

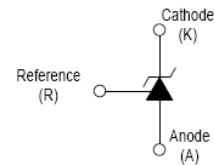
CJ431K Adjustable Reference Source

CJ431K Adjustable Accurate Reference Source

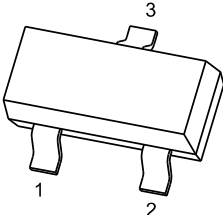
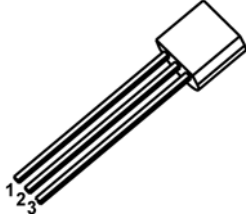
FEATURES

- 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

Equivalent Circuit



PIN CONNENCTIONS and MARKING

<p>CJ431K</p> 	<p>SOT -23</p> <p>1.REFERENCE 2.CATHODE 3. ANODE</p>
<p>CJ431K</p> 	<p>TO-92</p> <p>1.REFERENCE 2.ANODE 3.CATHODE</p>

ORDERING INFORMATION

Part Number	MARKING ⁽¹⁾	Package	Packing Method	Pack Quantity
CJ431K	431K •	SOT-23	Reel	3000pcs/Reel
CJ431K	CJ ⁽²⁾ TL431K • XXX	TO-92	Bulk	1000pcs/Bag
CJ431K-TA	CJ ⁽²⁾ TL431K • XXX	TO-92	Tape	2000pcs/Box

Notes:(1).Solid dot=Green molding compound device,if none,the normal device.

(2).XXX=Code

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

Parameter	Symbol	Value		Units
		SOT-23	TO-92	
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	300	770	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	162	°C/W
Operating temperature	T_{opr}	-25~ +85		°C
Junction Temperature	T_J	150		°C
Storage Temperature Range	T_{stg}	-65~+150		°C

