Peak Working Current | $I_{ZRM}$ | 250 | mA |
| Power Dissipation upto $T_a$=25ºC | *$P_{tot}$ | 300 | mW |
| Power Dissipation upto $T_a$=25ºC | **$P_{tot}$ | 250 | mW |
| Storage Temperature | $T_j$ | 150 | °C |
| Junction Temperature | $T_{stg}$ | - 55 to +150 | °C |
| **Thermal Resistance | | | |
| From Junction to Ambient | $R_{th\ (j-a)}$ | 420 | K/W |

*** Device mounted on a ceramic alumna**
**** Device mounted on an FR5 printed circuit board**

**ELECTRICAL CHARACTERISTICS per diode ($T_a$=25°C $V_F$ < 0.9V max, $I_F$=10mA)**

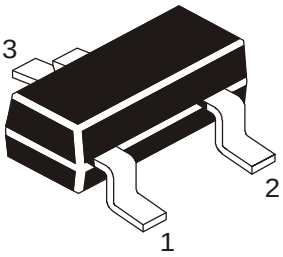
| Device | Working Voltage ***$V_Z$ (V) at $I_Z$ test=5mA | | Differential Resistance $r_{diff}$ (Ω) at $I_Z$ test=5mA | | Reverse Current $I_R$ at $V_R$ | | Temperature Coefficient $S_Z$ (mV/K) at $I_Z$ test=5mA | | | Differential Resistance $r_{diff}$ (Ω) at $I_Z$ test=5mA | | Marking |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | min | max | typ | max | mA | V | min | typ | max | typ | max | |
| CZMA 3.9 | 3.70 | 4.10 | 85 | 90 | 3.0 | 1 | -3.5 | -2.5 | 0 | 400 | 600 | D3.9 |
| CZMA 4.3 | 4.00 | 4.60 | 80 | 90 | 3.0 | 1 | -3.5 | -2.5 | 0 | 410 | 600 | D4.3 |
| CZMA 4.7 | 4.40 | 5.00 | 50 | 80 | 3.0 | 2 | -3.5 | -1.4 | 0.2 | 425 | 500 | D4.7 |
| CZMA 5.1 | 4.80 | 5.40 | 40 | 60 | 2.0 | 2 | -2.7 | -0.8 | 1.2 | 400 | 480 | D5.1 |
| CZMA 5.6 | 5.20 | 6.00 | 15 | 40 | 1.0 | 2 | -2.0 | -1.2 | 2.5 | 80 | 400 | D5.6 |
| CZMA 6.2 | 5.80 | 6.60 | 6 | 10 | 3.0 | 4 | 0.4 | 2.3 | 3.7 | 40 | 150 | D6.2 |
| CZMA 6.8 | 6.40 | 7.20 | 6 | 15 | 2.0 | 4 | 1.2 | 3.0 | 4.5 | 30 | 80 | D6.8 |
| CZMA 7.5 | 7.00 | 7.90 | 6 | 15 | 1.0 | 5 | 2.5 | 4.0 | 5.3 | 30 | 80 | D7.5 |
| CZMA 8.2 | 7.70 | 8.70 | 6 | 15 | 0.7 | 5 | 3.2 | 4.6 | 6.2 | 40 | 80 | D8.2 |
| CZMA 9.1 | 8.50 | 9.60 | 6 | 15 | 0.5 | 6 | 3.8 | 5.5 | 7.0 | 40 | 100 | D9.1 |
| CZMA 10 | 9.40 | 10.60 | 8 | 20 | 0.2 | 7 | 4.5 | 6.4 | 8.0 | 50 | 150 | D10 |

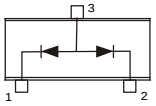
CZMA3.9_47VRev_1 071005E

***Pulse test 20ms ≤ $t_p$ ≤50ms

## SILIICON PLANAR ZENER DIODES

## CZMA3V9-47V




**Pin Configuration**
1 = CATHODE
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**SOT-23**
**Formed SMD Package**
**For Lead Free Parts, Device Part # will be Prefixed with "T"**

