



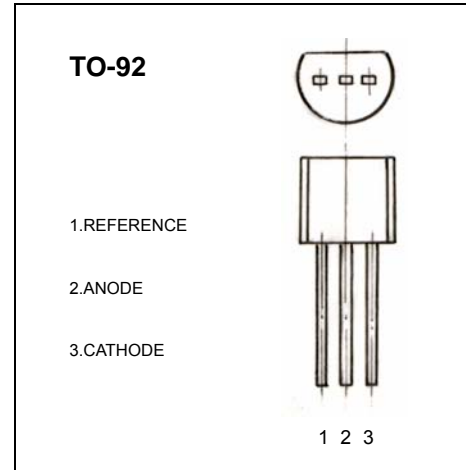
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

## 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 0.2Ω  
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	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	°C
Storage temperature Range	$T_{stg}$	-65~+150°C	°C

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reference Input Voltage	$V_{ref}$	$V_{KA}=V_{REF}$ , $I_{KA}=10\text{mA}$	2.450	2.5	2.550	V
Deviation of reference input Voltage Over temperature (note)	$\Delta V_{ref}/\Delta T$	$V_{KA}=V_{REF}$ , $I_{KA}=10\text{mA}$ $T_{min}\leq T_a\leq T_{max}$		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	$I_{ref}$	$I_{KA}=10\text{mA}$ , $R_1=10\text{K}\Omega$ $R_2=\infty$		1.5	4	$\mu\text{A}$
Deviation Of Reference Input Current Over Full Temperature Range	$\Delta I_{ref}/\Delta T$	$I_{KA}=10\text{mA}$ , $R_1=10\text{K}\Omega$ $R_2=\infty$ $T_A=\text{full Temperature}$		0.4	1.2	$\mu\text{A}$
Minimum cathode current for regulation	$I_{KA(min)}$	$V_{KA}=V_{REF}$		0.45	1.0	mA
Off-state cathode Current	$I_{KA(OFF)}$	$V_{KA}=36\text{V}$ , $V_{REF}=0$		0.05	1.0	$\mu\text{A}$
Dynamic Impedance	$Z_{KA}$	$V_{KA}=V_{REF}$ , $I_{KA}=1$ to 100mA $f\leq 1.0\text{KHz}$		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

## Typical Characteristics

CJ431

