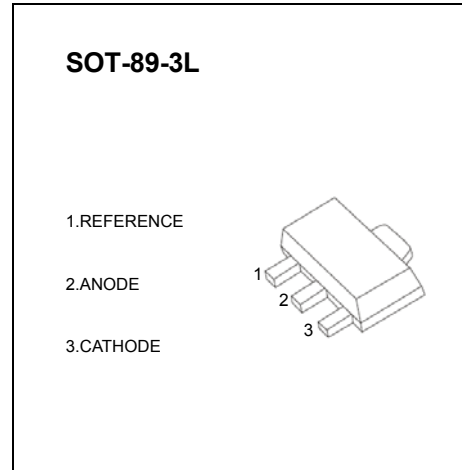


**CJ431** Adjustable Accurate Reference Source

**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



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

Parameter	Symbol	Value	Unit
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	$P_D$	500	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	°C/W
Operating Ambient Temperature Range	$T_{opr}$	-25~+85	°C
Storage temperature Range	$T_{stg}$	-65~+150	°C
Operating Junction Temperature	$T_j$	150	°C

**ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$  unless otherwise specified)**

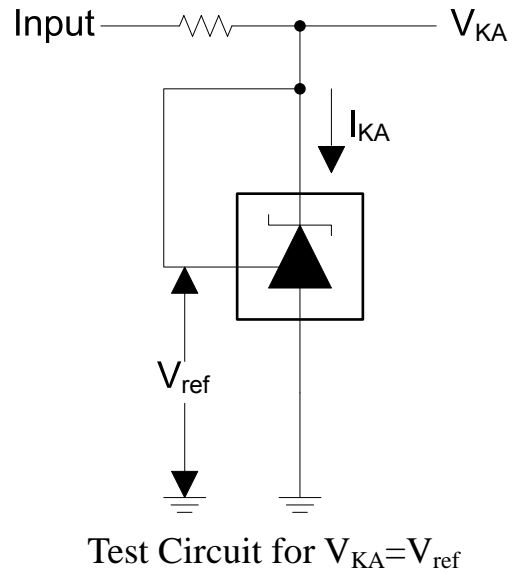
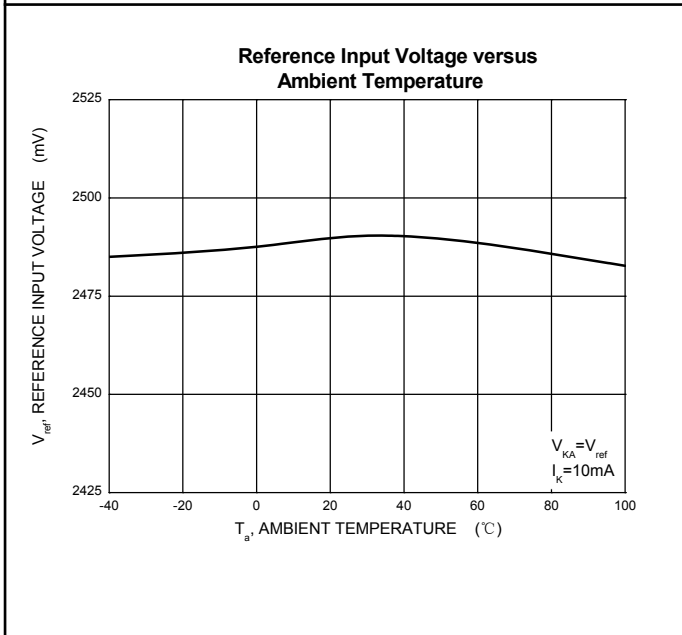
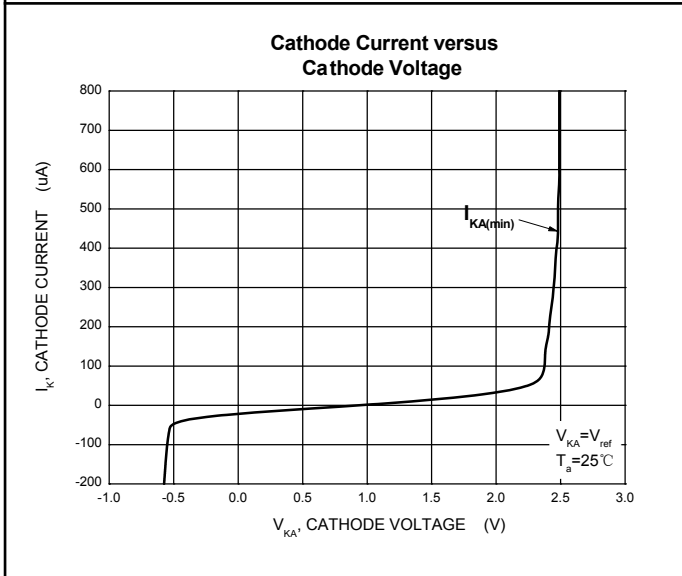
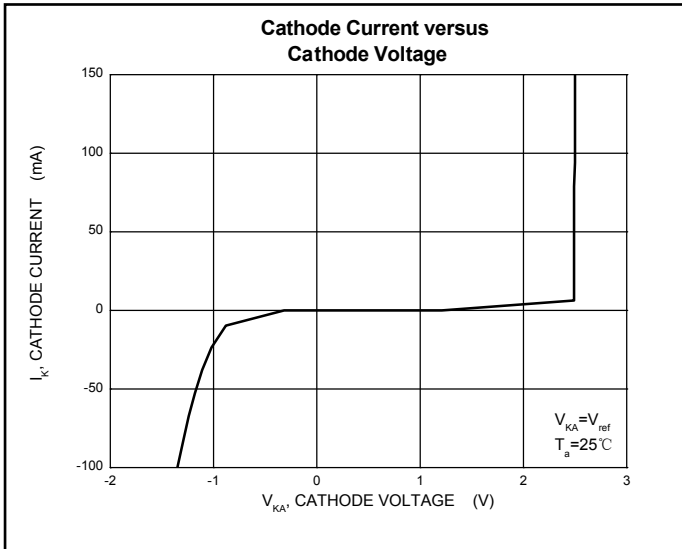
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reference input voltage	$V_{ref}$	$V_{KA}=V_{REF}, I_{KA}=10\text{mA}$	2.475	2.5	2.525	V
Deviation of reference Input voltage over temperature (note)	$\Delta V_{ref}/\Delta T$	$V_{KA}=V_{REF}, I_{KA}=10\text{mA}$ $T_{MIN}\leq T_a\leq T_{MAX}$		4.5	17	mV
Ratio of change in reference Input voltage to the change in cathode voltage	$\Delta V_{ref}/\Delta V_{KA}$	$I_{KA}=10\text{mA}$	$\Delta V_{KA}=10\text{V}\sim V_{REF}$	-1.0	-2.7	mV/V
			$\Delta V_{KA}=36\text{V}\sim 10\text{V}$	-0.5	-2.0	mV/V
Reference input current	$I_{ref}$	$I_{KA}=10\text{mA}, R_1=10\text{k}\Omega$ $R_2=\infty$		1.5	4	$\mu\text{A}$
Deviation of reference input current over full temperature range	$\Delta I_{ref}/\Delta T$	$I_{KA}=10\text{mA}, R_1=10\text{k}\Omega$ $R_2=\infty$ $T_A=-25\text{ to }85^\circ\text{C}$		0.4	1.2	$\mu\text{A}$
Minimum cathode current for regulation	$I_{KA(min)}$	$V_{KA}=V_{REF}$		0.45	1.0	mA
Off-state cathode current	$I_{KA(OFF)}$	$V_{KA}=36\text{V}, V_{REF}=0$		0.05	1.0	$\mu\text{A}$
Dynamic impedance	$Z_{KA}$	$V_{KA}=V_{REF}, I_{KA}=1\text{ to }100\text{mA}$ $f\leq 1.0\text{kHz}$		0.15	0.5	$\Omega$