**ELECTRICAL CHARACTERISTICS per diode ($T_a$=25°C $V_F$ < 0.9V max, $I_F$=10mA)**

| Device | Working Voltage ***$V_Z$ (V) at $I_Z$ test=5mA | | Differential Resistance $r_{diff}$ (W) at $I_Z$ test=5mA | | Reverse Current $I_R$ at $V_R$ | | Temperature Coefficient $S_Z$ (mV/K) at $I_Z$ test=5mA | | | Differential Resistance $r_{diff}$ (W) at $I_Z$ test=1mA | | Marking |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | min | max | typ | max | mA | V | min | typ | max | typ | max | |
| CZMA 11 | 10.40 | 11.60 | 10 | 20 | 0.1 | 8.0 | 5.4 | 7.4 | 9.0 | 50 | 150 | D11 |
| CZMA 12 | 11.40 | 12.70 | 10 | 25 | 0.1 | 8.0 | 6.0 | 8.4 | 10 | 50 | 150 | D12 |
| CZMA 13 | 12.40 | 14.10 | 10 | 30 | 0.1 | 8.0 | 7.0 | 9.4 | 11 | 50 | 170 | D13 |
| CZMA 15 | 13.80 | 15.60 | 10 | 30 | 0.05 | 10.5 | 9.2 | 11.4 | 13 | 50 | 200 | D15 |
| CZMA 16 | 15.30 | 17.10 | 10 | 40 | 0.05 | 11.2 | 10.4 | 12.4 | 14 | 50 | 200 | D16 |
| CZMA 18 | 16.80 | 19.10 | 10 | 45 | 0.05 | 12.6 | 12.4 | 14.4 | 16 | 50 | 225 | D18 |
| CZMA 20 | 18.80 | 21.20 | 15 | 55 | 0.05 | 14.0 | 14.4 | 16.4 | 18 | 60 | 225 | D20 |
| CZMA 22 | 20.80 | 23.30 | 20 | 55 | 0.05 | 15.4 | 16.4 | 18.4 | 20 | 60 | 250 | D22 |
| CZMA 24 | 22.80 | 25.60 | 25 | 70 | 0.05 | 16.8 | 18.4 | 20.4 | 22 | 60 | 250 | D24 |
| | at $I_Z$ test=2mA | | at $I_Z$ test=2mA | | | | at $I_Z$ test=2mA | | | at Iz test=0.5mA | | |
| CZMA 27 | 25.10 | 28.90 | 25 | 80 | 0.05 | 18.9 | 21.4 | 23.4 | 25.3 | 65 | 300 | D27 |
| CZMA 30 | 28.00 | 32.00 | 30 | 80 | 0.05 | 21.0 | 24.4 | 26.6 | 29.4 | 70 | 300 | D30 |
| CZMA 33 | 31.00 | 35.00 | 35 | 80 | 0.05 | 23.1 | 27.4 | 29.7 | 33.4 | 75 | 325 | D33 |
| CZMA 36 | 34.00 | 38.00 | 35 | 90 | 0.05 | 25.2 | 30.4 | 33.0 | 37.4 | 80 | 350 | D36 |
| CZMA 39 | 37.00 | 41.00 | 40 | 130 | 0.05 | 27.3 | 33.4 | 36.4 | 41.2 | 80 | 350 | D39 |
| CZMA 43 | 40.00 | 46.00 | 45 | 150 | 0.05 | 30.1 | 37.6 | 41.2 | 46.6 | 85 | 375 | D43 |
| CZMA 47 | 44.00 | 50.00 | 50 | 170 | 0.05 | 32.9 | 42.0 | 46.1 | 51.8 | 85 | 375 | D47 |