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

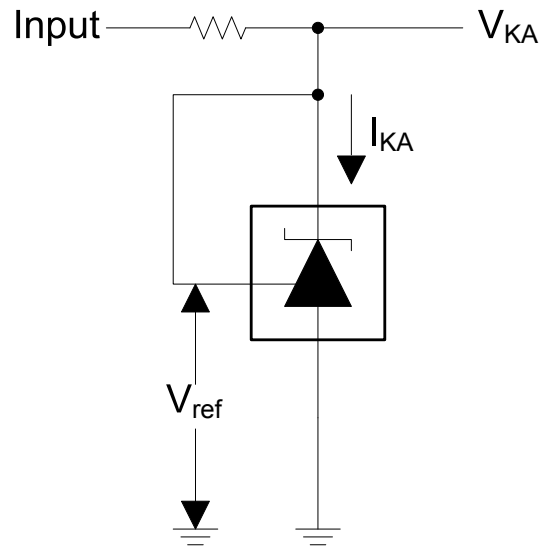
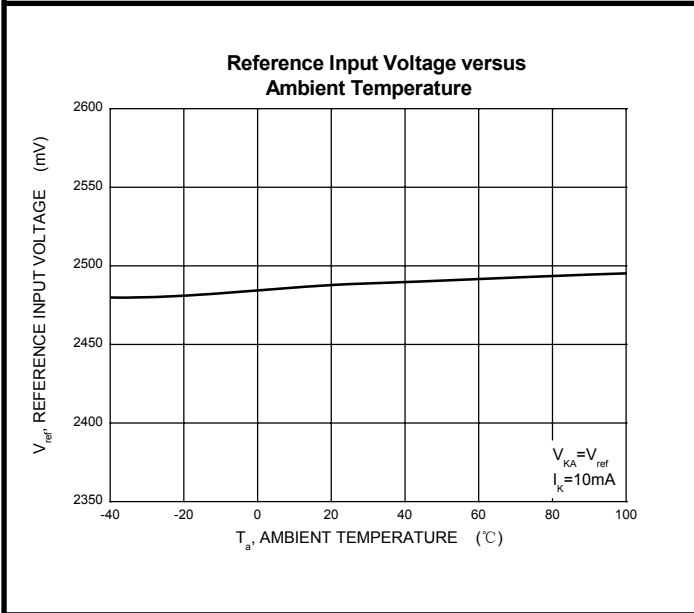
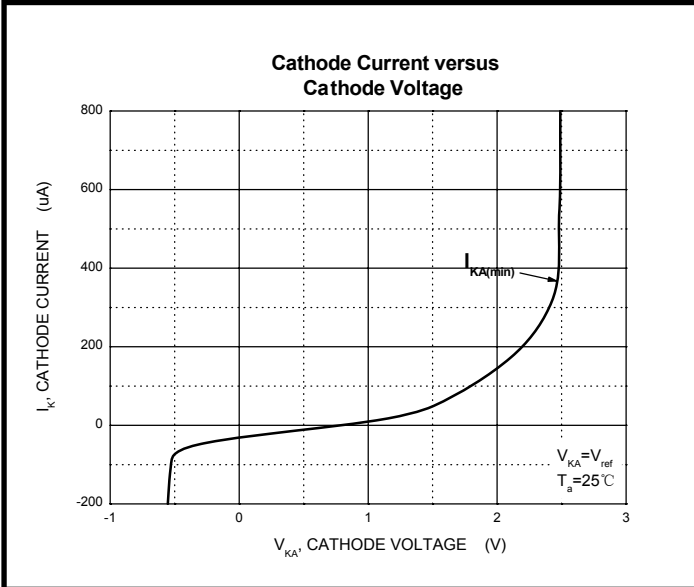
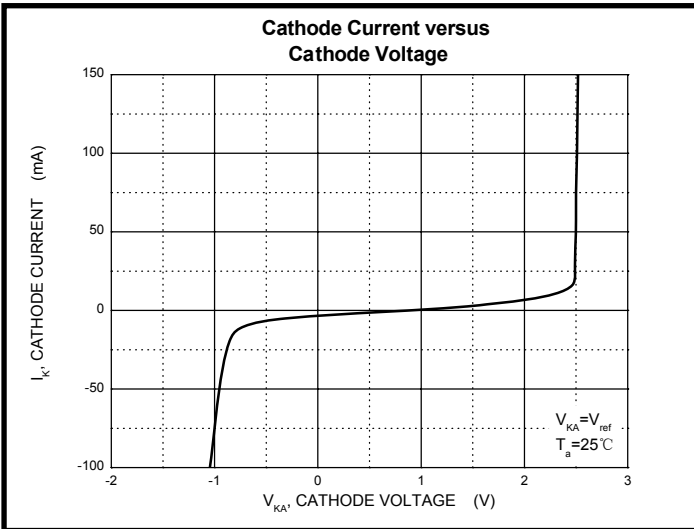
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reference input voltage	V_{ref}	$V_{KA}=V_{REF}, I_{KA}=10mA$	2.470		2.520	V
Deviation of reference input voltage over temperature (note)	$\Delta V_{ref}/\Delta T$	$V_{KA}=V_{REF}, I_{KA}=10mA$ $T_{min} \leq T_a \leq T_{max}$		4.5	17	mV
Ratio of change 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: $T_{MIN}=-25^\circ C, T_{MAX}=+85^\circ C$