Note:  $T_{MIN}=-55^\circ\text{C}$ ,  $T_{MAX}=+125^\circ\text{C}$

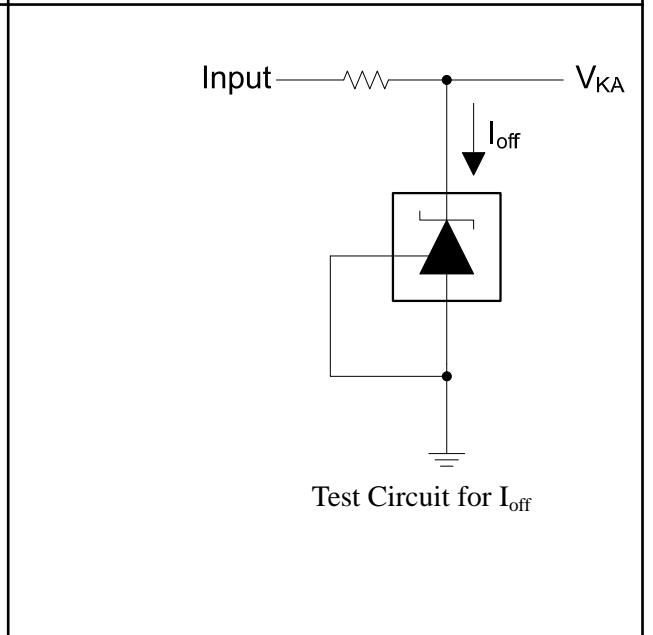
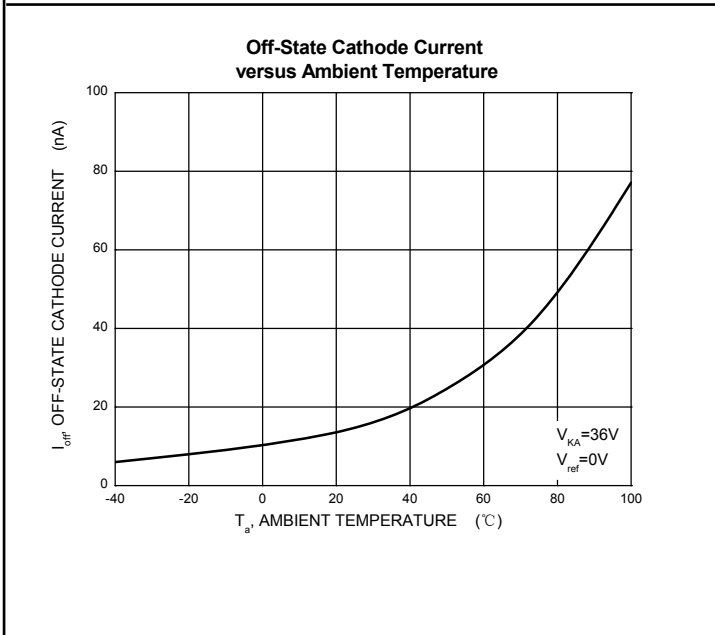
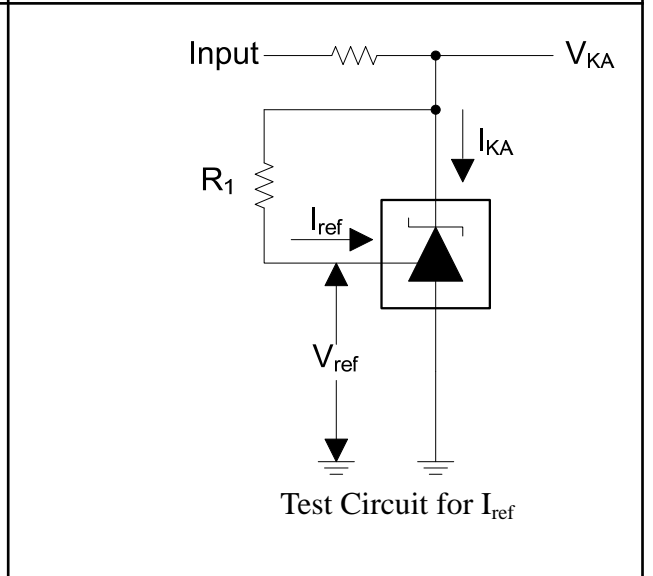
