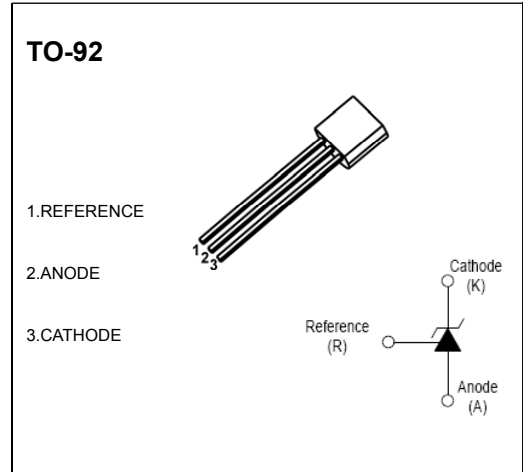


CJ431K Adjustable Accurate Reference Source

FEATURES

- The output voltage can be adjusted to 36V
- Low dynamic output impedance ,its typical value is 0.2Ω
- Trapping current capability is 1 to 100mA
- The typical value of the equivalent temperature factor in the whole temperature scope is 50 ppm/°C
- The effective temperature compensation in the working range of full temperature
- Low output noise voltage
- Fast on-state response
- ESD protected up to 2KV



ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Units
Cathode Voltage	V_{KA}	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
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	162	°C/W
Operating temperature	T_{opr}	-25~+125	°C
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-65~+150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

