

SMD Zener Diode



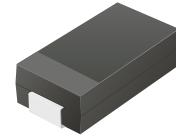
SMD Diodes Specialist

CZRA5920B-G Thru CZRA5956B-G

Voltage: 6.2 to 200 Volts

Power: 1.5 Watts

RoHS Device

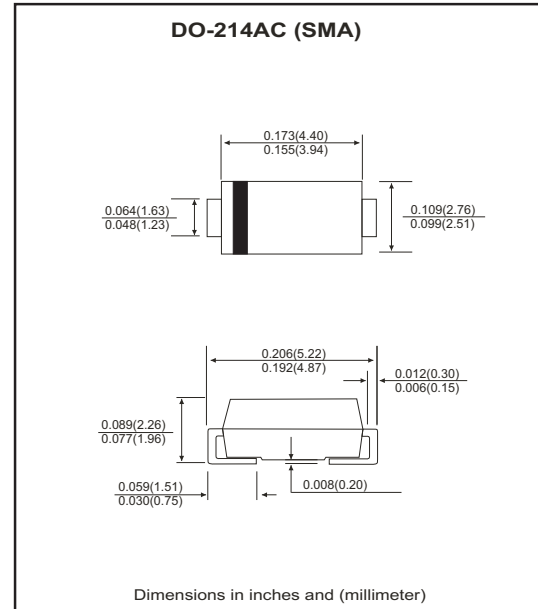


Features

- Glass passivated chip.
- Low leakage.
- Built-in strain relief.
- Low inductance.
- High peak reverse power dissipa.
- Lead(Pb)-free component.
- For use in stabilizing and clipping circuits with high power.

Mechanical data

- Case: DO-214AC(SMA), Molded plastic.
- Epoxy: UL 94V-0 rate flame retardant.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode.
- Mounting position: Any.



Maximum Rating AND Electrical Characteristics

| Parameter | Symbol | Value | Unit |
|---|----------------|-------------|------------------|
| Maximum Power Dissipation, $T_L = 50^\circ\text{C}$ (Note1) | P_D | 1.5 | W |
| Maximum Forward voltage at $I_F=200\text{mA}$ | V_F | 1.2 | V |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55 to +175 | $^\circ\text{C}$ |

(1) T_L = Lead temperature at 3/8" (9.5mm) from body.

RATING AND CHARACTERISTIC CURVES (CZRA5920B-G Thru CZRA5956B-G)

