

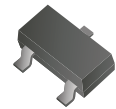
CZRT5221B-HF Thru CZRT5267B-HF

Voltage: 2.4 to 39 Volts

Power: 350 mWatts

RoHS Device

Halogen Free

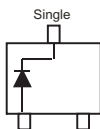
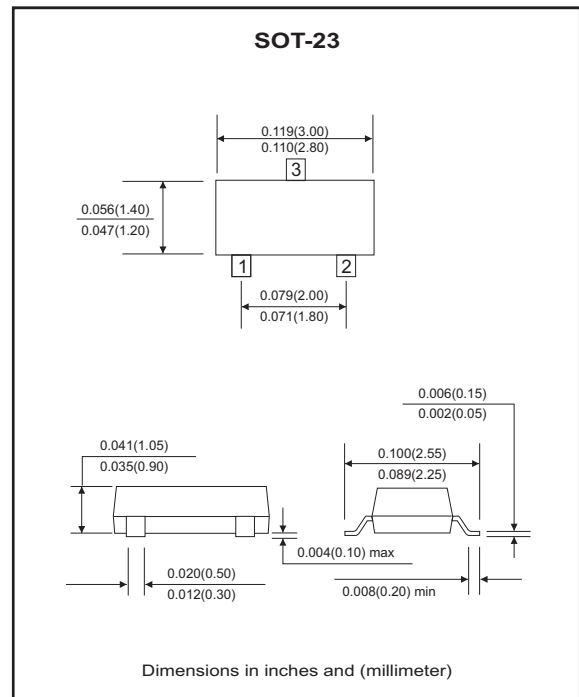


Features

- Planar die construction
- 350mW power dissipation on FR-4 PCB
- Ideally suited for automated assembly process
- General purpose, medium current

Mechanical data

- Case: SOT-23, Molded plastic
- Terminals: Solderable per MIL-STD-202G, method 208
- Polarity: See diagram below
- Mounting position: Any
- Marking: see table on page 2
- Weight: 0.0078 gram (approx.).



Electrical Characteristics (TA=25°C, unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|------------------|-------------|------|
| Forward voltage drop at IF=10mA | V _F | 0.9 | V |
| Power dissipation (Notes A), TA = 25°C | P _D | 350 | mW |
| Thermal resistance, junction to ambient air (Notes A) | R _{θJA} | 357 | °C/W |
| Operating junction and storage temperature range | T _J | -65 to +150 | °C |

Notes:

- A. Valid provided that device terminals are kept at ambient temperature.
- B. Tested with pulses, T_p ≤ 1.0mS.

