

SMD Zener Diode



SMD Diodes Specialist

CZRW5221B-HF Thru CZRW5267B-HF

Voltage: 2.4 to 75 Volts

Power: 500 mWatts

RoHS Device

Features

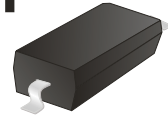
Halogen free.

For surface mounted applications.

500mW Power Dissipation.

Ideally suited for automated assembly processes.

Pb free product.



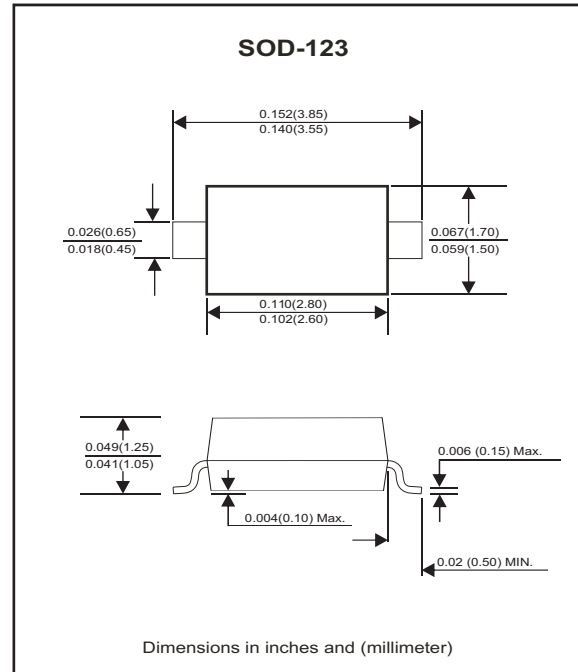
Mechanical data

Case: SOD-123, Molded plastic.

Terminals: Solder Plated, solderable per MIL-STD-750, method 2026.

Polarity: Cathode band.

Weight: 0.01 gram (approx.).



Maximum Rating AND Electrical Characteristics

| Parameter | Symbol | Value | Unit |
|---|--------|-------------|------------------|
| Maximum Power Dissipation, $T_A = 25^\circ\text{C}$ | P_D | 500 | mW |
| Operating Junction and Storage Temperature Range | T_J | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics(Ta = 25°C)