Fig.1 Typical thermal resistance v.s. lead length

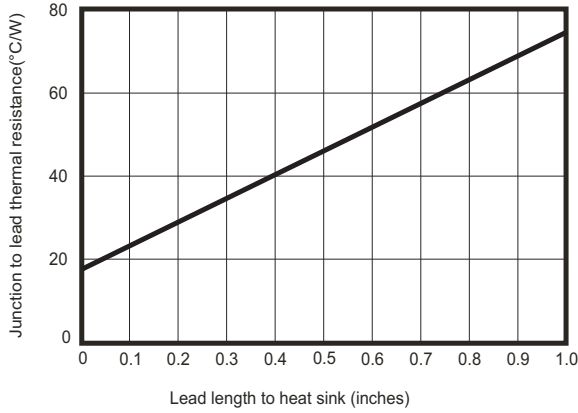


Fig.2 Maximum surge power

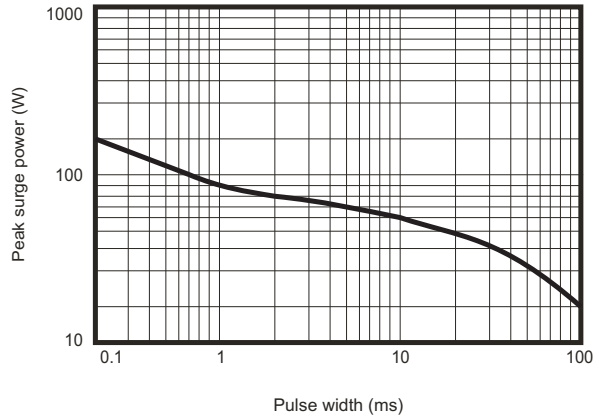


Fig.3 Temperature coefficients v.s. zener voltage

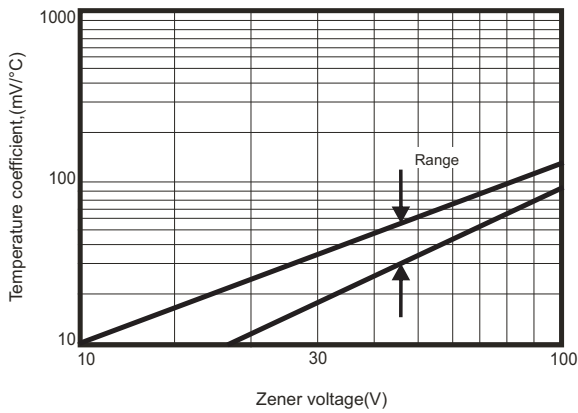


Fig.4 Power temperature derating current

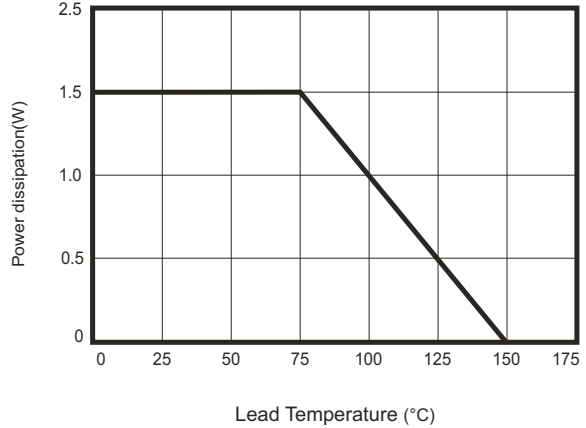
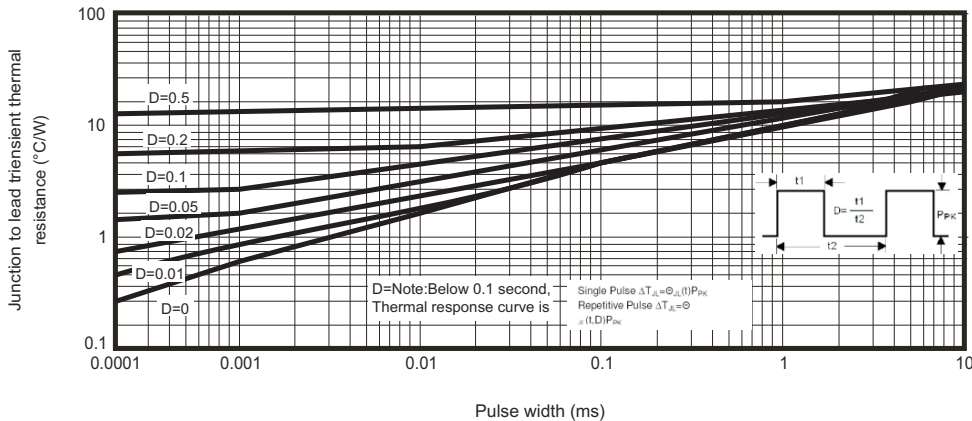