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) | |
| CZRT5221B-HF | 2.28 | 2.4 | 2.52 | 30 | 20.0 | 1200 | 0.25 | 100 | 1.0 | KC1 |
| CZRT5222B-HF | 2.38 | 2.5 | 2.63 | 30 | 20.0 | 1250 | 0.25 | 100 | 1.0 | KC2 |
| CZRT5223B-HF | 2.57 | 2.7 | 2.84 | 30 | 20.0 | 1300 | 0.25 | 75 | 1.0 | KC3 |
| CZRT5225B-HF | 2.85 | 3.0 | 3.15 | 30 | 20.0 | 1600 | 0.25 | 50 | 1.0 | KC5 |
| CZRT5226B-HF | 3.14 | 3.3 | 3.47 | 28 | 20.0 | 1600 | 0.25 | 25 | 1.0 | KG1 |
| CZRT5227B-HF | 3.42 | 3.6 | 3.78 | 24 | 20.0 | 1700 | 0.25 | 15 | 1.0 | KG2 |
| CZRT5228B-HF | 3.71 | 3.9 | 4.10 | 23 | 20.0 | 1900 | 0.25 | 10 | 1.0 | KG3 |
| CZRT5229B-HF | 4.09 | 4.3 | 4.52 | 22 | 20.0 | 2000 | 0.25 | 5.0 | 1.0 | KG4 |
| CZRT5230B-HF | 4.47 | 4.7 | 4.94 | 19 | 20.0 | 1900 | 0.25 | 5.0 | 2.0 | KG5 |
| CZRT5231B-HF | 4.85 | 5.1 | 5.36 | 17 | 20.0 | 1600 | 0.25 | 5.0 | 2.0 | KE1 |
| CZRT5232B-HF | 5.32 | 5.6 | 5.88 | 11 | 20.0 | 1600 | 0.25 | 5.0 | 3.0 | KE2 |
| CZRT5234B-HF | 5.89 | 6.2 | 6.51 | 7 | 20.0 | 1000 | 0.25 | 5.0 | 4.0 | KE4 |
| CZRT5235B-HF | 6.46 | 6.8 | 7.14 | 5 | 20.0 | 750 | 0.25 | 3.0 | 5.0 | KE5 |
| CZRT5236B-HF | 7.13 | 7.5 | 7.88 | 6 | 20.0 | 500 | 0.25 | 3.0 | 6.0 | KF1 |
| CZRT5237B-HF | 7.79 | 8.2 | 8.61 | 8 | 20.0 | 500 | 0.25 | 3.0 | 6.5 | KF2 |
| CZRT5239B-HF | 8.65 | 9.1 | 9.56 | 10 | 20.0 | 600 | 0.25 | 3.0 | 7.0 | KF4 |
| CZRT5240B-HF | 9.50 | 10 | 10.50 | 17 | 20.0 | 600 | 0.25 | 3.0 | 8.0 | KF5 |
| CZRT5241B-HF | 10.45 | 11 | 11.55 | 22 | 20.0 | 600 | 0.25 | 2.0 | 8.4 | KH1 |
| CZRT5242B-HF | 11.40 | 12 | 12.60 | 30 | 20.0 | 600 | 0.25 | 1.0 | 9.1 | KH2 |
| CZRT5243B-HF | 12.35 | 13 | 13.65 | 13 | 9.5 | 600 | 0.25 | 0.5 | 9.9 | KH3 |
| CZRT5245B-HF | 14.25 | 15 | 15.75 | 16 | 8.5 | 600 | 0.25 | 0.1 | 11 | KH5 |
| CZRT5246B-HF | 15.20 | 16 | 16.80 | 17 | 7.8 | 600 | 0.25 | 0.1 | 12 | KJ1 |
| CZRT5248B-HF | 17.10 | 18 | 18.90 | 21 | 7.0 | 600 | 0.25 | 0.1 | 14 | KJ3 |
| CZRT5250B-HF | 19.00 | 20 | 21.00 | 25 | 6.2 | 600 | 0.25 | 0.1 | 15 | KJ5 |
| CZRT5251B-HF | 20.90 | 22 | 23.10 | 29 | 5.6 | 600 | 0.25 | 0.1 | 17 | KK1 |
| CZRT5252B-HF | 22.80 | 24 | 25.20 | 33 | 5.2 | 600 | 0.25 | 0.1 | 18 | KK2 |
| CZRT5254B-HF | 25.65 | 27 | 28.35 | 41 | 5.0 | 600 | 0.25 | 0.1 | 21 | KK4 |
| CZRT5255B-HF | 26.60 | 28 | 29.40 | 44 | 4.5 | 600 | 0.25 | 0.1 | 21 | KK5 |
| CZRT5256B-HF | 28.50 | 30 | 31.50 | 49 | 4.2 | 600 | 0.25 | 0.1 | 23 | KM1 |
| CZRT5257B-HF | 31.35 | 33 | 34.65 | 58 | 3.8 | 700 | 0.25 | 0.1 | 25 | KM2 |
| CZRT5258B-HF | 34.20 | 36 | 37.80 | 70 | 3.4 | 700 | 0.25 | 0.1 | 27 | KM3 |
| CZRT5259B-HF | 37.05 | 39 | 40.95 | 80 | 3.2 | 800 | 0.25 | 0.1 | 30 | KM4 |
| CZRT5260B-HF | 40.85 | 43 | 45.15 | 93 | 3.0 | 900 | 0.25 | 0.1 | 33 | KM5 |
| CZRT5261B-HF | 44.65 | 47 | 49.35 | 105 | 2.7 | 1000 | 0.25 | 0.1 | 36 | KN1 |
| CZRT5262B-HF | 48.45 | 51 | 53.55 | 125 | 2.5 | 1100 | 0.25 | 0.1 | 39 | KN2 |
| CZRT5263B-HF | 53.20 | 56 | 58.80 | 150 | 2.2 | 1300 | 0.25 | 0.1 | 43 | KN3 |
| CZRT5264B-HF | 57.00 | 60 | 63.00 | 170 | 2.1 | 1400 | 0.25 | 0.1 | 46 | KN4 |
| CZRT5265B-HF | 58.90 | 62 | 65.10 | 185 | 2.0 | 1500 | 0.25 | 0.1 | 47 | KN5 |
| CZRT5266B-HF | 64.60 | 68 | 71.40 | 230 | 1.8 | 1600 | 0.25 | 0.1 | 52 | KP1 |
| CZRT5267B-HF | 71.25 | 75 | 78.75 | 270 | 1.7 | 1400 | 0.25 | 0.1 | 56 | KP2 |

Note: 5% Standard Vz Tolerance

RATING AND CHARACTERISTIC CURVES (CZRT5221B-HF Thru CZRT5267B-HF)