CLASSIFICATION OF V_{ref}

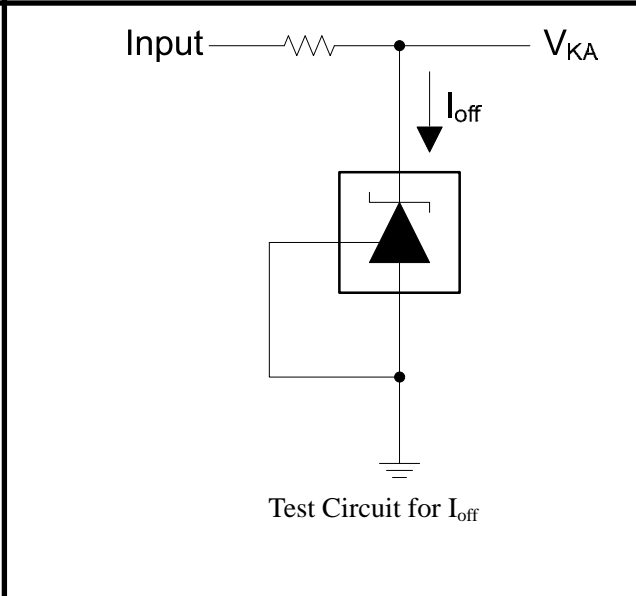
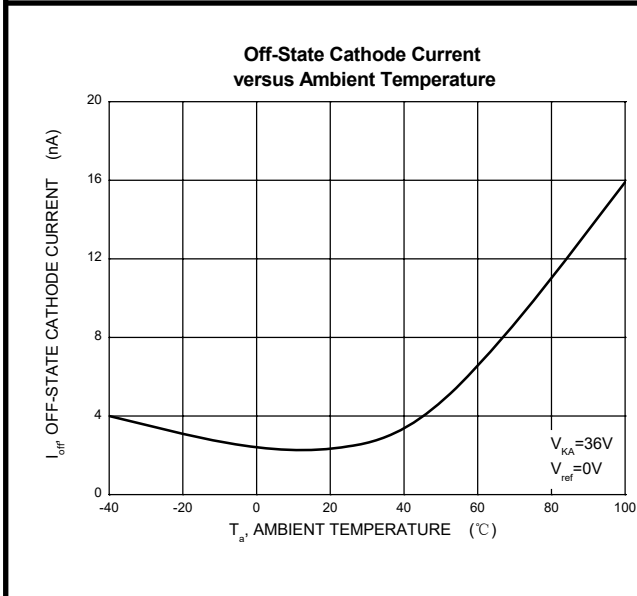
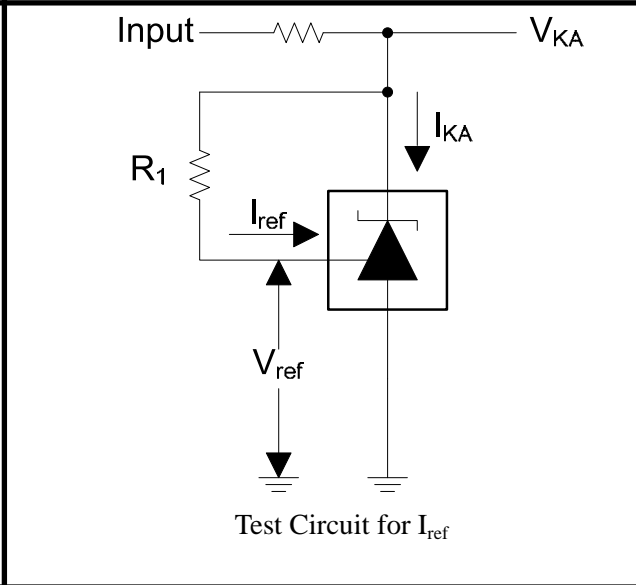
