



Micro Commercial Components  
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# TL431V

## Adjusttable Accurate Refence Source

### Features

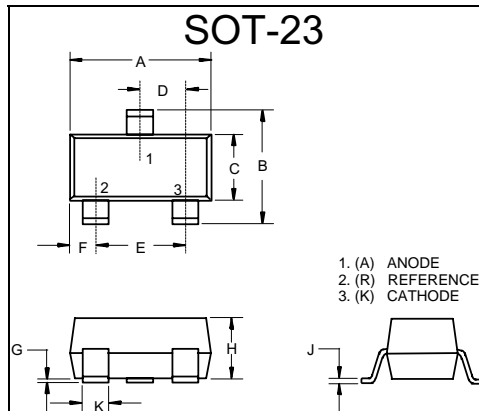
- Output voltage can be adjusted to 36V
- Trapping current capability is 1 to 100 mA
- The effective temperature compensation in the working range of full temperature
- Low dynamic output impedance, its typical value is 0.2  $\Omega$
- Low output noise voltage
- Fast on-state response
- x Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0

### Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage	$V_I$	37	V
Operating Temperature	$T_{OPR}$	0---70	$^{\circ}C$
Storage Temperature Range	$T_{STG}$	-55---+150	$^{\circ}C$

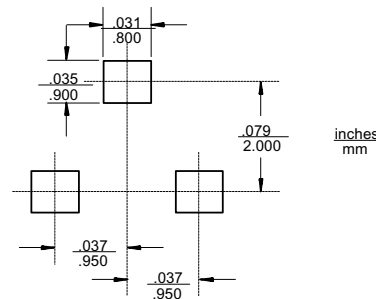
### Electrical Characteristics @ 25 $^{\circ}C$ Unless Otherwise Specified

Parameter	Sym	Min	Typ	Max	Test conditions
Reference Input Voltage	$V_{ref}$	2.45V	2.50V	2.55V	$V_{KA}=V_{REF}, I_{KA}=10mA$
Deviation of reference input voltage	$\Delta V_{ref}/\Delta T$		4.5mV	17mV	$V_{KA}=V_{REF}, I_{KA}=10mA$ $T_{min} \leq T_a \leq T_{max}$
Ratio of Change in Reference Input Voltage to the Change in Cathode Voltage	$\frac{\Delta V_{ref}/\Delta V_{KA}}$		-1.0	-2.7	$\Delta V_{KA}=10V \sim V_{ref}$ $\Delta V_{KA}=36V \sim 10V$ $I_{KA}=10mA$
Reference Input Current	$I_{ref}$		1.5uA	4uA	$I_{KA}=10mA, R1=10K\Omega$ $R2=\infty$
Deviation of Reference Input Current Over Full Temperature Range	$\Delta I_{ref}/\Delta T$		0.4uA	1.2uA	$I_{KA}=10mA, R1=10K\Omega$ $R2=\infty$ $T_A=full\ Temperature$
Minimum Cathode Current for Regulation	$I_{KA}(min)$		0.45mA	1.0mA	$V_{KA}=V_{REF}$
Off-State Cathode Current	$I_{KA}(OFF)$		0.05uA	1.0uA	$V_{KA}=36V, V_{REF}=0V$
Dynamic Impedance	$Z_{KA}$		0.15 $\Omega$	0.5 $\Omega$	$V_{KA}=V_{REF}, I_{KA}=1\ to\ 100mA, f \leq 1.0KHz$



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.098	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

### Suggested Solder Pad Layout





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