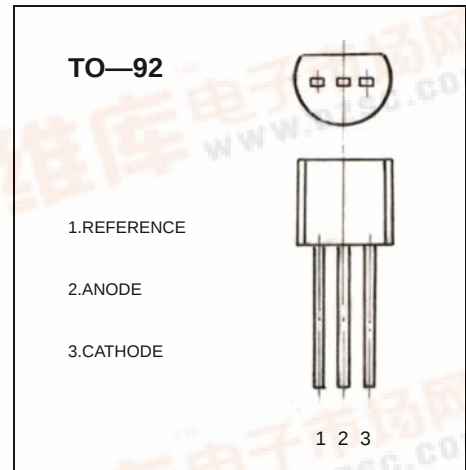




JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

**TO-92 Encapsulate Adjustable Reference Source****CJ431** Adjustable Accurate Reference Source**FEATURES**

The output voltage can be adjusted to 36V  
 Low dynamic output impedance ,its typical value is 0.2  $\Omega$   
 Trapping current capability is 1 to 100mA  
 The typical value of the equivalent temperature factor in the whole temperature scope is 50 ppm/ $^{\circ}\text{C}$   
 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                       | UNITS              |
|------------------------------------|-----------|-----------------------------|--------------------|
| Cathode Voltage                    | $V_{KA}$  | 37                          | V                  |
| Cathode Current Range (Continuous) | $I_{KA}$  | -100~+150                   | mA                 |
| Reference Input Current Range      | $I_{ref}$ | 0.05~+10                    | mA                 |
| Power Dissipation                  | $P_D$     | 770                         | mW                 |
| Operating temperature              | $T_{opr}$ | 0-70                        | $^{\circ}\text{C}$ |
| Storage temperature Range          | $T_{stg}$ | -65~+150 $^{\circ}\text{C}$ | $^{\circ}\text{C}$ |

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

| Parameter                                                                   | Symbol                         | Test conditions                                                                                | MIN                                       | TYP  | MAX   | UNIT          |
|-----------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------|------|-------|---------------|
| Reference Input Voltage                                                     | $V_{ref}$                      | $V_{KA}=V_{REF}$ , $I_{KA}=10\text{mA}$                                                        | 2.475                                     | 2.5  | 2.525 | V             |
| Deviation of reference input Voltage Over temperature (note)                | $\Delta V_{ref}/\Delta T$      | $V_{KA}=V_{REF}$ , $I_{KA}=10\text{mA}$<br>$T_{min}\leq T_a\leq T_{max}$                       |                                           | 4.5  | 17    | mV            |
| Ratio Of Change in Reference Input Voltage to the change in Cathode Voltage | $\Delta V_{ref}/\Delta V_{KA}$ | $I_{KA}=10\text{mA}$                                                                           | $\Delta V_{KA}=10\text{V}\sim V_{REF}$    | -1.0 | -2.7  | m V/V         |
|                                                                             |                                |                                                                                                | $\Delta V_{KA}=36\text{V}\sim 10\text{V}$ | -0.5 | -2.0  | m V/V         |
| Reference Input Current                                                     | $I_{ref}$                      | $I_{KA}=10\text{mA}$ , $R_1=10\text{K}\Omega$<br>$R_2=\infty$                                  |                                           | 1.5  | 4     | $\mu\text{A}$ |
| Deviation Of Reference Input Current Over Full Temperature Range            | $\Delta I_{ref}/\Delta T$      | $I_{KA}=10\text{mA}$ , $R_1=10\text{K}\Omega$<br>$R_2=\infty$<br>$T_A=\text{full Temperature}$ |                                           | 0.4  | 1.2   | $\mu\text{A}$ |
| Minimum cathode current for regulation                                      | $I_{KA}(\text{min})$           | $V_{KA}=V_{REF}$                                                                               |                                           | 0.45 | 1.0   | mA            |
| Off-state cathode Current                                                   | $I_{KA}(\text{OFF})$           | $V_{KA}=36\text{V}$ , $V_{REF}=0$                                                              |                                           | 0.05 | 1.0   | $\mu\text{A}$ |
| Dynamic Impedance                                                           | $Z_{KA}$                       | $V_{KA}=V_{REF}$ , $I_{KA}=1$ to 100mA<br>$f\leq 1.0\text{KHz}$                                |                                           | 0.15 | 0.5   | $\Omega$      |

**Note:**  $T_{MIN}=0^{\circ}\text{C}$  ,  $T_{MAX}=+70^{\circ}\text{C}$ **CLASSIFICATION OF  $V_{ref}$** 

| Rank  | 0.5%        | 1%          | 2%          |
|-------|-------------|-------------|-------------|
| Range | 2.487-2.512 | 2.475-2.525 | 2.450-2.550 |