| Part Number | Zener Voltage | | | Operating resistance | | Rising operating resistance | | Reverse current | | Marking Code |
|--------------|---------------|-----|-------|----------------------|---------|-----------------------------|---------|-----------------|-------|--------------|
| | Vz(V)@IzT | | | ZzT(Ohm) | | Zzk(Ohm) | | IR(uA) | | |
| | Min | Nom | Max | Max | IzT(mA) | Max | Izk(mA) | Max | VR(V) | |
| CZRW5221B-HF | 2.28 | 2.4 | 2.52 | 30 | 20 | 1200 | 0.25 | 100 | 1 | C1 |
| CZRW5222B-HF | 2.38 | 2.5 | 2.63 | 30 | 20 | 1250 | 0.25 | 100 | 1 | C2 |
| CZRW5223B-HF | 2.57 | 2.7 | 2.84 | 30 | 20 | 1300 | 0.25 | 75 | 1 | C3 |
| CZRW5225B-HF | 2.85 | 3 | 3.15 | 30 | 20 | 1600 | 0.25 | 50 | 1 | C5 |
| CZRW5226B-HF | 3.14 | 3.3 | 3.47 | 28 | 20 | 1600 | 0.25 | 25 | 1 | D1 |
| CZRW5227B-HF | 3.42 | 3.6 | 3.78 | 24 | 20 | 1700 | 0.25 | 15 | 1 | D2 |
| CZRW5228B-HF | 3.71 | 3.9 | 4.1 | 23 | 20 | 1900 | 0.25 | 10 | 1 | D3 |
| CZRW5229B-HF | 4.09 | 4.3 | 4.52 | 22 | 20 | 2000 | 0.25 | 5 | 1 | D4 |
| CZRW5230B-HF | 4.47 | 4.7 | 4.94 | 19 | 20 | 1900 | 0.25 | 5 | 2 | D5 |
| CZRW5231B-HF | 4.85 | 5.1 | 5.36 | 17 | 20 | 1600 | 0.25 | 5 | 2 | E1 |
| CZRW5232B-HF | 5.32 | 5.6 | 5.88 | 11 | 20 | 1600 | 0.25 | 5 | 3 | E2 |
| CZRW5234B-HF | 5.89 | 6.2 | 6.51 | 7 | 20 | 1000 | 0.25 | 5 | 4 | E4 |
| CZRW5235B-HF | 6.46 | 6.8 | 7.14 | 5 | 20 | 750 | 0.25 | 3 | 5 | E5 |
| CZRW5236B-HF | 7.13 | 7.5 | 7.88 | 6 | 20 | 500 | 0.25 | 3 | 6 | F1 |
| CZRW5237B-HF | 7.79 | 8.2 | 8.61 | 8 | 20 | 500 | 0.25 | 3 | 6 | F2 |
| CZRW5239B-HF | 8.65 | 9.1 | 9.56 | 10 | 20 | 600 | 0.25 | 3 | 6.5 | F4 |
| CZRW5240B-HF | 9.5 | 10 | 10.5 | 17 | 20 | 600 | 0.25 | 3 | 8 | F5 |
| CZRW5241B-HF | 10.45 | 11 | 11.55 | 22 | 20 | 600 | 0.25 | 3 | 8.4 | H1 |
| CZRW5242B-HF | 11.4 | 12 | 12.6 | 30 | 20 | 600 | 0.25 | 2 | 9.1 | H2 |
| CZRW5243B-HF | 12.35 | 13 | 13.65 | 13 | 9.5 | 600 | 0.25 | 1 | 9.9 | H3 |
| CZRW5244B-HF | 13.3 | 14 | 14.7 | 15 | 9.0 | 600 | 0.25 | 0.5 | 10.5 | H4 |
| CZRW5245B-HF | 14.25 | 15 | 15.75 | 16 | 8.5 | 600 | 0.25 | 0.5 | 11 | H5 |
| CZRW5246B-HF | 15.2 | 16 | 16.8 | 17 | 7.8 | 600 | 0.25 | 0.1 | 12 | J1 |
| CZRW5247B-HF | 16.15 | 17 | 17.85 | 19 | 7.5 | 600 | 0.25 | 0.1 | 13 | J2 |
| CZRW5248B-HF | 17.1 | 18 | 18.9 | 21 | 7 | 600 | 0.25 | 0.1 | 14 | J3 |
| CZRW5250B-HF | 19 | 20 | 21 | 25 | 6.2 | 600 | 0.25 | 0.1 | 15 | J5 |
| CZRW5251B-HF | 20.9 | 22 | 23.1 | 29 | 5.6 | 600 | 0.25 | 0.1 | 17 | K1 |
| CZRW5252B-HF | 22.8 | 24 | 25.2 | 33 | 5.2 | 600 | 0.25 | 0.1 | 18 | K2 |
| CZRW5254B-HF | 25.65 | 27 | 28.35 | 41 | 5 | 600 | 0.25 | 0.1 | 21 | K4 |
| CZRW5255B-HF | 26.6 | 28 | 29.4 | 44 | 4.5 | 600 | 0.25 | 0.1 | 21 | K5 |
| CZRW5256B-HF | 28.5 | 30 | 31.5 | 49 | 4.2 | 600 | 0.25 | 0.1 | 23 | M1 |
| CZRW5257B-HF | 31.35 | 33 | 34.65 | 58 | 3.8 | 700 | 0.25 | 0.1 | 25 | M2 |
| CZRW5258B-HF | 34.2 | 36 | 37.8 | 70 | 3.4 | 700 | 0.25 | 0.1 | 27 | M3 |
| CZRW5259B-HF | 37.05 | 39 | 40.95 | 80 | 3.2 | 800 | 0.25 | 0.1 | 30 | M4 |
| CZRW5260B-HF | 40.85 | 43 | 45.15 | 93 | 3 | 900 | 0.25 | 0.1 | 33 | M5 |
| CZRW5261B-HF | 44.65 | 47 | 49.35 | 105 | 2.7 | 1000 | 0.25 | 0.1 | 36 | N1 |
| CZRW5262B-HF | 48.45 | 51 | 53.55 | 125 | 2.5 | 1100 | 0.25 | 0.1 | 39 | N2 |
| CZRW5263B-HF | 53.2 | 56 | 58.8 | 150 | 2.2 | 1300 | 0.25 | 0.1 | 43 | N3 |
| CZRW5264B-HF | 57 | 60 | 63 | 170 | 2.1 | 1400 | 0.25 | 0.1 | 46 | N4 |
| CZRW5265B-HF | 58.9 | 62 | 65.1 | 185 | 2 | 1500 | 0.25 | 0.1 | 47 | N5 |
| CZRW5266B-HF | 64.6 | 68 | 71.4 | 230 | 1.8 | 1600 | 0.25 | 0.1 | 52 | P1 |
| CZRW5267B-HF | 71.25 | 75 | 78.75 | 270 | 1.7 | 1400 | 0.25 | 0.1 | 56 | P2 |

RATING AND CHARACTERISTIC CURVES (CZRW5221B-HF Thru CZRW5267B-HF)

