



Features

- Halogen free available upon request by adding suffix "-HF"
- 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)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: TL431

Maximum Ratings @ T_{opr} Applies Unless Otherwise Noted

Parameter	Symbol	Value	Unit
Input Voltage (V _o =5.8V)	V ₁	37	V
Cathode Current Range(Continuous)	I _{KA}	-100~+150	mA
Reference Input Current Range	I _{ref}	0.05~+10	mA
Power Dissipation	P _D	770	mW
Operating Junction Temperature	T _{OPR}	0---70	°C
Storage Temperature Range	T _{STG}	-55---+150	°C

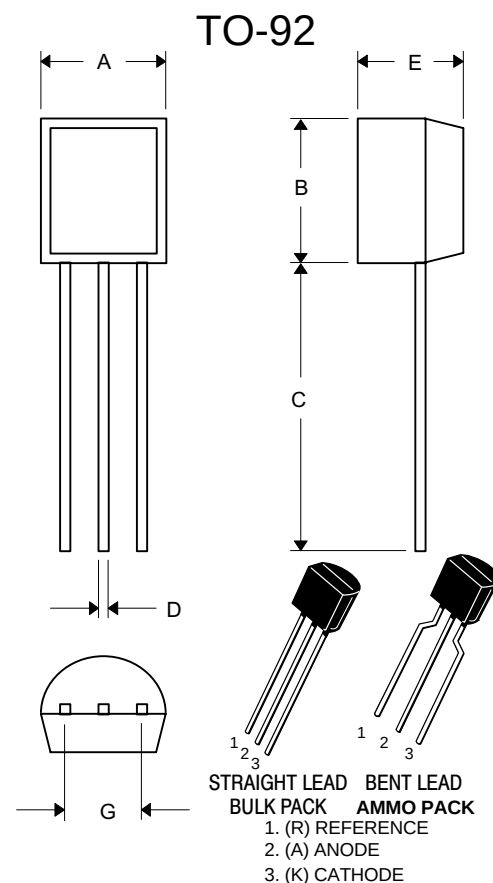
Electrical Characteristics @ 25 °C Unless Otherwise Specified

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	$\Delta V_{ref}/\Delta V_{KA}$		-1.0	-2.7	$\Delta V_{KA}=10V \sim V_{ref}$ I _{KA} =10mA
Reference Input Current	I _{ref}		1.5μA	4μA	I _{KA} =10mA, R1=10KΩ R2=∞
Deviation of Reference Input Current Over Full Temperature Range	$\Delta I_{ref}/\Delta T$		0.4μA	1.2μA	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)		0.05μA	1.0μA	V _{KA} =36V, V _{REF} =0V
Dynamic Impedance	Z _{KA}		0.15 Ω	0.5 Ω	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

TL431LP

Programmable Precision Shunt Regulator



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.175	.185	4.45	4.70	
B	.175	.185	4.45	4.70	
C	.500	---	12.70	---	
D	.016	.020	0.41	0.63	
E	.135	.145	3.43	3.68	
G	.095	.105	2.42	2.67	Straight Lead
	.173	.220	4.40	5.60	Bent Lead

* For ammo packing detailed specification, click here to visit our website of product packaging for details.

TL431LP



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Fig. 1 – Cathode Current vs. Cathode Voltage

