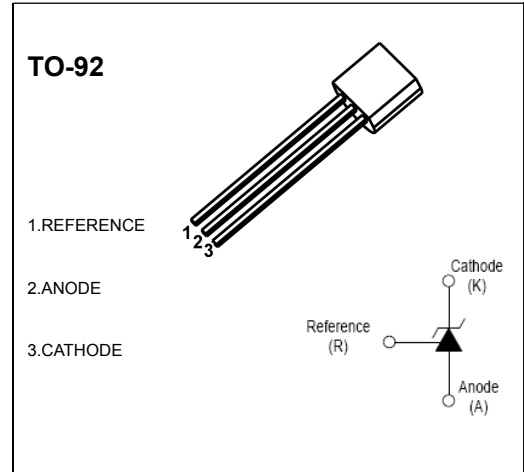


## TO-92 Encapsulate Adjustable Reference Source

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	Unit	Value	Symbol
Cathode Voltage	V <sub>KA</sub>	37	V
Cathode Current Range (Continuous)	I <sub>KA</sub>	-100~+150	mA
Reference Input Current Range	I <sub>ref</sub>	0.05~+10	mA
Power Dissipation	P <sub>D</sub>	770	mW
Thermal Resistance from Junction to Ambient	R <sub>θJA</sub>	162	°C/W
Operating Ambient Temperature Range	T <sub>[ ]</sub>	0~+70	°C
Storage Temperature Range	T <sub>stg</sub>	-65~+150	°C
Operating Junction Temperature	T <sub>j</sub>	150	°C

### ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reference Input Voltage (Fig.1)	V <sub>ref</sub>	V <sub>KA</sub> =V <sub>REF</sub> , I <sub>KA</sub> =10mA	2.450	2.5	2.550	V
Deviation of Reference Output Voltage Over Temperature (note) (Fig.1)	ΔV <sub>ref</sub> /ΔT	V <sub>KA</sub> =V <sub>REF</sub> , I <sub>KA</sub> =10mA T <sub>min</sub> ≤T <sub>a</sub> ≤T <sub>max</sub>		4.5	17	μV/°C
Ratio Of Change in Reference Input Voltage to the Change in Cathode Voltage (Fig.2)	ΔV <sub>ref</sub> /ΔV <sub>KA</sub>	I <sub>KA</sub> =10mA	ΔV <sub>KA</sub> =10V~V <sub>REF</sub>	-1.0	-2.7	μmV/V
			ΔV <sub>KA</sub> =36V~10V	-0.5	-2.0	μmV/V
Reference Input Current (Fig.2)	I <sub>ref</sub>	I <sub>KA</sub> =10mA, R <sub>1</sub> =10Ω R <sub>2</sub> =∞		1.5	4	μA
Deviation Of Reference Input Current Over Full Temperature Range (Fig.2)	ΔI <sub>ref</sub> /ΔT	I <sub>KA</sub> =10mA, R <sub>1</sub> =10Ω R <sub>2</sub> =∞ T <sub>A</sub> =full Temperature		0.4	1.2	μA
Minimum Cathode Current for Regulation (Fig.1)	I <sub>KA(min)</sub>	V <sub>KA</sub> =V <sub>REF</sub>		0.45	1.0	mA
Off-state Cathode Current (Fig.3)	I <sub>KA(OFF)</sub>	V <sub>KA</sub> =36V, V <sub>REF</sub> =0		0.05	1.0	μA
Dynamic Impedance	Z <sub>KA</sub>	V <sub>KA</sub> =V <sub>REF</sub> , I <sub>KA</sub> =1 to 100mA f≤1.0kHz		0.15	0.5	Ω

Note: T<sub>MIN</sub>=0°C, T<sub>MAX</sub>=+70°C

### CLASSIFICATION cZVref

Rank	0.5%	1%
Range	2.487-2.513	2.475-2.525