Fig.1 Typical forward voltage

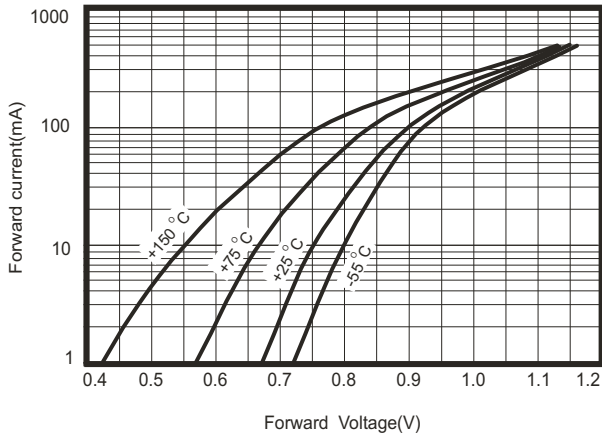


Fig.2 Typical leakage current

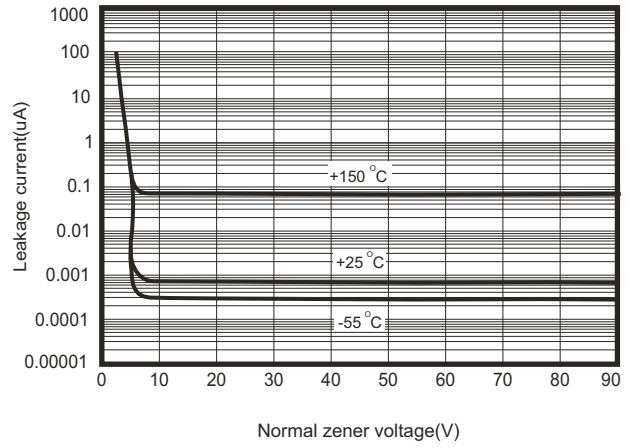


Fig.3 Temperature coefficients

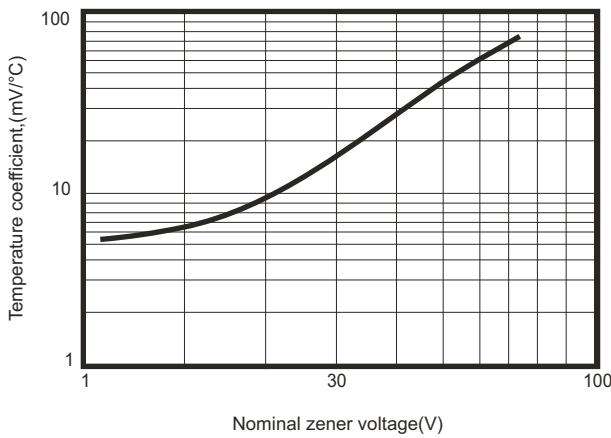
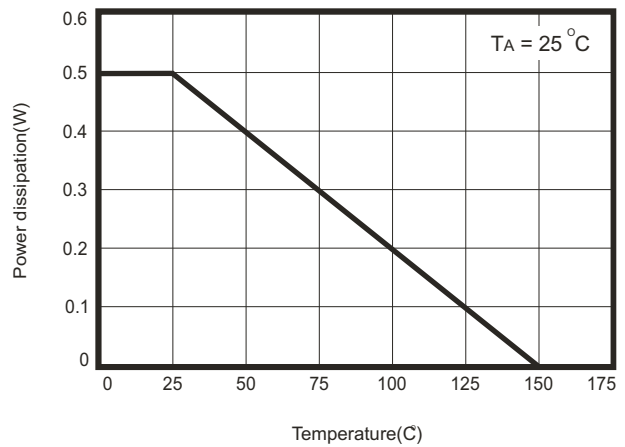
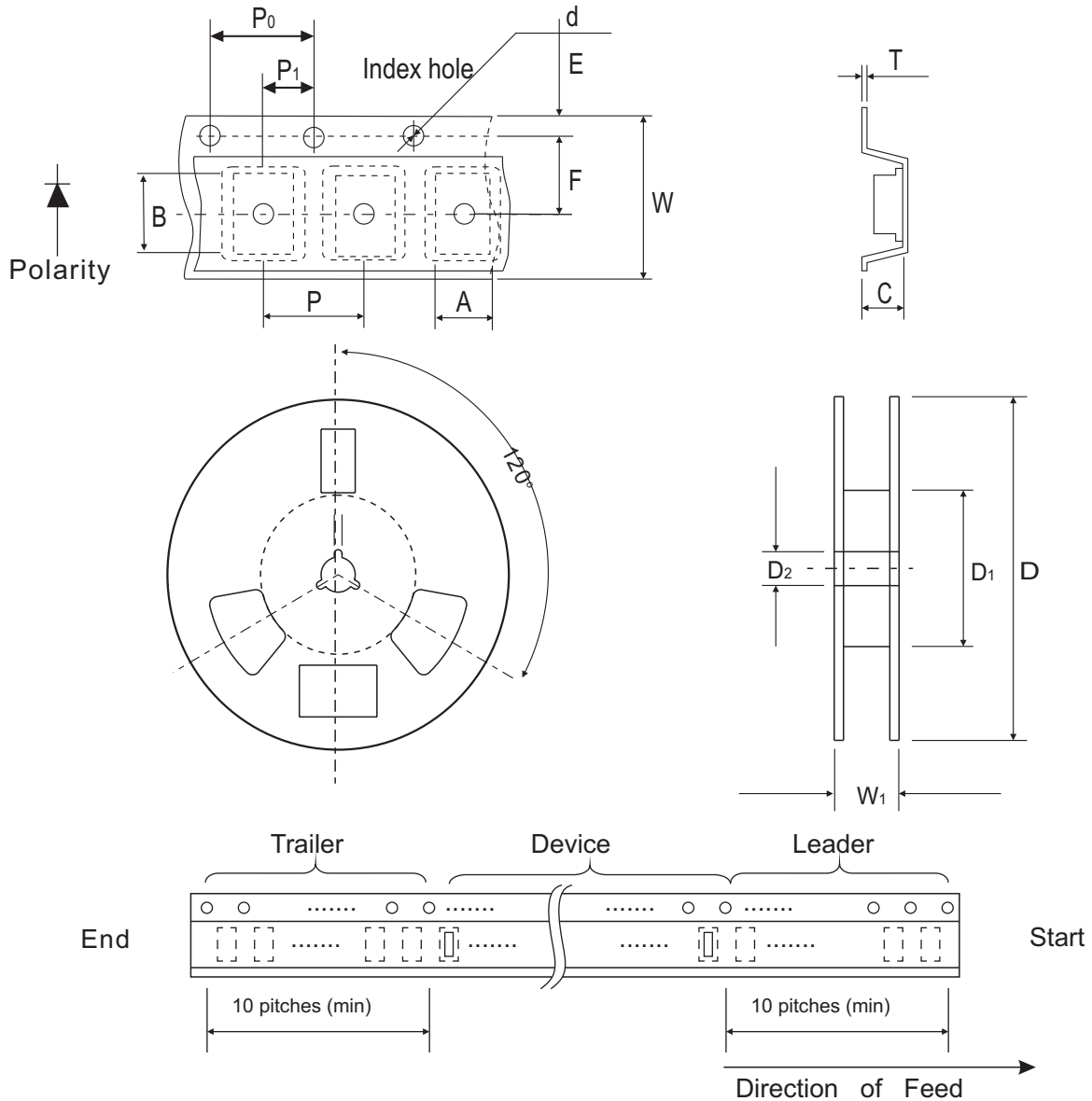


