



Micro Commercial Components

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TL431LP

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
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- Marking: TL431

Maximum Ratings @ T_{opr} Applies Unless Otherwise Noted

Parameter	Symbol	Value	Unit
Input Voltage (Vo=5.8V)	V ₁	37	V
Operating Junction Temperature	T _{opr}	0---70	°C
Storage Temperature Range	T _{stg}	-55---+150	°C

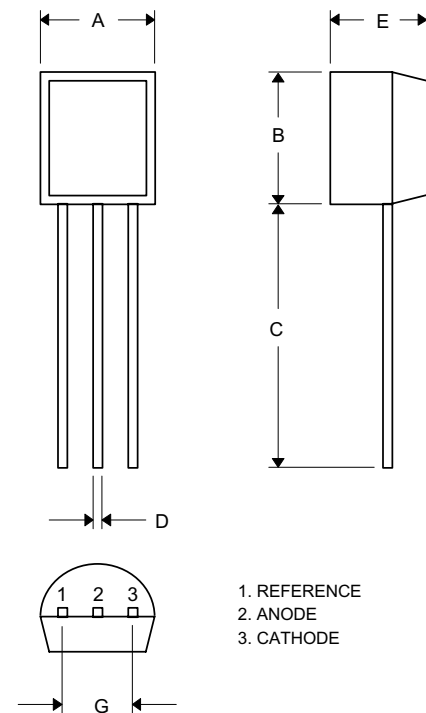
Electrical Characteristics @ 25 °C Unless Otherwise Specified

Parameter	Sym	Min	Typ	Max	Test conditions
Reference Input Voltage	V _{ref}	2.44V	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} ≤ T _a ≤ 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=10KΩ R2=∞
Deviation of Reference Input Current Over Full Temperature Range	$\Delta I_{ref}/\Delta T$		0.4uA	1.2uA	I _{KA} =10mA, R1=10KΩ R2=∞ 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}		0.15Ω	0.5Ω	V _{KA} =V _{REF} , I _{KA} =1 to 100mA, f ≤ 1.0KHz

*Note: Bypass Capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators

Programmable Precision Shunt Regulator

TO-92



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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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Fig. 1 – Cathode Current vs. Cathode Voltage

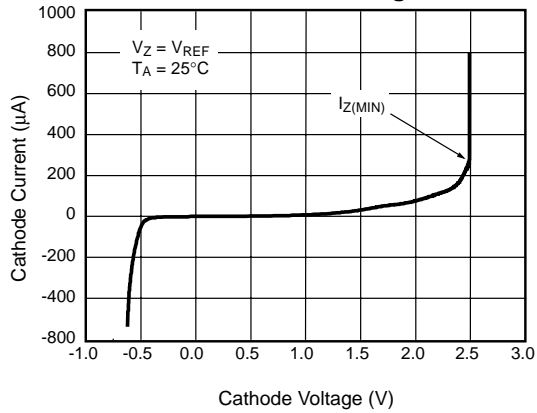


Fig. 2 – Reference Voltage vs. Temperature

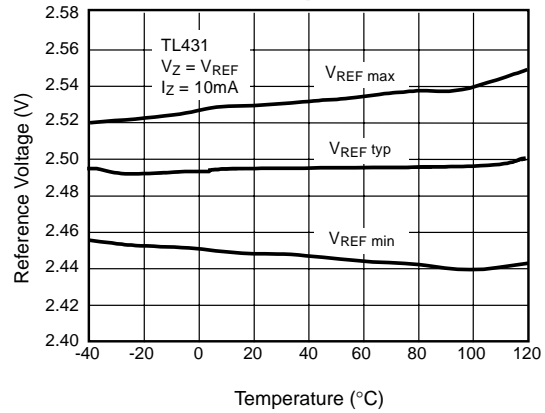


Fig. 3 – Reference Input Current vs. Temperature

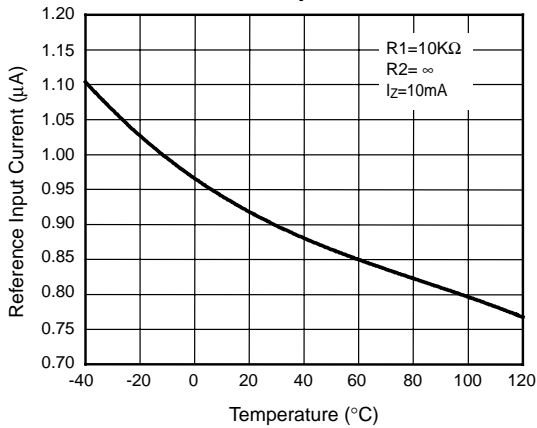


Fig. 4 – Dynamic Impedance vs. Temperature

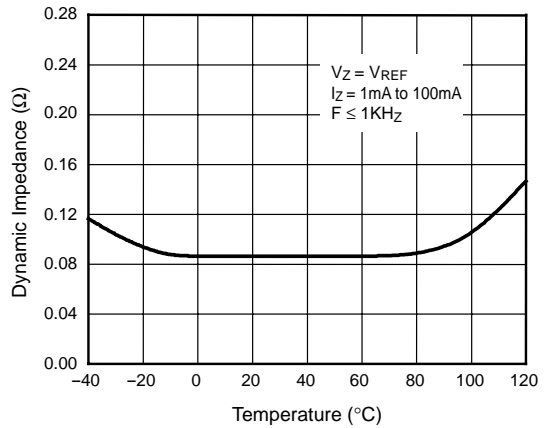


Fig. 5 – Change in Reference Voltage vs. Cathode Voltage

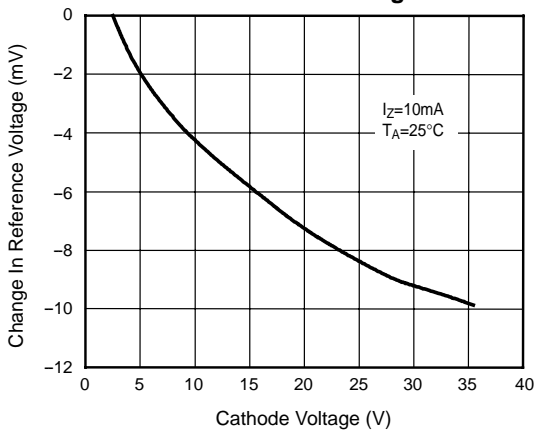
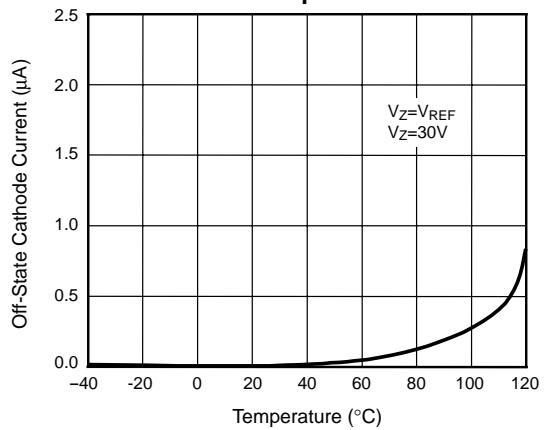


Fig. 6 – Off-State Cathode Current vs. Temperature





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Ordering Information

Device	Packing
(Part Number)-AP	Tape&Reel;2Kpcs/Box
(Part Number)-BP	Bulk;1Kpcs/Bag

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