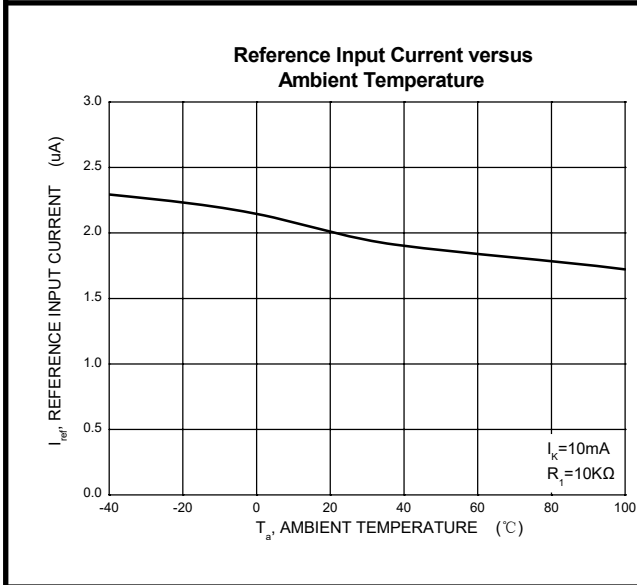
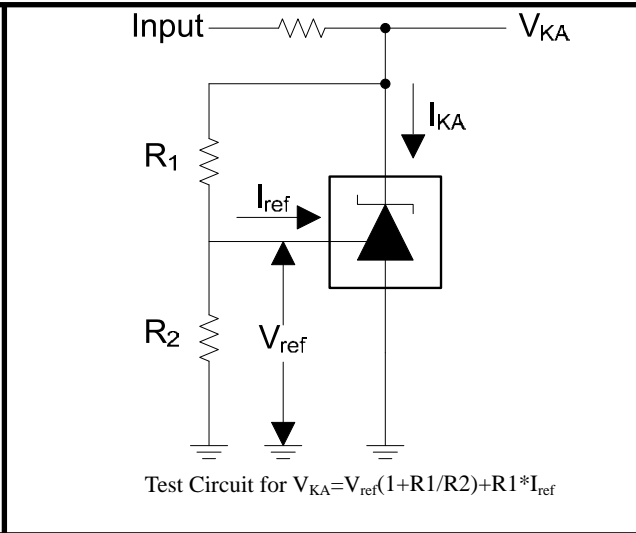
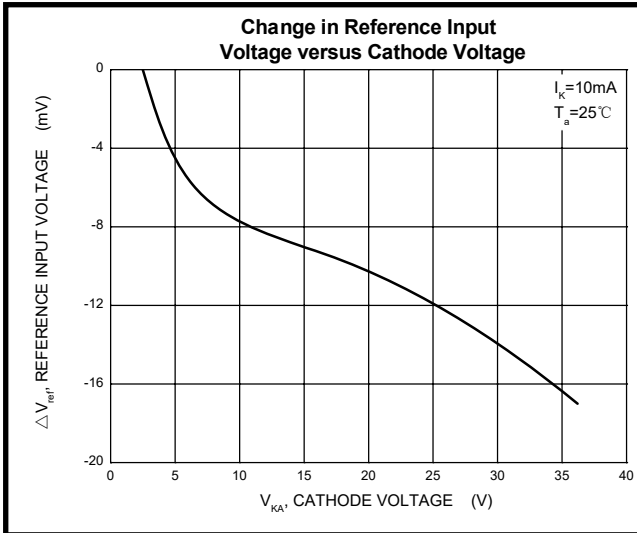
Rank	0.5%	1%
Range	2.482-2.508	2.47-2.52