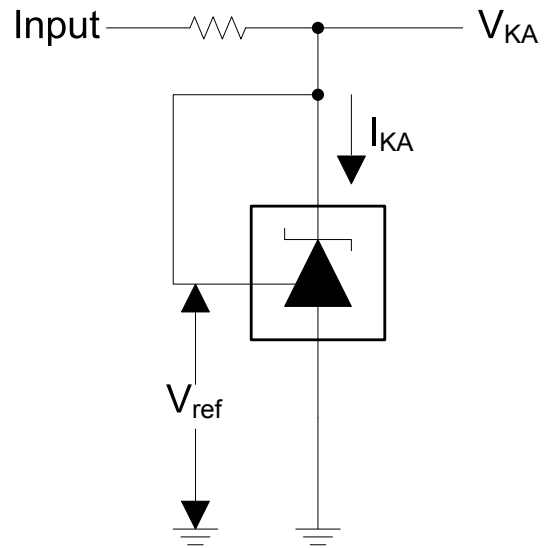
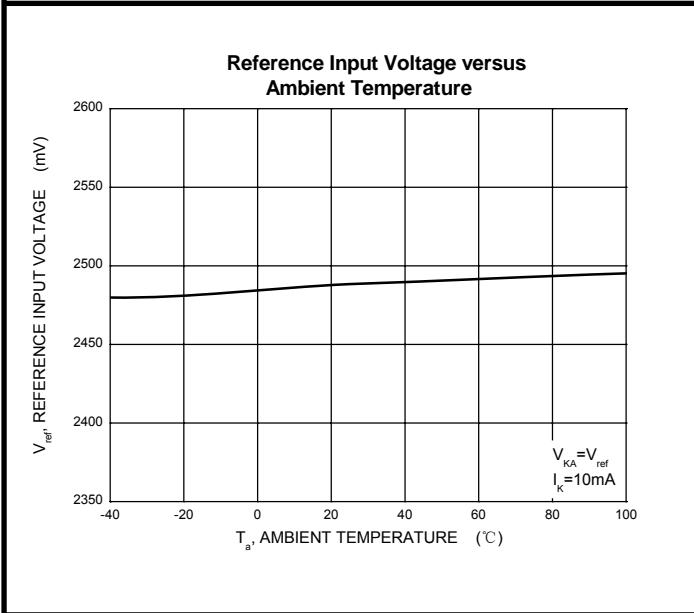
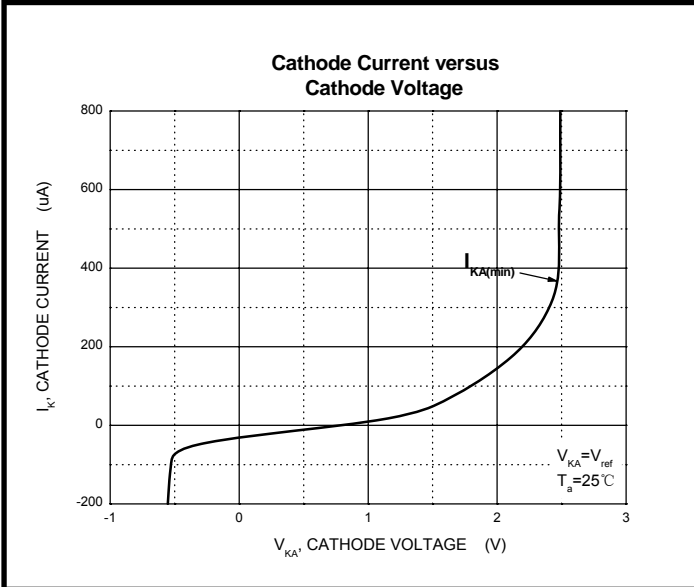
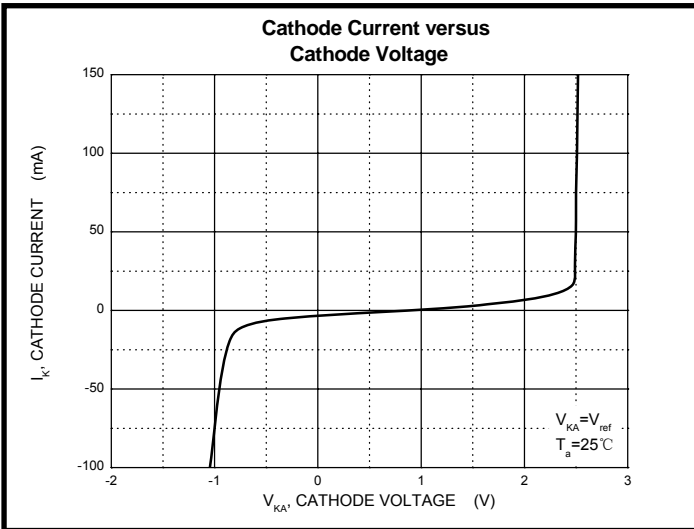
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reference input voltage	V_{ref}	$V_{KA}=V_{REF}, I_{KA}=10mA$	2.470		2.520	V
Deviation of reference input voltage over temperature (note)	$\Delta V_{ref}/\Delta T$	$V_{KA}=V_{REF}, I_{KA}=10mA$ $T_{min} \leq T_a \leq T_{max}$		4.5	17	mV
Ratio of change in reference Input voltage to the change in cathode voltage	$\Delta V_{ref}/\Delta V_{KA}$	$I_{KA}=10mA$	$\Delta V_{KA}=10V \sim V_{REF}$	-1.0	-2.7	mV/V
			$\Delta V_{KA}=36V \sim 10V$	-0.5	-2.0	mV/V
Reference input current	I_{ref}	$I_{KA}=10mA, R_1=10k\Omega$ $R_2=\infty$		1.5	4	μA
Deviation of reference input current over full temperature range	$\Delta I_{ref}/\Delta T$	$I_{KA}=10mA, R_1=10k\Omega$ $R_2=\infty$ $T_A=-25$ to $125^\circ C$		0.4	1.2	μA
Minimum cathode current for regulation	$I_{KA(min)}$	$V_{KA}=V_{REF}$		0.45	1.0	mA
Off-state cathode current	$I_{KA(OFF)}$	$V_{KA}=40V, V_{REF}=0$		0.05	0.5	μA
Dynamic impedance	Z_{KA}	$V_{KA}=V_{REF}, I_{KA}=1$ to $100mA$ $f \leq 1.0kHz$		0.15	0.5	Ω

