

TL431ALP

Programmable Precision Regulator

Features

- Programmable Output Voltage 36V
- Sink Current Capability of 0.1mA to 100 mA
- Temperature Compensated for operation over full rated operating temperature range
- Low output noise voltage and Fast turn on response
- Marking Code: TL431
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings

Parameter	Symbol	Value	Unit
Cathode Voltage	V_{KA}	37	V
Cathode Current Range	I_K	-100~150	mA
Reference Input Current Range	I_{REF}	0.05~10	mA
Power Dissipation at 25°C	P_D	0.7	W
Thermal Resistance junction to ambient	$R_{\theta JA}$	178	°C/W
Junction Temperature	T_J	0~150	°C
Operating Temperature	T_{opr}	0~70	°C
Storage Temperature Range	T_{STG}	-55~+150	°C

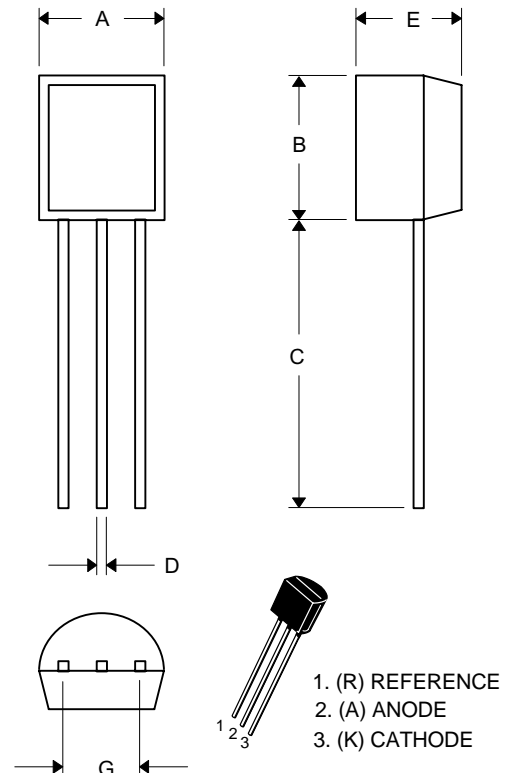
Recommended Operating Conditions

Parameter	Sym	Min	Max	Unit
Cathode Voltage	V_{KA}	V_{REF}	36	V
Cathode Current Range	I_K	1.0	100	mA

Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Sym	Min	Typ	Max	Test conditions
Reference Input Voltage	V_{ref}	2.475V	2.500V	2.525V	
Deviation of reference input voltage	$V_{ref(dev)}$		3.0mV	17mV	$T_{min} \leq T_a \leq T_{max}$
Ratio of Change in Reference Input Voltage to the Change in Cathode Voltage	$\frac{\Delta V_{ref}}{\Delta V_{KA}}$		-1.4	-2.7	$\Delta V_{KA}=10V \sim V_{ref}$
			-1.0	-2.0	$\Delta V_{KA}=36V \sim 10V$
Reference Input Current	I_{ref}		1.8µA	4.0µA	$I_{KA}=10mA, R_1=10K\Omega, R_2=\infty$
Deviation of Reference Input Current Over Full Temperature Range	$\frac{\Delta I_{ref}}{\Delta T}$		0.4µA	1.2µA	$I_{KA}=10mA, R_1=10K\Omega, R_2=\infty, T_A=full\ Temperature$
Minimum Cathode Current for Regulation	$I_{KA(min)}$		0.5mA	1.0mA	
Off-State Cathode Current	$I_{KA(off)}$		0.26µA	1.0µA	$V_{KA}=36V, V_{REF}=0V$
Dynamic Impedance	Z_{KA}		0.22Ω	0.5Ω	$I_{KA}=10\ to\ 100mA, f \leq 1.0KHz$

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DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.175	.185	4.45	4.70	
B	.175	.185	4.46	4.70	
C	.500	---	12.7	---	
D	.016	.020	0.41	0.63	
E	.135	.145	3.43	3.68	
G	.095	.105	2.42	2.67	



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Ordering Information :

Device	Packing
Part Number-AP	Ammo Packing: 2Kpcs/Ammo Box
Part Number-BP	Bulk: 100Kpcs/Carton

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