Programmable Precision Regulator

Features

- Programmable Output Voltage 36V
- Sink Current Capability of 0.1mA to 100 mA
- Low Output Noise Voltage and Fast Turn On Response
- Temperature Compensated for Operation over Full Rated Operating Temperature Range
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

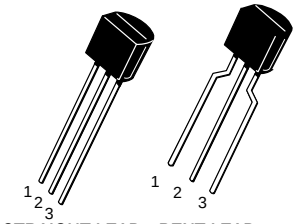
Maximum Ratings

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℃	P_D	0.7	W
Thermal Resistance junction to ambient	$R_{\theta JA}$	178	℃/W
Junction Temperature	T_J	0~150	℃
Operating Temperature	T_{opr}	0~70	℃
Storage Temperature Range	T_{STG}	-55~150	℃

Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
Cathode Voltage	V_{KA}	V_{REF}	36	V
Cathode Current Range	I_K	1	100	mA

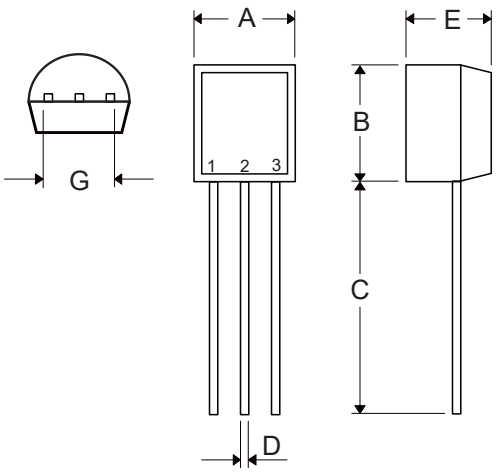
Marking Code: TL431



STRAIGHT LEAD BULK PACK BENT LEAD **AMMO PACK**

1. (R) REFERENCE
2. (A) ANODE
3. (K) CATHODE

TO-92



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.169	0.185	4.30	4.70	
B	0.169	0.185	4.30	4.70	
C	0.500	-----	12.70	-----	
D	0.015	0.022	0.38	0.55	
E	0.130	0.146	3.30	3.70	
G	0.095	0.105	2.42	2.67	Straight Lead
	0.173	0.220	4.40	5.60	Bent

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reference Input Voltage	V_{ref}		2.475	2.5	2.525	V
Deviation of Reference Input Voltage	$V_{ref(dev)}$	$T_{min} \le T_a \le T_{max}$		3.0	17	mV
Ratio of Change in Reference Input Voltage to the Change in Cathode Voltage	$\triangle V_{ref} / \triangle V_{KA}$	$\triangle V_{KA}$=10V~Vref		-1.4	-2.7	
		$\triangle V_{KA}$=36V~10V		-1.0	-2.0	
Reference Input Current	I_{ref}	I_{KA}=10mA, R_1=10KΩ , R_2=∞		1.8	4.0	μA
Deviation of Reference Input Current Over Full Temperature Range	$\triangle I_{ref} / \triangle T$	I_{KA}=10mA, R_1=10KΩ , R_2=∞ T_A=full Temperature		0.4	1.2	μA
Minimum Cathode Current for Regulation	$I_{KA(min)}$			0.5	1	mA
Off-State Cathode Current	$I_{KA(off)}$	V_{KA}=36V, V_{REF}=0V		0.26	1	μA
Dynamic Impedance	Z_{KA}	I_{KA}=10 to 100mA, f≤1.0KHz		0.22	0.5	Ω

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-BP-HF
Adding "-HF" Suffix for Halogen Free, eg. Part Number-AP-HF