Note: $T_{MIN}=-25^\circ C, T_{MAX}=+125^\circ C$

CLASSIFICATION OF V_{ref}

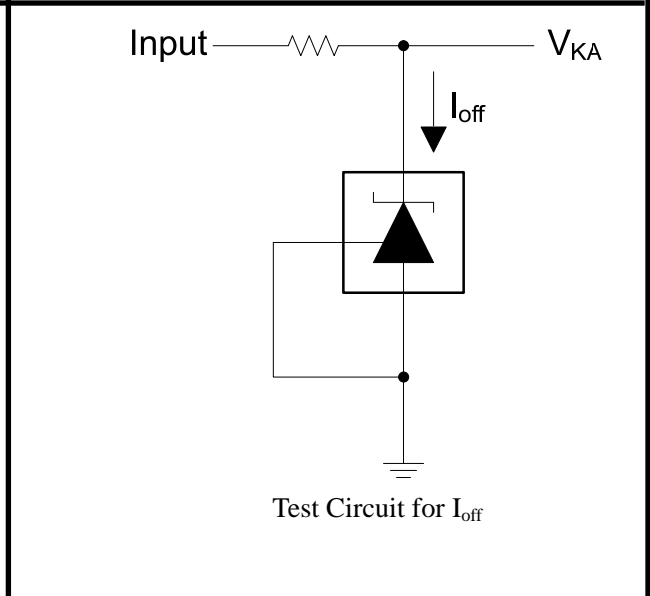
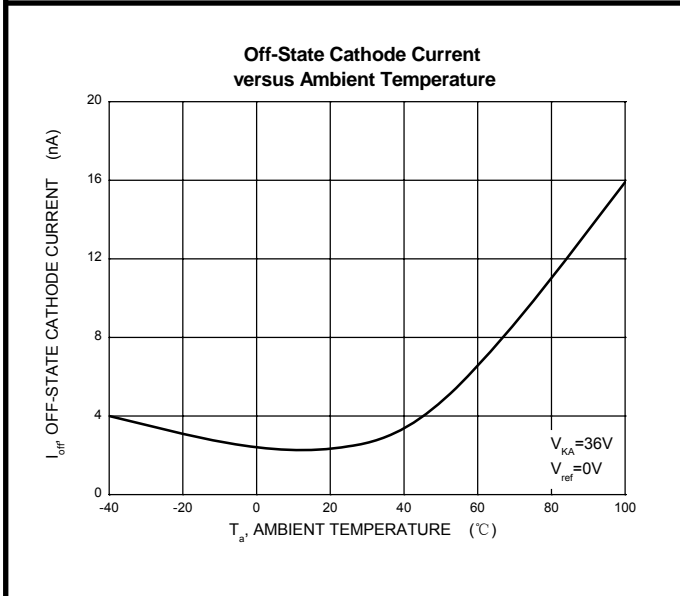
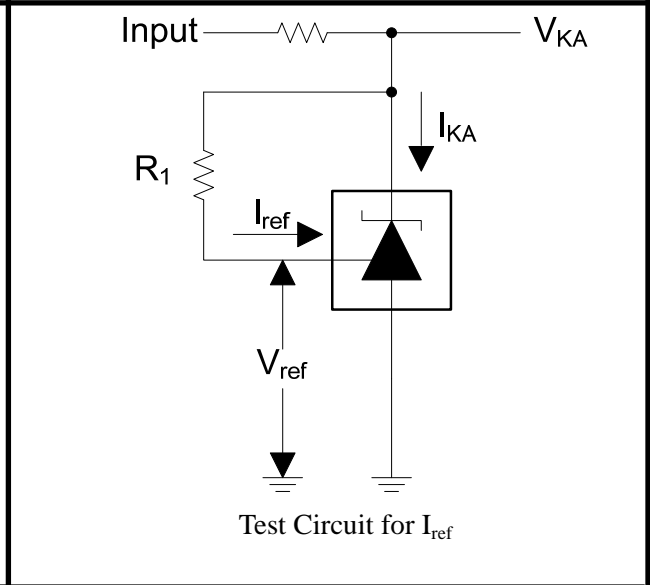
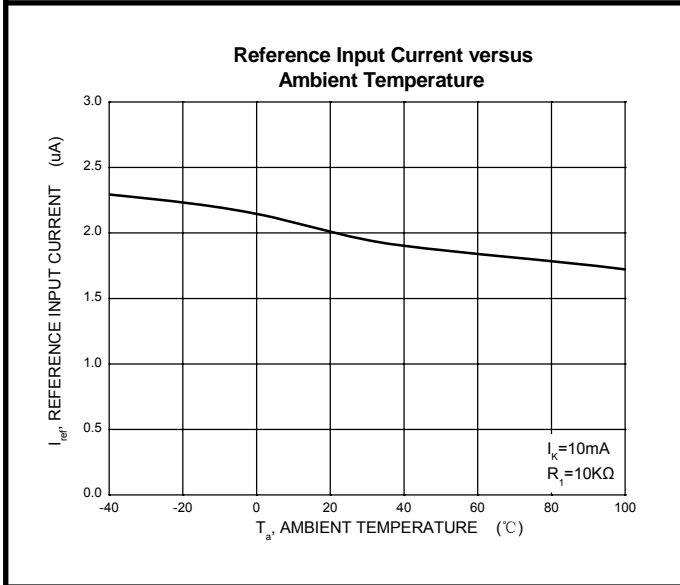
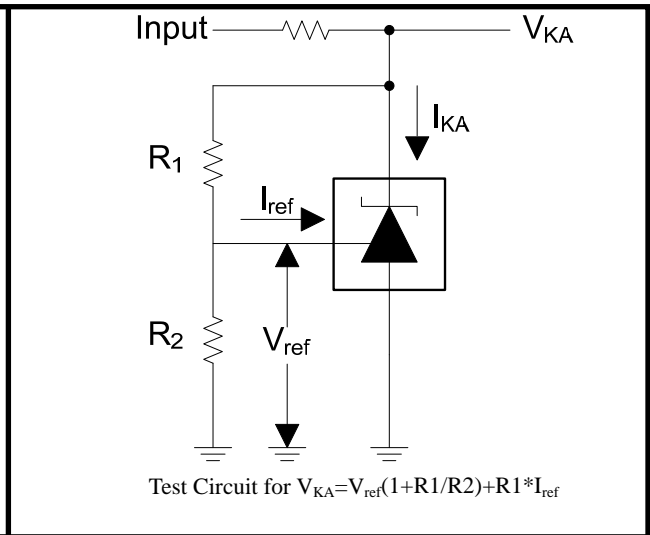
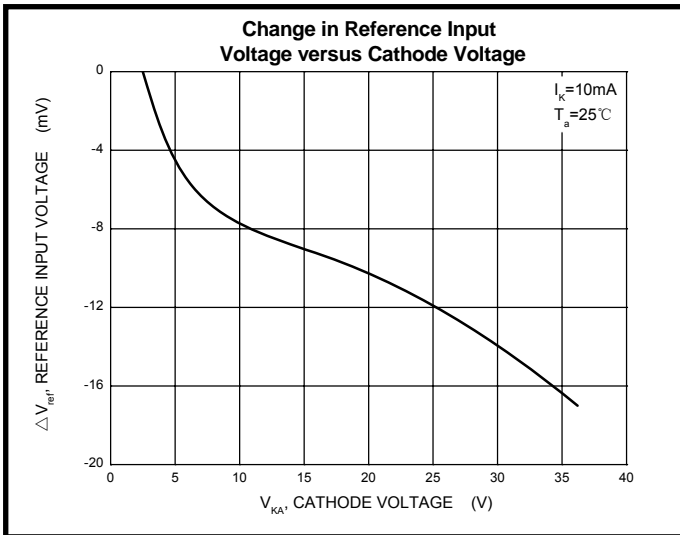
Rank	0.5%	1%
Range	2.482-2.508	2.47-2.52