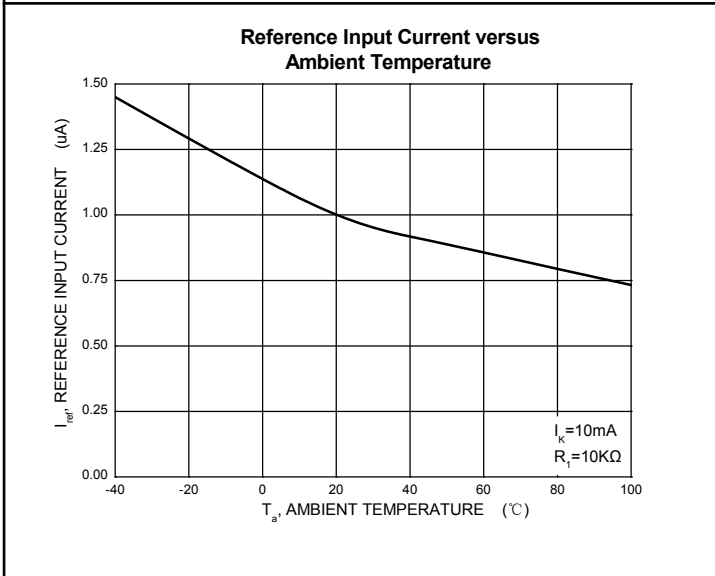
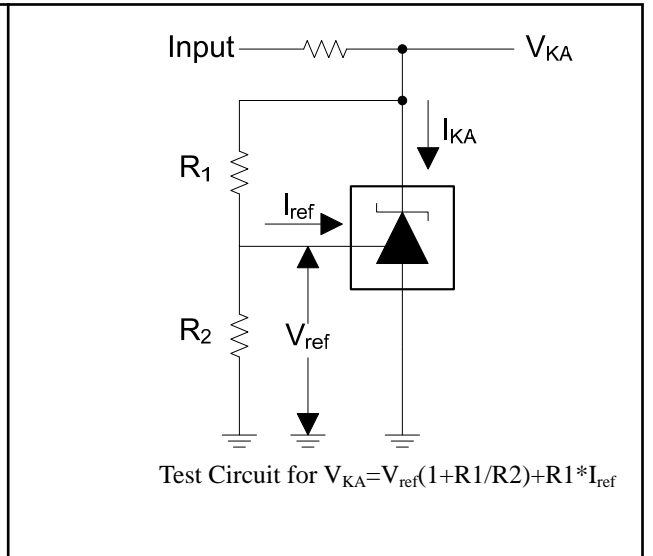
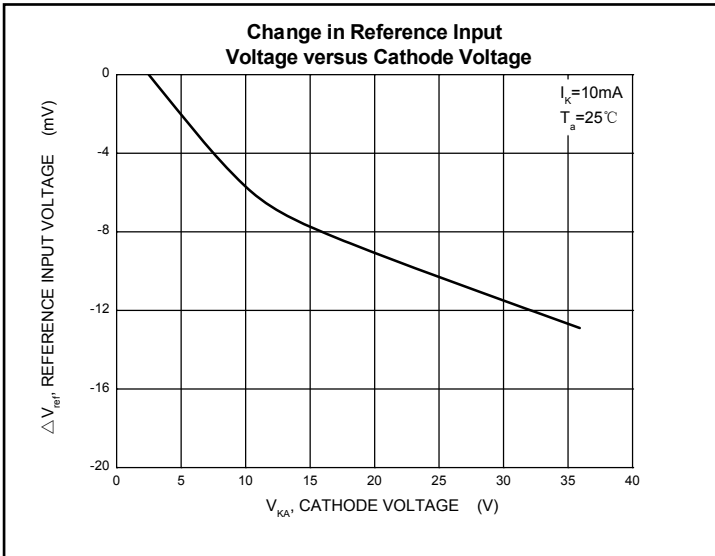
**CLASSIFICATION of  $V_{ref}$**

