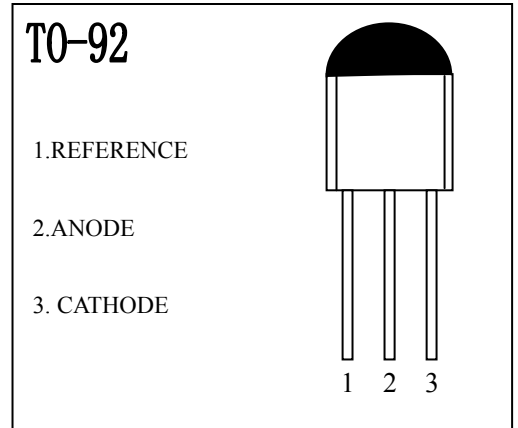


深圳市晶泰源电子有限公司

TL431 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 temperatureLow 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(Continous)	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 ($T_{amp}=25^{\circ}C$ unless otherwise specified) Note: $T_{MIN}=0^{\circ}C, T_{MAX}=+70^{\circ}C$

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reference Input Voltage	V_{ref}	$V_{KA}=V_{REF}, I_{KA}=10mA$	2.445	2.495	2.545	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	$\Delta V_{ref}/\Delta V_{KA}$	$I_{KA}=10mA$ $\Delta V_{KA} = 10V \sim V_{REF}$		-1.0	-2.7	mV/V
		$\Delta V_{KA} = 36V \sim 10V$		-0.5	-2.0	mV/V
Reference Input Current	I_{ref}	$I_{KA}=10 mA, R_1=10 K \Omega, R_2=\infty$		1.5	4	uA
Deviation Of Reference Input Current Over Full Temperature Range	$\Delta I_{ref}/\Delta T$	$I_{KA}=10 mA, R_1=10 K \Omega, R_2=\infty$ $T_A=full \text{ Temperature}$		0.4	1.2	uA
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	uA
Dynamic Impedance	Z_{KA}	$V_{KA} = V_{REF}, I_{KA}=1to100mA$ $f \leq 1.0KHZ$		0.15	0.5	Ω

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

CLASSIFICATION OF V_{ref}

Rank	0.5%	1%	2%
Range	2.483-2.507	2.470-2.520	2.445-2.545