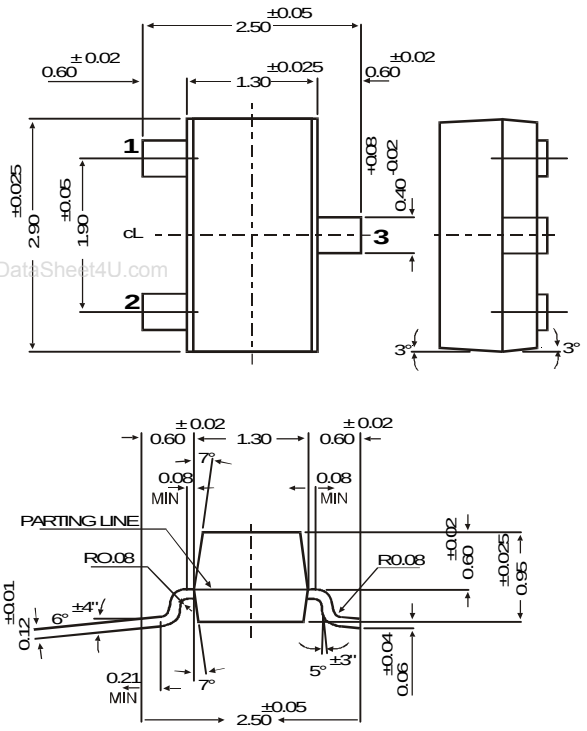
**CZMA3.9_47VRev_1 071005E**

***Pulse test 20ms ≤ $t_p$ ≤50ms

**CZMA3V9-47V**

**SOT-23**
**Formed SMD Package**
**For Lead Free Parts, Device Part # will be Prefixed with "T"**

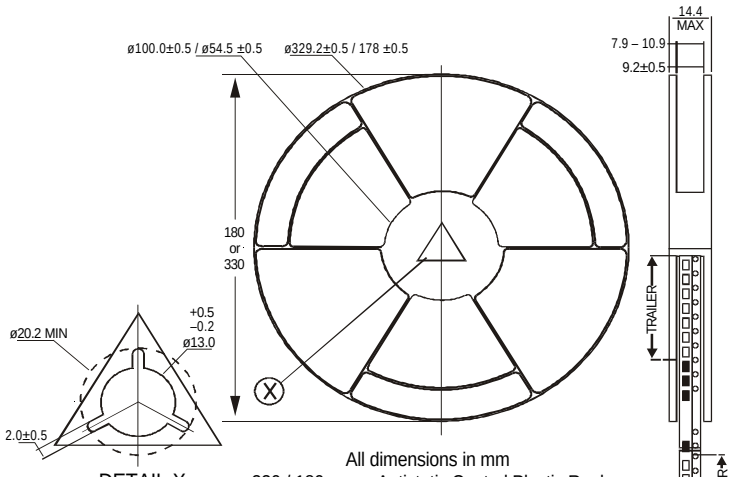
## SOT-23 Formed SMD Package






## SOT-23 Package Reel Information

**Reel specification for W" Packing (13" reel)**




DETAIL X

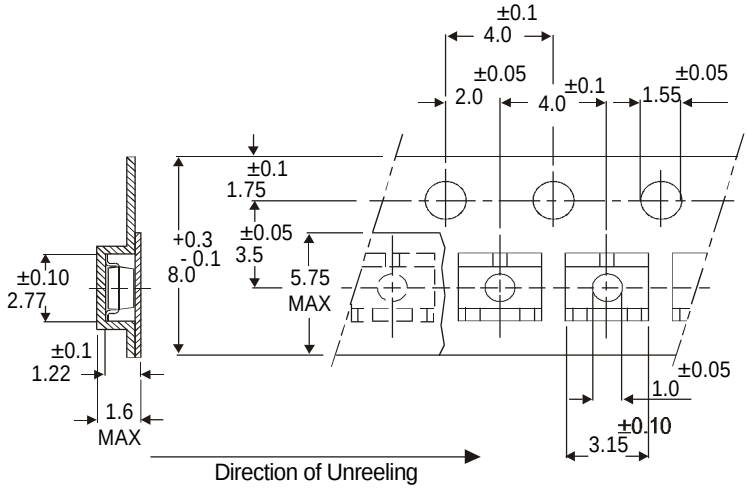
All dimensions in mm
330 / 180 mm – Antistatic Coated Plastic Reel

NOTES:

| | 8mm Tape Size of Reel | 8mm Tape Size of Reel |
|---|---|---|
| | 330 mm (13") | 180 mm (7") |
| No. of Devices | 10,000 Pcs | 3,000 Pcs |

1. The bandolier of 330 mm reel contains at least 10,000 devices.
2. The bandolier of 180 mm reel contains at least 3,000 devices.
3. No more than 0.5% missing devices / reel. 50 empty compartments for 330 mm reel. 15 empty compartments for 180 mm reel.
4. Three consecutive empty places might be found provided this gap is followed by 6 consecutive devices.
5. The carrier tape (leader) starts with at least 75 empty positions (equivalent to 330 mm). In order to fix the carrier tape a self adhesive tape of 20 to 50 mm is applied. At the end of the bandolier at least 40 empty positions (equivalent to 160 mm) are there.

## Tape Specification for SOT-23 Surface Mount Device




**All dimensions in mm**

## Packing Detail

| PACKAGE | STANDARD PACK | | INNER CARTON BOX | | OUTER CARTON BOX | | |
|---|---|---|---|---|---|---|---|
| | **Details** | **Net Weight/Qty** | **Size** | **Qty** | **Size** | **Qty** | **Gr Wt** |
| **SOT-23 T&R** | **3K/reel** | **136 gm/3K pcs** | **3" x 7.5" x 7.5"** | **12 K** | **17" x 15" x 13.5"** | **192 K** | **12 kgs** |
| | | | **9" x 9" x 9"** | **51 K** | **19" x 19" x 19"** | **408 K** | **28 kgs** |
| | **10K/reel** | **415 gm/10K pcs** | **13" x 13" x 0.5"** | **10 K** | **17" x 15" x 13.5"** | **300 K** | **16 kgs** |

**CZMA3.9_47VRev_1 071005E**

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## Disclaimer

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Continental Device India Limited
C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119
email@cdil.com www.cdilsemi.com

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