Fig.1 Typical forward voltage

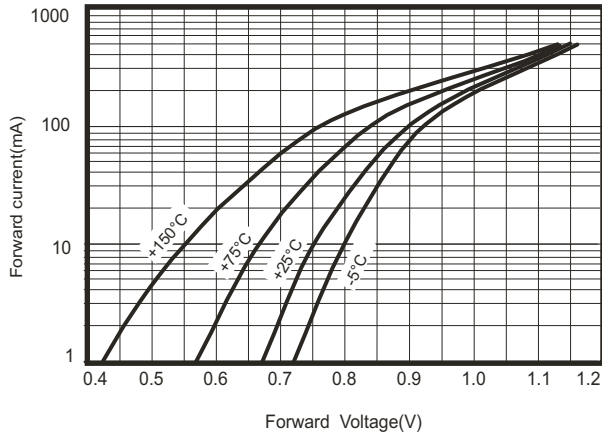


Fig.2 Typical leakage current

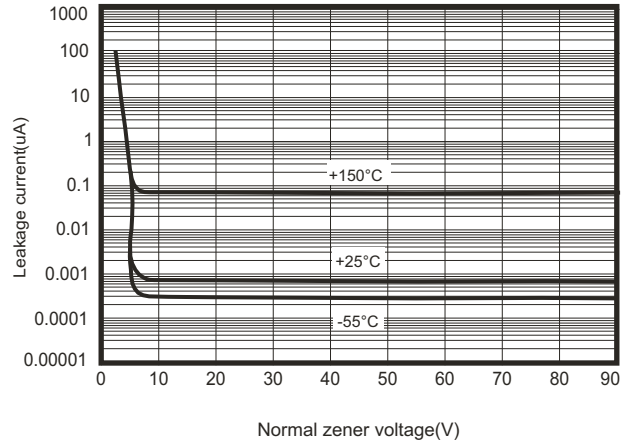


Fig.3 Temperature coefficients

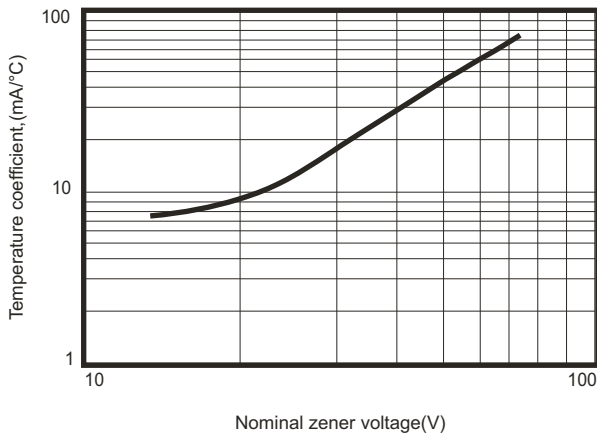
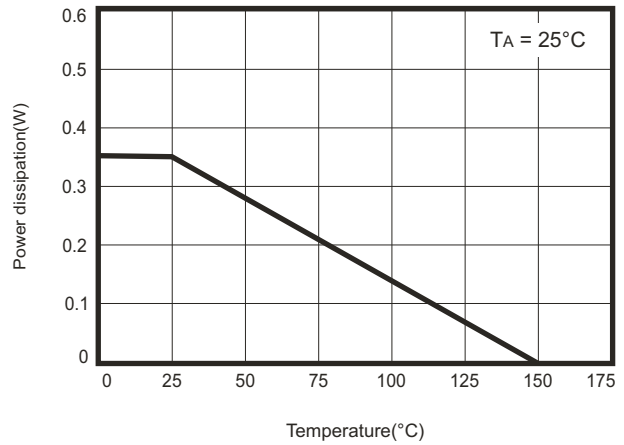
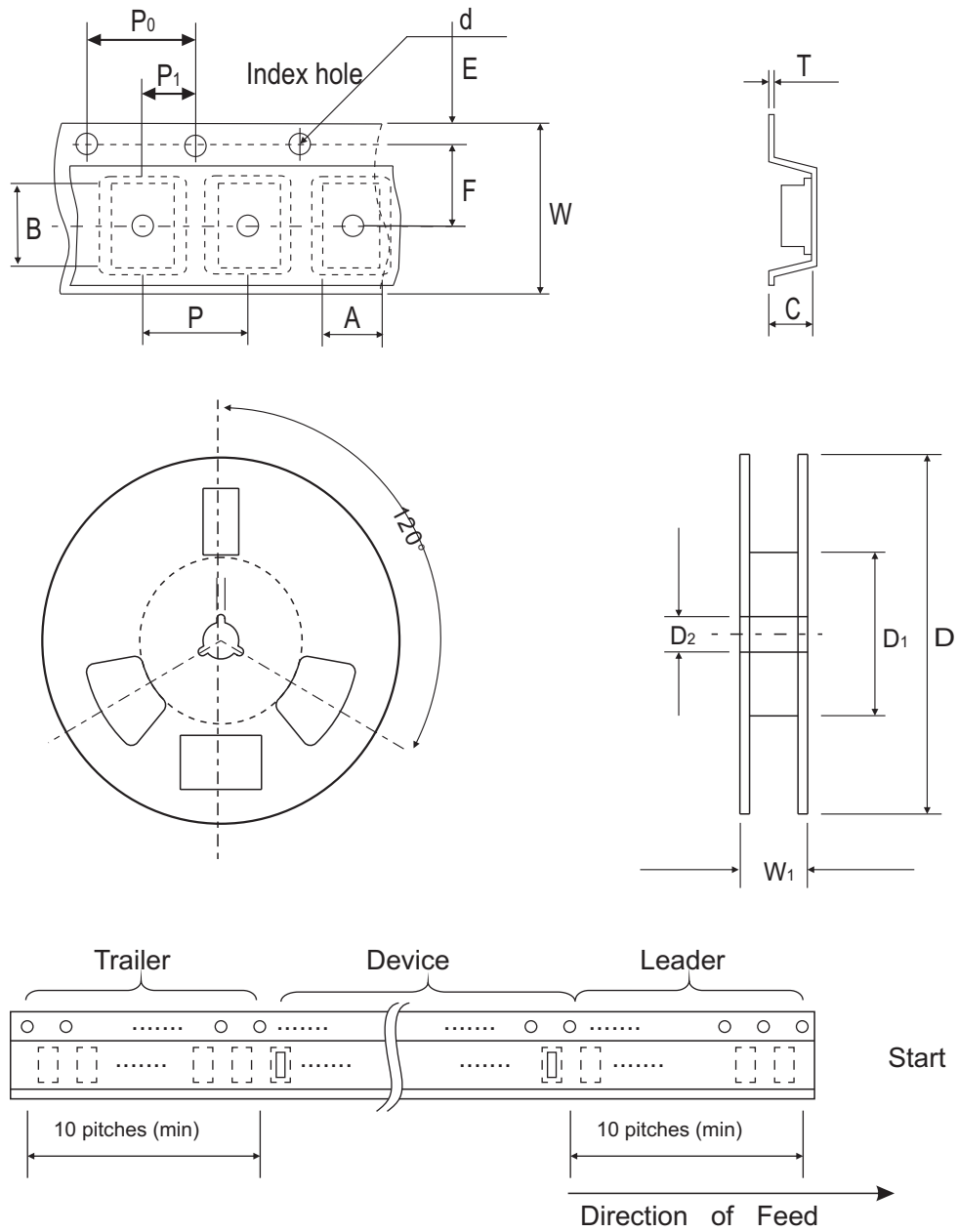