Fig.5 Typical thermal response L, lead length=3/8 inch



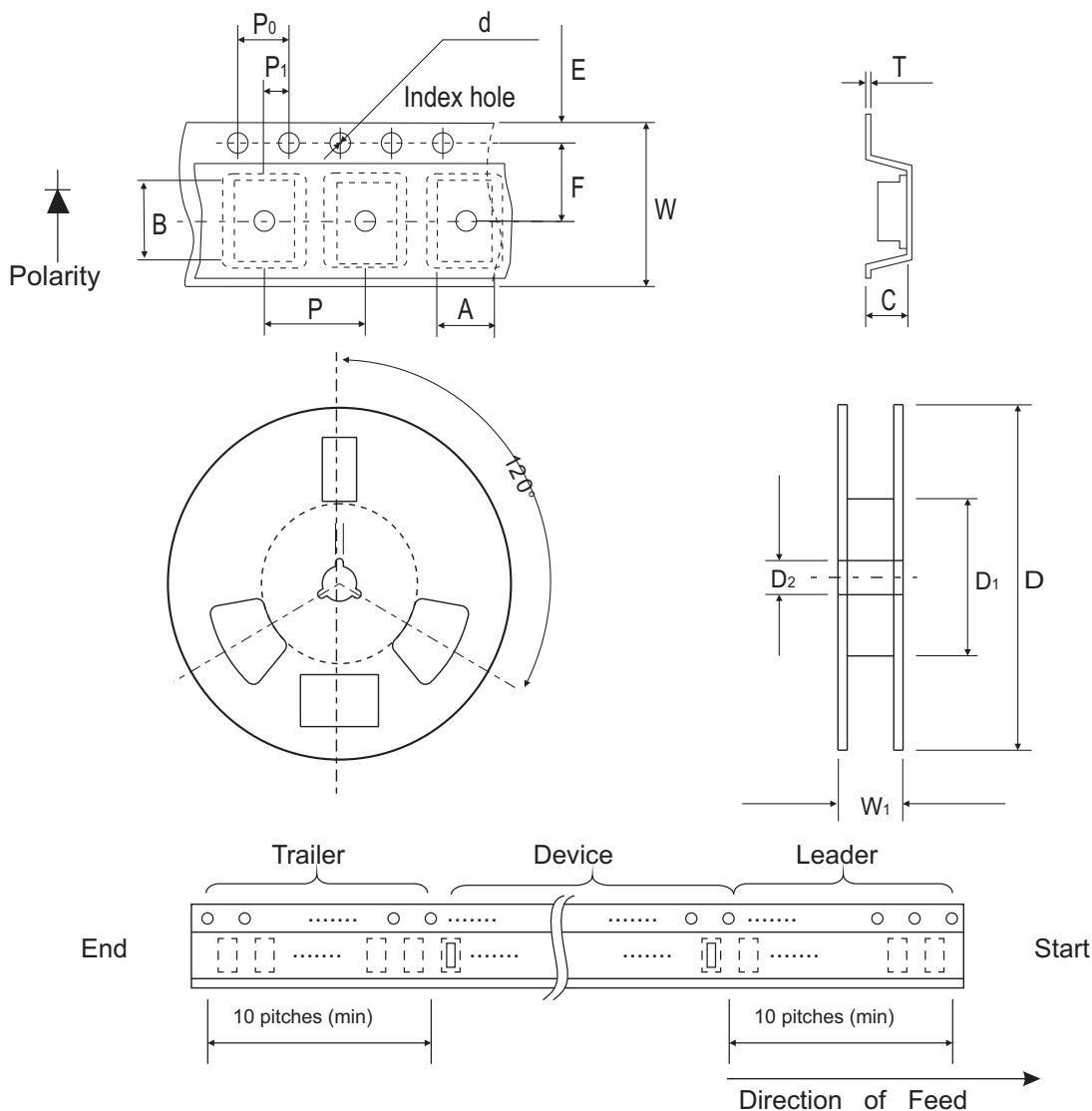
Electrical Characteristics(Ta = 25°C)

