

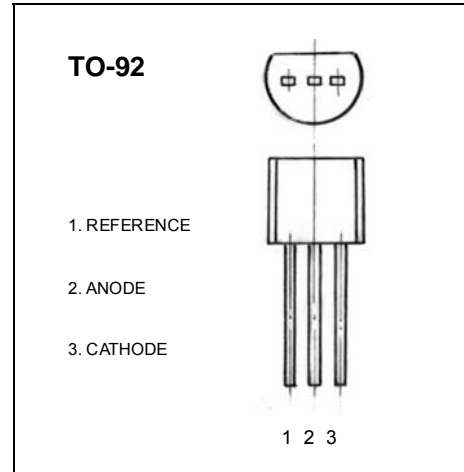


**TO-92 Encapsulate Adjustable Reference Source**

**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

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

Parameter	Symbol	Test conditions	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	$\Delta V_{ref}/\Delta V_{KA}$	$I_{KA}=10mA$		-1.0	-2.7	m V/V
				-0.5	-2.0	m V/V
Reference Input Current	$I_{ref}$	$I_{KA}=10mA, R_1=10K\Omega$ $R_2=\infty$		1.5	4	$\mu A$
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	$\mu A$
Minimum cathode current for regulation	$I_{KA}(min)$	$V_{KA}=V_{REF}$		0.45	1.0	mA
Off-state cathode Current	$I_{KA}(OFF)$	$V_{KA}=36V, V_{REF}=0$		0.05	1.0	$\mu A$
Dynamic Impedance	$Z_{KA}$	$V_{KA}=V_{REF}, I_{KA}=1\ to\ 100mA$ $f \leq 1.0KHZ$		0.15	0.5	$\Omega$

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

**CLASSIFICATION OF  $V_{ref}$**

Rank	CJ431	CJ431 A	CJ431 B
Range	2.487-2.512	2.475-2.525	2.450-2.550