Fig.4 Steady state power derating



Reel Taping Specification

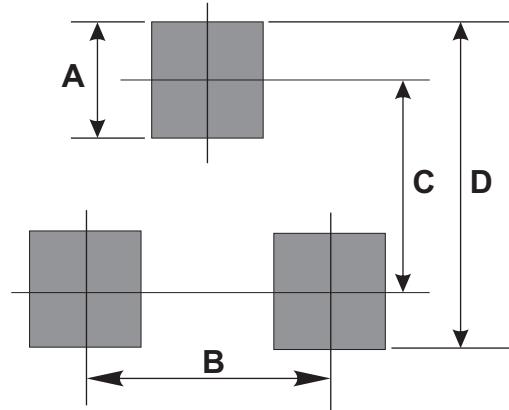


| SOT-23 | SYMBOL | A | B | C | d | D | D ₁ | D ₂ |
|--------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
| | (mm) | 3.10 ± 0.10 | 2.85 ± 0.10 | 1.40 ± 0.10 | 1.55 ± 0.10 | 178 ± 1 | 50.0 MIN. | 13.0 ± 0.20 |
| | (inch) | 0.122 ± 0.004 | 0.112 ± 0.004 | 0.055 ± 0.004 | 0.061 ± 0.004 | 7.008 ± 0.04 | 1.969 MIN. | 0.512 ± 0.008 |

| SOT-23 | 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. |

Suggested PAD Layout

| SIZE | SOT-23 | |
|------|--------|--------|
| | (mm) | (inch) |
| A | 0.80 | 0.031 |
| B | 1.90 | 0.075 |
| C | 2.02 | 0.080 |
| D | 2.82 | 0.111 |



Standard Packaging

| Case Type | Qty per Reel | Reel Size |
|-----------|--------------|-----------|
| | (Pcs) | (inch) |
| SOT-23 | 3000 | 7 |