

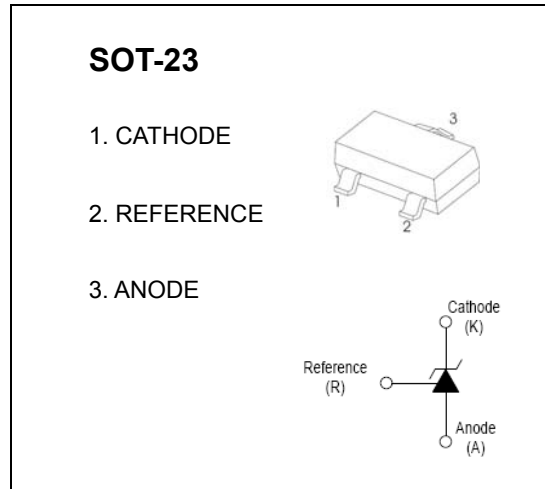


SOT-23 Encapsulate Adjustable Reference Source

CD431 Adjustable Accurate Reference Source

FEATURES

- The output voltage can be adjusted to 36V
- Low dynamic output impedance ,its typical value is 0.2Ω
- Trapping current capability is 1 to 100mA
- The typical value of the equivalent temperature factor in the whole temperature scope is 50 ppm/°C
- The effective temperature compensation in the working range of full temperature
- Low output noise voltage
- Fast on -state response



ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|-----------------|-----------|------|
| Cathode Voltage | V_{KA} | 36 | V |
| Cathode Current Range (Continuous) | I_{KA} | -100~+150 | mA |
| Reference Input Current Range | I_{ref} | 0.05~+10 | mA |
| Power Dissipation | P_D | 300 | mW |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 417 | °C/W |
| Operating Temperature | T_{opr} | 0~70 | °C |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature Range | T_{stg} | -65~+150 | °C |

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}C$ unless otherwise specified)

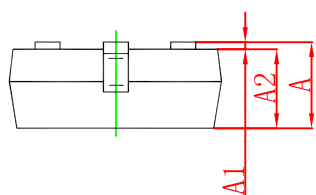
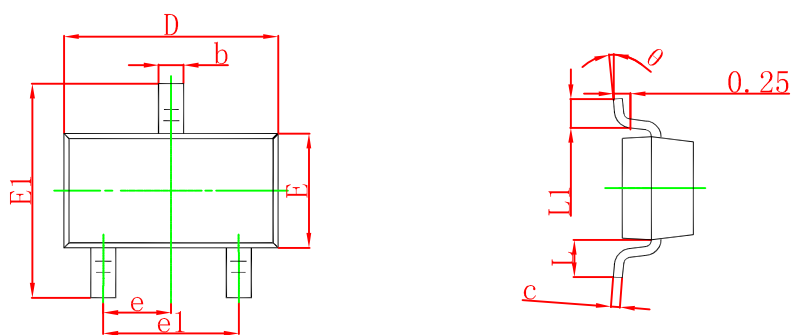
| Parameter | Symbol | Test condition | Min | Typ | Max | Unit |
|---|--------------------------------|---|------------------------------------|------|-------|----------|
| Reference input voltage | V_{ref} | $V_{KA}=V_{REF}, I_{KA}=10mA$ | 2.475 | 2.5 | 2.525 | V |
| Deviation of reference input voltage over temperature (note) | $\Delta V_{ref}/\Delta T$ | $V_{KA}=V_{REF}, I_{KA}=10mA$ $T_{min} \leq T_a \leq T_{max}$ | | 4.5 | 17 | mV |
| Ratio of change in reference input voltage to the change in cathode voltage | $\Delta V_{ref}/\Delta V_{KA}$ | $I_{KA}=10mA$ | ΔV_{KA} =10V~ V_{REF} | -1.0 | -2.7 | mV/V |
| | | | ΔV_{KA} =36V~ 10V | -0.5 | -2.0 | mV/V |
| Reference input current | I_{ref} | $I_{KA}=10mA, R_1=10k\Omega$ $R_2=\infty$ | | 1.5 | 4 | μA |
| Deviation of reference input current over full temperature range | $\Delta I_{ref}/\Delta T$ | $I_{KA}=10mA, R_1=10k\Omega$ $R_2=\infty$ $T_A=full\ Temperature$ | | 0.4 | 1.2 | μA |
| Minimum cathode current for regulation | $I_{KA}(min)$ | $V_{KA}=V_{REF}$ | | 0.45 | 1.0 | mA |
| Off-state cathode current | $I_{KA(OFF)}$ | $V_{KA}=36V, V_{REF}=0$ | | 0.05 | 0.5 | μA |
| Dynamic impedance | Z_{KA} | $V_{KA}=V_{REF}, I_{KA}=1\ to\ 100mA$ $f \leq 1.0kHz$ | | 0.15 | 0.5 | Ω |

Note: $T_{MIN}=0^{\circ}C, T_{MAX}=+70^{\circ}C$

CLASSIFICATION of V_{ref}

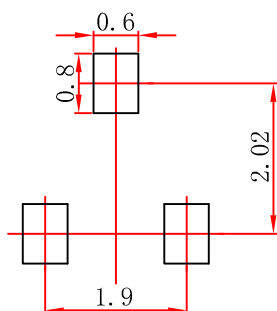
| Rank | 0.5% | 1% |
|-------|------------|-------------|
| Range | 2.48~2.513 | 2.475~2.525 |

SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 6° |

SOT-23 Suggested Pad Layout



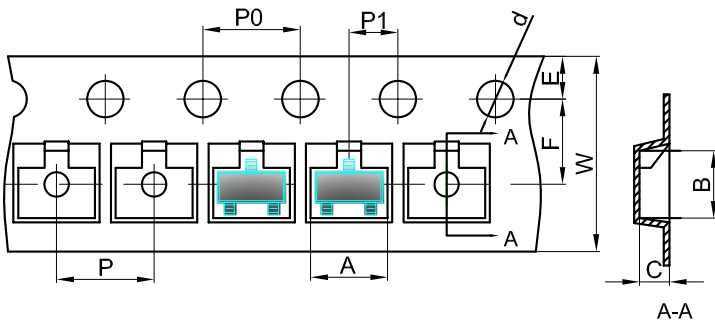
- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

NOTICE

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

SOT-23 Tape and Reel

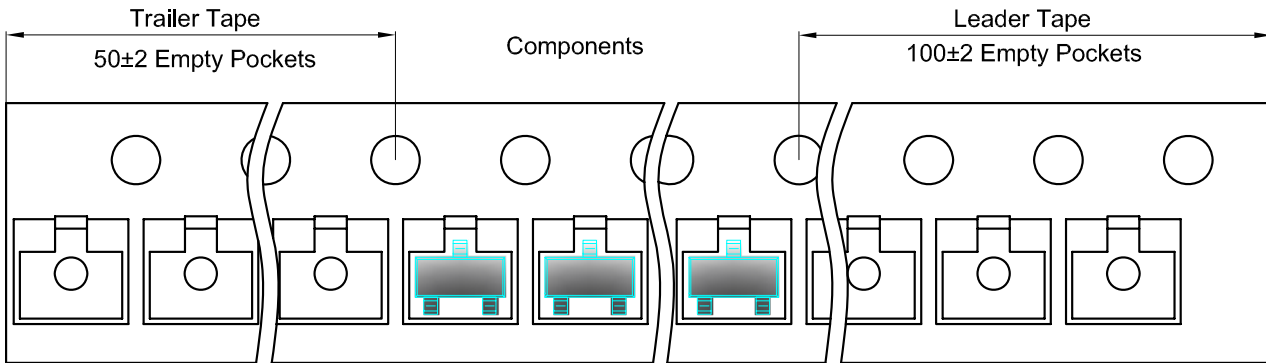
SOT-23 Embossed Carrier Tape



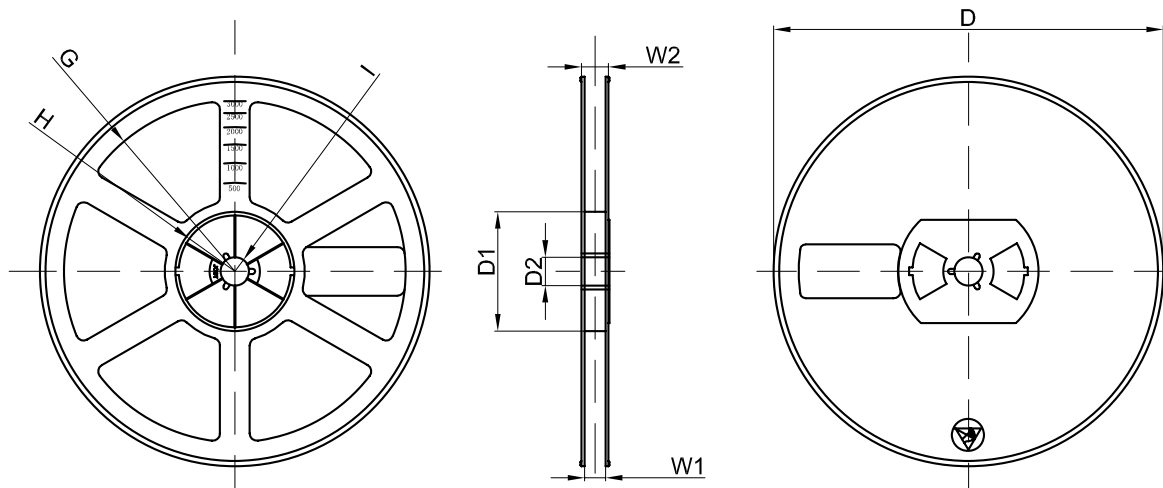
Packaging Description:
 SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

| Dimensions are in millimeter | | | | | | | | | | |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|
| Pkg type | A | B | C | d | E | F | P0 | P | P1 | W |
| SOT-23 | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |
| (Tolerance) | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +0.3/-0.1 |

SOT-23 Tape Leader and Trailer



SOT-23 Reel



| Dimensions are in millimeter | | | | | | | | |
|------------------------------|---------|-------|-------|--------|--------|-------|------|-------|
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7" Dia | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |
| Tolerance | +/-2 | +/-1 | +/-1 | +/-1 | +/-1 | +/-1 | +/-1 | +/-1 |

| REEL | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) | G.W.(kg) |
|----------|-----------|------------|--------------|-------------|-----------------|----------|
| 3000 pcs | 7 inch | 45,000 pcs | 203×203×195 | 180,000 pcs | 438×438×220 | |