Typical Characteristics

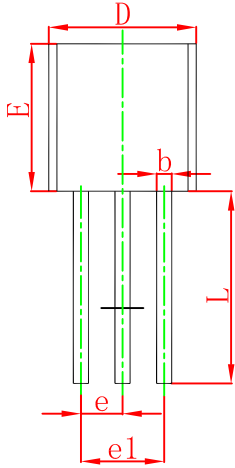
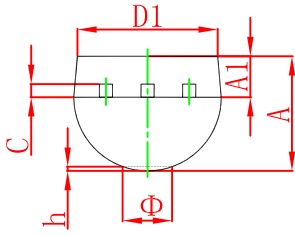


Test Circuit for $V_{KA} = V_{ref}$

Typical Characteristics

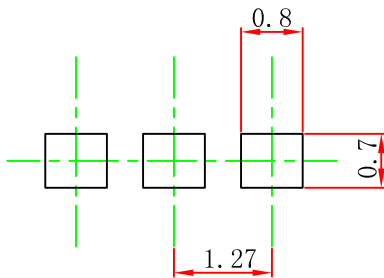


TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.400	3.600	0.134	0.142
A1	1.150	1.350	0.045	0.053
b	0.380	0.550	0.015	0.022
c	0.410	0.510	0.016	0.020
D	4.400	4.600	0.173	0.181
D1	3.430		0.135	
E	4.400	4.600	0.173	0.181
e	1.270 TYP.		0.050 TYP.	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92 Suggested Pad Layout