| Part Number | Nominal Zener Voltage | | Maximum Zener Impedance | | | Maximum Reverse Leakage Current | | Maximum DC Zener Current | Marking Code |
|-------------|-----------------------|------|-------------------------|-----------|------|---------------------------------|-------|--------------------------|--------------|
| | VZ @ IZT | IZT | ZZT @ IZT | ZZK @ IZK | IZK | IR @ VR | | IZM | |
| | (V) | (mA) | (Ohm) | (Ohm) | (mA) | (uA) | (V) | (mA) | |
| CZRA5920B-G | 6.2 | 60.5 | 2.0 | 200 | 1.0 | 5.0 | 4.0 | 241 | 920B |
| CZRA5921B-G | 6.8 | 55.1 | 2.5 | 200 | 1.0 | 5.0 | 5.2 | 440 | 921B |
| CZRA5922B-G | 7.5 | 50.0 | 3.0 | 400 | 0.5 | 5.0 | 6.0 | 400 | 922B |
| CZRA5923B-G | 8.2 | 45.7 | 3.5 | 400 | 0.5 | 5.0 | 6.5 | 364 | 923B |
| CZRA5924B-G | 9.1 | 41.2 | 4.0 | 500 | 0.5 | 5.0 | 7.0 | 328 | 924B |
| CZRA5925B-G | 10 | 37.5 | 4.5 | 500 | 0.25 | 5.0 | 8.0 | 300 | 925B |
| CZRA5926B-G | 11 | 34.1 | 5.5 | 550 | 0.25 | 5.0 | 8.4 | 272 | 926B |
| CZRA5927B-G | 12 | 31.2 | 6.5 | 550 | 0.25 | 1.0 | 9.1 | 250 | 927B |
| CZRA5928B-G | 13 | 28.8 | 7.0 | 550 | 0.25 | 1.0 | 9.9 | 230 | 928B |
| CZRA5929B-G | 15 | 25.0 | 9.0 | 600 | 0.25 | 1.0 | 11.4 | 200 | 929B |
| CZRA5930B-G | 16 | 23.4 | 10 | 600 | 0.25 | 1.0 | 12.2 | 186 | 930B |
| CZRA5931B-G | 18 | 20.8 | 12 | 650 | 0.25 | 1.0 | 13.7 | 166 | 931B |
| CZRA5932B-G | 20 | 18.7 | 14 | 650 | 0.25 | 1.0 | 15.2 | 150 | 932B |
| CZRA5933B-G | 22 | 17.0 | 18 | 650 | 0.25 | 1.0 | 16.7 | 136 | 933B |
| CZRA5934B-G | 24 | 15.6 | 19 | 700 | 0.25 | 1.0 | 18.2 | 124 | 934B |
| CZRA5935B-G | 27 | 13.9 | 23 | 700 | 0.25 | 1.0 | 20.6 | 110 | 935B |
| CZRA5936B-G | 30 | 12.5 | 26 | 750 | 0.25 | 1.0 | 22.8 | 100 | 936B |
| CZRA5937B-G | 33 | 11.4 | 33 | 800 | 0.25 | 1.0 | 25.1 | 90 | 937B |
| CZRA5938B-G | 36 | 10.4 | 38 | 850 | 0.25 | 1.0 | 27.4 | 82 | 938B |
| CZRA5939B-G | 39 | 9.6 | 45 | 900 | 0.25 | 1.0 | 29.7 | 76 | 939B |
| CZRA5940B-G | 43 | 8.7 | 53 | 950 | 0.25 | 1.0 | 32.7 | 68 | 940B |
| CZRA5941B-G | 47 | 8.0 | 67 | 1000 | 0.25 | 1.0 | 35.8 | 62 | 941B |
| CZRA5942B-G | 51 | 7.3 | 70 | 1100 | 0.25 | 1.0 | 38.8 | 58 | 942B |
| CZRA5943B-G | 56 | 6.7 | 86 | 1300 | 0.25 | 1.0 | 42.6 | 52 | 943B |
| CZRA5944B-G | 62 | 6.0 | 100 | 1500 | 0.25 | 1.0 | 47.1 | 48 | 944B |
| CZRA5945B-G | 68 | 5.5 | 120 | 1700 | 0.25 | 1.0 | 51.7 | 44 | 945B |
| CZRA5946B-G | 75 | 5.0 | 140 | 2000 | 0.25 | 1.0 | 56.0 | 40 | 946B |
| CZRA5947B-G | 82 | 4.6 | 160 | 2500 | 0.25 | 1.0 | 62.2 | 36 | 947B |
| CZRA5948B-G | 91 | 4.1 | 200 | 3000 | 0.25 | 1.0 | 69.2 | 32 | 948B |
| CZRA5949B-G | 100 | 3.7 | 250 | 3100 | 0.25 | 1.0 | 76.0 | 30 | 949B |
| CZRA5950B-G | 110 | 3.4 | 300 | 4000 | 0.25 | 1.0 | 83.6 | 13 | 950B |
| CZRA5951B-G | 120 | 3.1 | 380 | 4500 | 0.25 | 1.0 | 91.2 | 12 | 951B |
| CZRA5952B-G | 130 | 2.9 | 450 | 5000 | 0.25 | 1.0 | 98.8 | 11 | 952B |
| CZRA5953B-G | 150 | 2.5 | 600 | 6000 | 0.25 | 1.0 | 114.0 | 10 | 953B |
| CZRA5954B-G | 160 | 2.3 | 700 | 6500 | 0.25 | 1.0 | 121.6 | 9 | 954B |
| CZRA5955B-G | 180 | 2.1 | 900 | 7000 | 0.25 | 1.0 | 136.8 | 8 | 955B |
| CZRA5956B-G | 200 | 1.9 | 1900 | 9990 | 0.25 | 1.0 | 152.0 | 7 | 956B |