Typical Characteristics

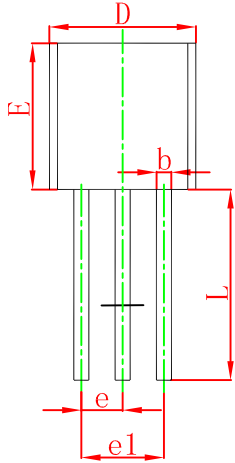
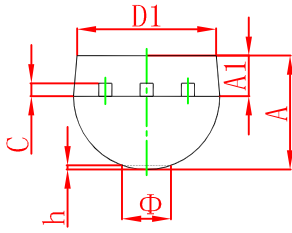


Test Circuit for $V_{KA} = V_{ref}$

Typical Characteristics

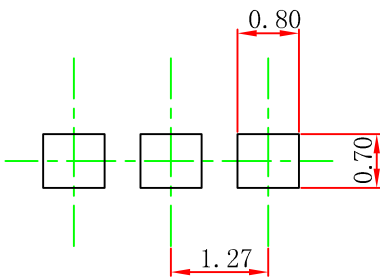


TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
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



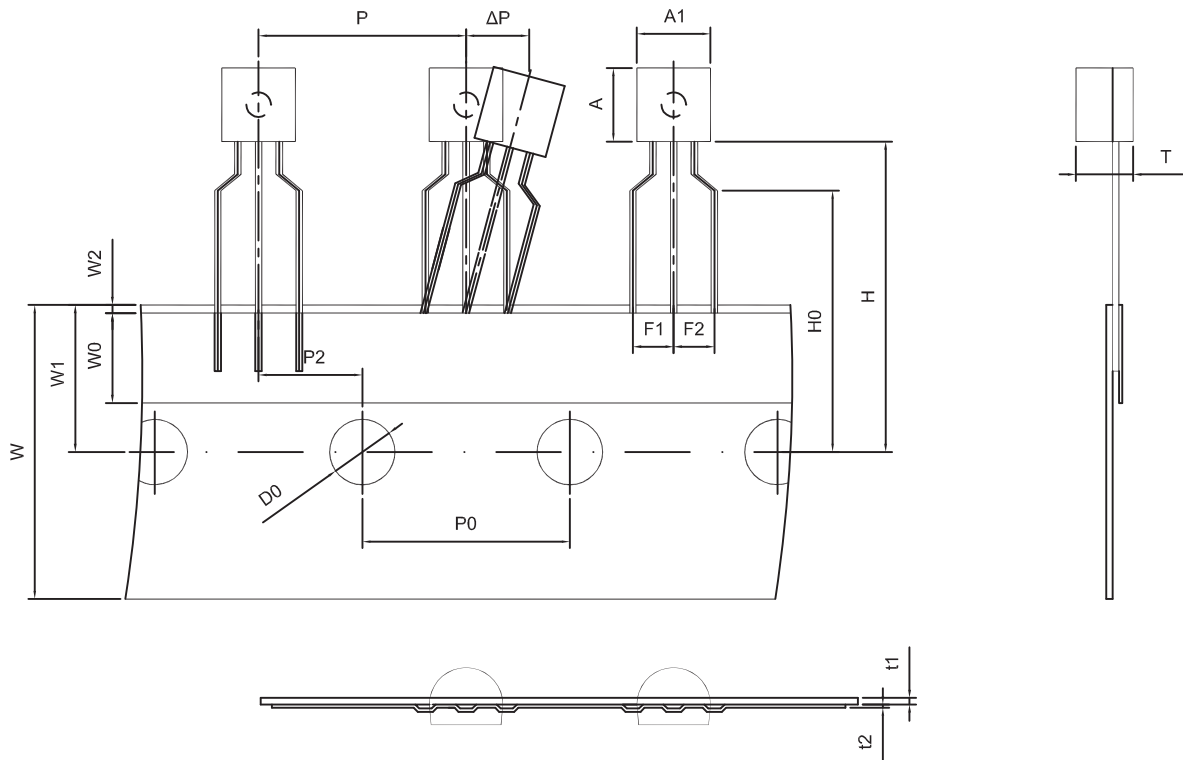
Note:

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

NOTICE

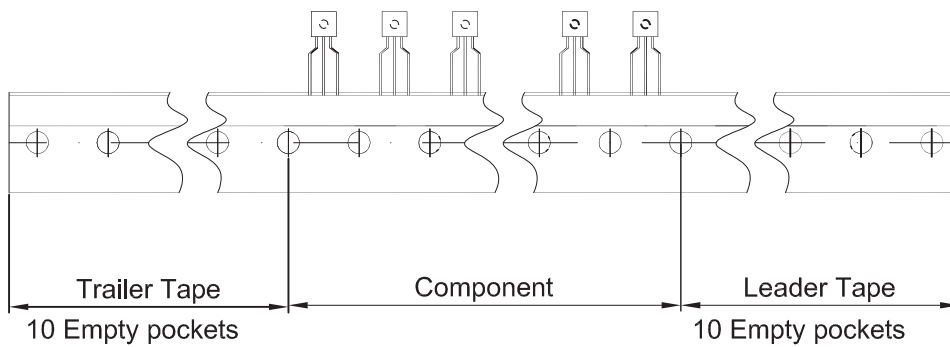
JSCJ reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter

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



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