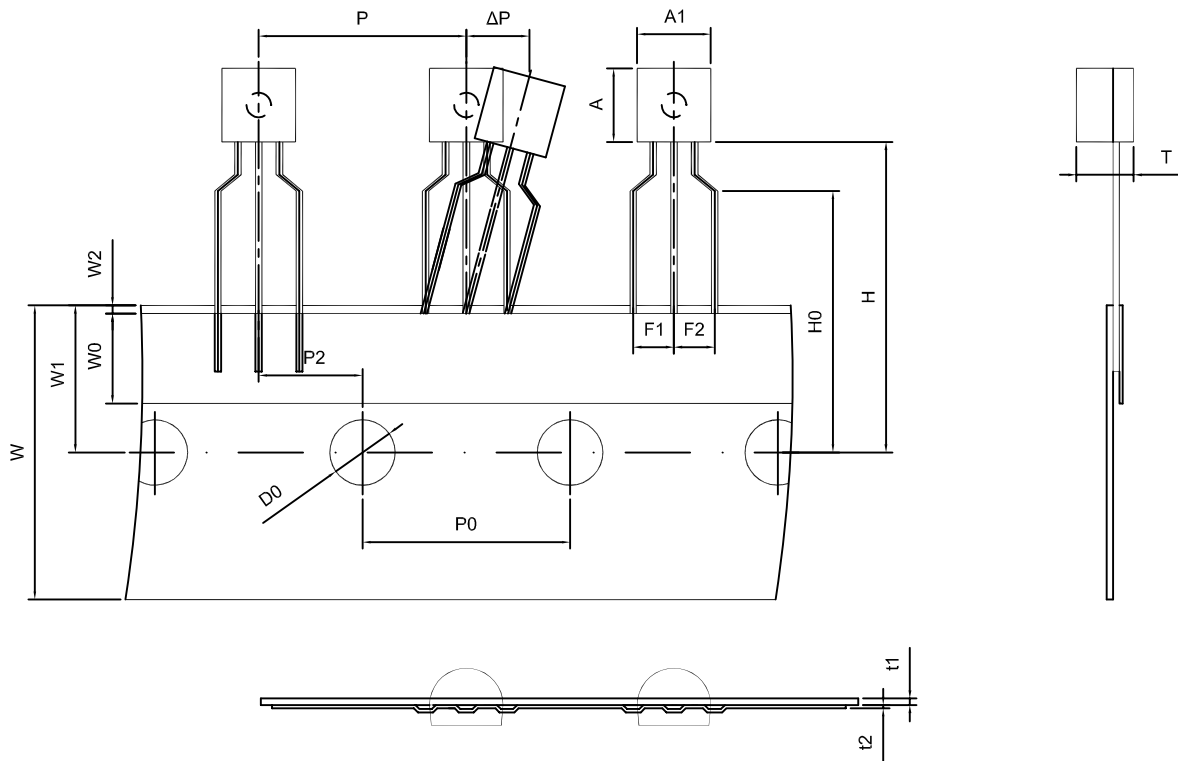
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

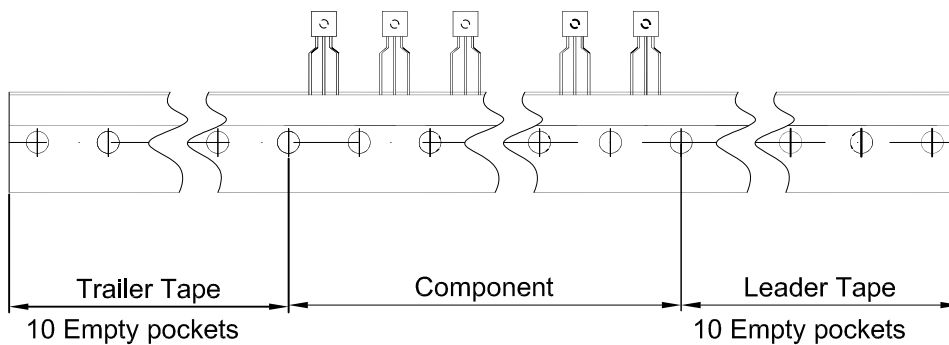
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TO-92 PACKAGE TAPEING DIMENSION



Dimensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
4.5±0.2	4.5±0.2	3.5±0.2	12.7±0.3	12.7±0.2	6.35±0.3	2.5±0.3	2.5±0.3	18.0+1.0/-0.5
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0±0.5	9.0±0.5	1.0 MAX.	19.0±1.0	16.0±0.5	4.0±0.5	0.4±0.05	0.2±0.05	0 ± 1.0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250