Notes:

- (1) The type number listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$.
- (2) The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on IZT per JEDEC Method.

Reel Taping Specification

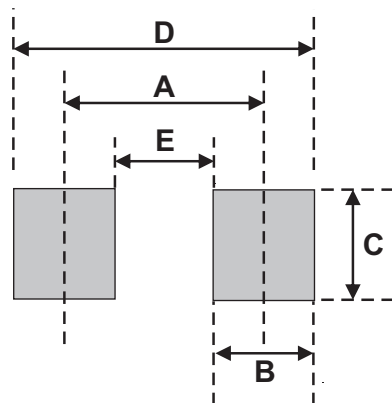


| SMA (DO-214AC) | SYMBOL | A | B | C | d | D | D1 | D2 |
|-------------------|--------|-------------|-------------|-------------|---------------|-------|------------|---------------|
| | (mm) | 2.70 (max) | 5.30 (max) | 2.66 (max) | 1.50 ± 0.10 | 330 | 50.0 MIN. | 13.5 ± 1.00 |
| | (inch) | 0.106 (max) | 0.209 (max) | 0.105 (max) | 0.059 ± 0.004 | 12.99 | 1.969 MIN. | 0.531 ± 0.039 |

| SMA (DO-214AC) | SYMBOL | E | F | P | P0 | P1 | W | W1 |
|-------------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|
| | (mm) | 1.75 ± 0.10 | 5.50 ± 0.05 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.05 | 12.0 ± 0.20 | 18.4 (max) |
| | (inch) | 0.689 ± 0.004 | 0.217 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.472 ± 0.008 | 0.724 (max) |

Suggested PAD Layout

| SIZE | DO-214AC(SMA) | |
|------|---------------|--------|
| | (mm) | (inch) |
| A | 3.80 | 0.150 |
| B | 1.60 | 0.063 |
| C | 2.80 | 0.110 |
| D | 5.40 | 0.213 |
| E | 2.20 | 0.087 |



Standard Package

| Case Type | Qty per Reel | Reel Size |
|----------------|--------------|-----------|
| | (Pcs) | (inch) |
| DO-214AC (SMA) | 5000 | 13 |