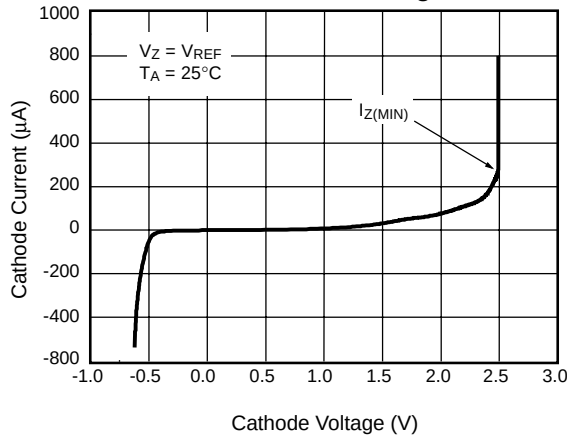


Fig. 2 – Reference Voltage vs. Temperature

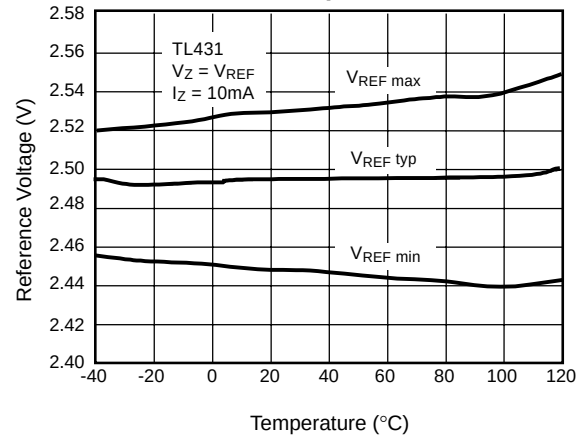


Fig. 3 – Reference Input Current vs. Temperature

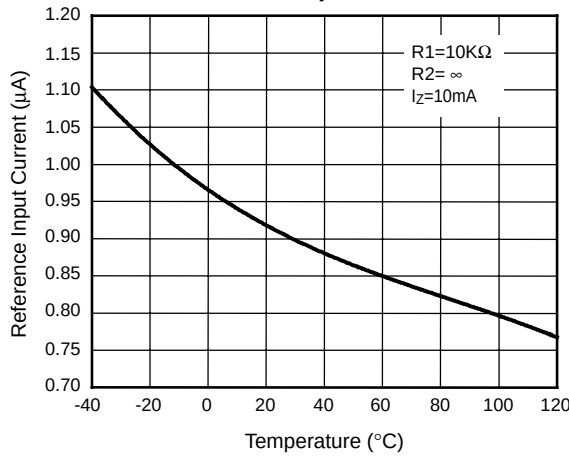


Fig. 4 – Dynamic Impedance vs. Temperature

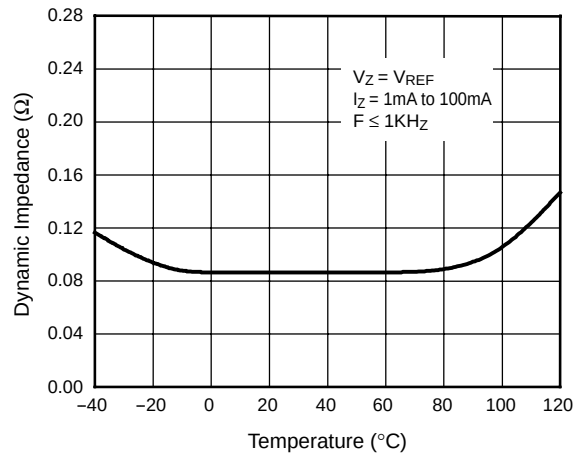


Fig. 5 – Change in Reference Voltage vs. Cathode Voltage

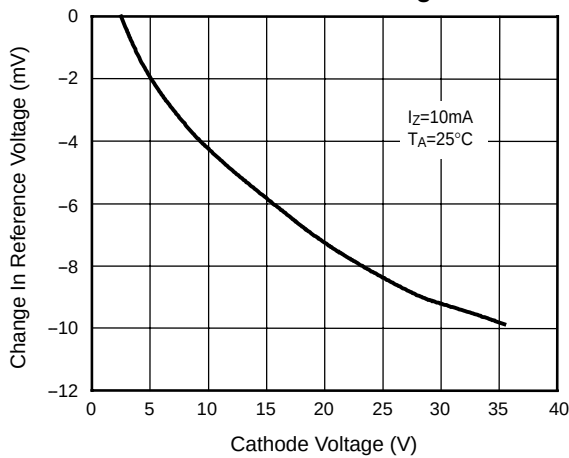
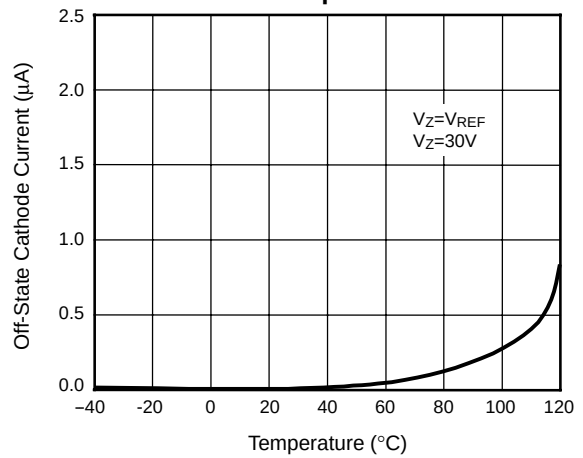


Fig. 6 – Off-State Cathode Current vs. Temperature





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Ordering Information :

Device	Packing
Part Number-AP	Ammo Packing: 20Kpcs/Carton
Part Number-BP	Bulk: 100Kpcs/Carton

Note : Adding "-HF" suffix for halogen free, eg. Part Number-AP-HF

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