Fig.4 Steady state power derating



Reel Taping Specification



| SOD-123 | SYMBOL | A | B | C | d | D | D ₁ | D ₂ |
|---------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
| | (mm) | 1.90 ± 0.10 | 4.00 ± 0.10 | 1.50 ± 0.10 | 1.55 ± 0.10 | 178 ± 1 | 50.0 MIN. | 13.0 ± 0.20 |
| | (inch) | 0.074 ± 0.004 | 0.157 ± 0.004 | 0.059 ± 0.004 | 0.061 ± 0.004 | 7.008 ± 0.04 | 1.968 MIN. | 0.512 ± 0.008 |

| SOD-123 | SYMBOL | E | F | P | P ₀ | P ₁ | W | W ₁ |
|---------|--------|---------------|---------------|---------------|----------------|----------------|---------------|----------------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.05 | 8.00 ± 0.30 | 14.4 MAX. |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.315 ± 0.012 | 0.567 MAX. |

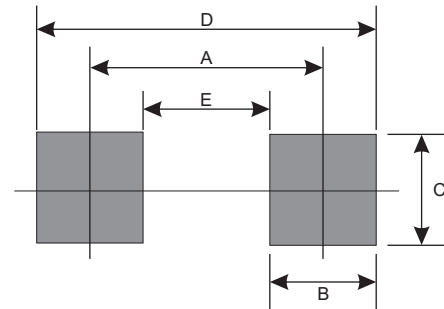
Marking Code

| Part Number | Marking Code |
|----------------------|--------------|
| CZRW5221B ~ 5267B-HF | XX |



Suggested PAD Layout

| SIZE | SOD-123 | |
|------|---------|--------|
| | (mm) | (inch) |
| A | 3.35 | 0.132 |
| B | 0.80 | 0.032 |
| C | 1.00 | 0.039 |
| D | 5.025 | 0.198 |
| E | 1.675 | 0.066 |



Standard Package

| Case Type | Qty per Reel | Reel Size |
|-----------|--------------|-----------|
| | (Pcs) | (inch) |
| SOD-123 | 3000 | 7 |