Rank	0.5%	1%
Range	2.487-2.513	2.475-2.525

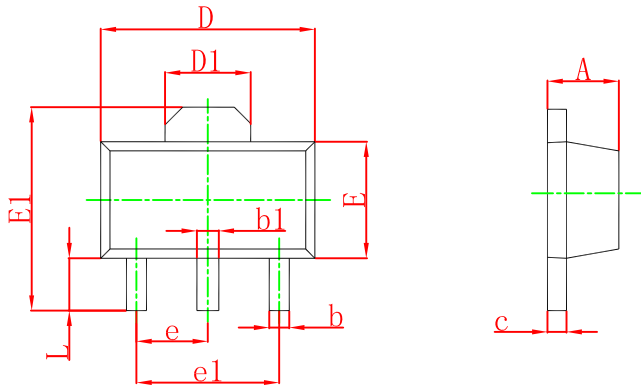
# Typical Characteristics



# Typical Characteristics

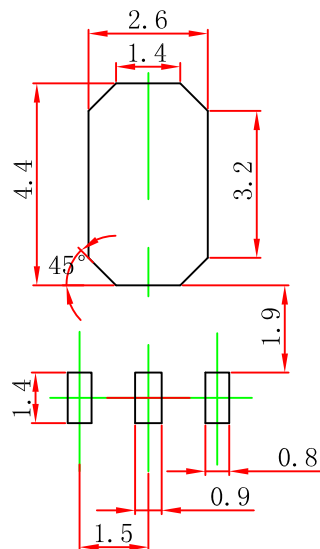


## SOT-89-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

## SOT-89-3L 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

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