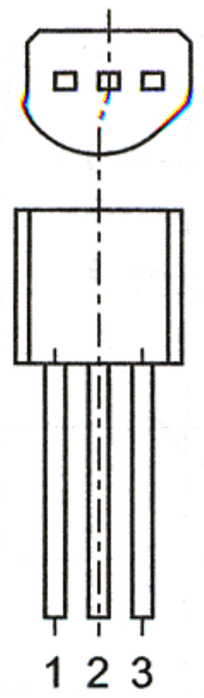
Programmable Precision References

CJ431 ADJUSTABLE ACCURATE REFERENCE SOURCE



TO-92

1.REFERENCE

2.ANODE

3.CATHODE

1 2 3

FEATURES

The output voltage can be adjusted to 36V

Low dynamic output impedance, its typical value is 0.2 Ω

Trapping current capability is 1 to 100mA

The typical value of the equivalent temperature factor in the whole temperature scope is 50 ppm/℃

The effective temperature compensation in the working range of full temperature

Low output noise volatge

Fast on-state response

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
Operating temperature	T_{opr}	0-70	℃
Storage temperature range	T_{stg}	-65-+150℃	℃

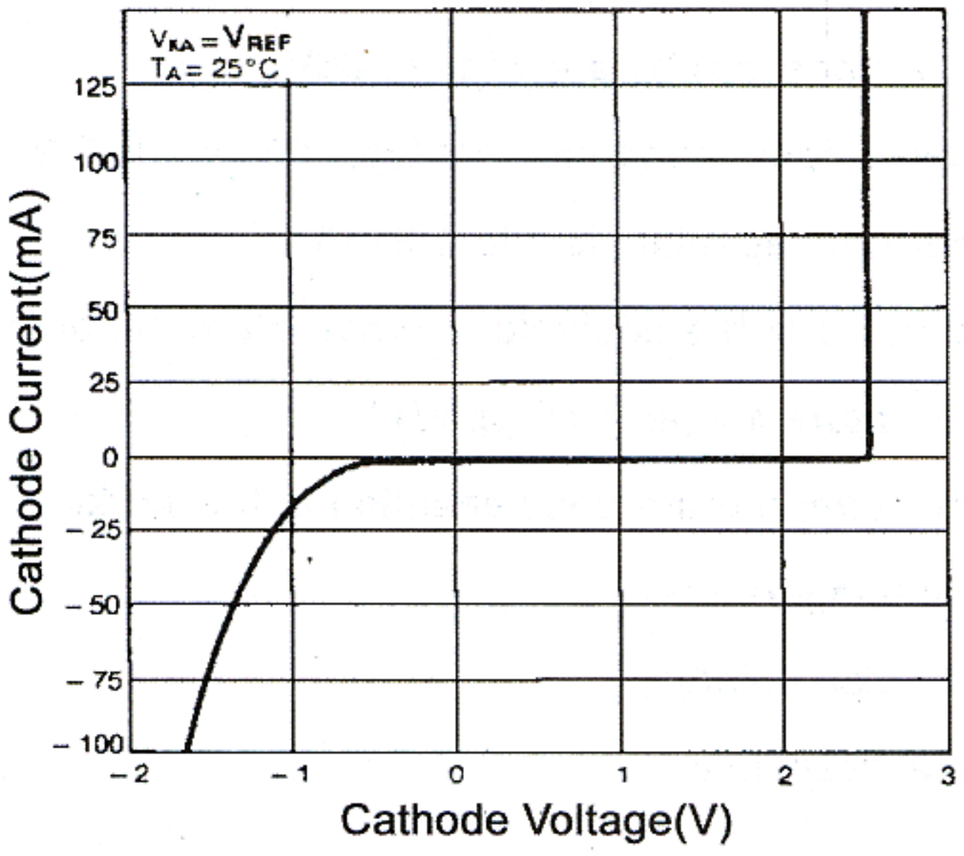
ELECTRICAL CHARACTERISTICS

(Tamb=25℃ unless otherwise specified)

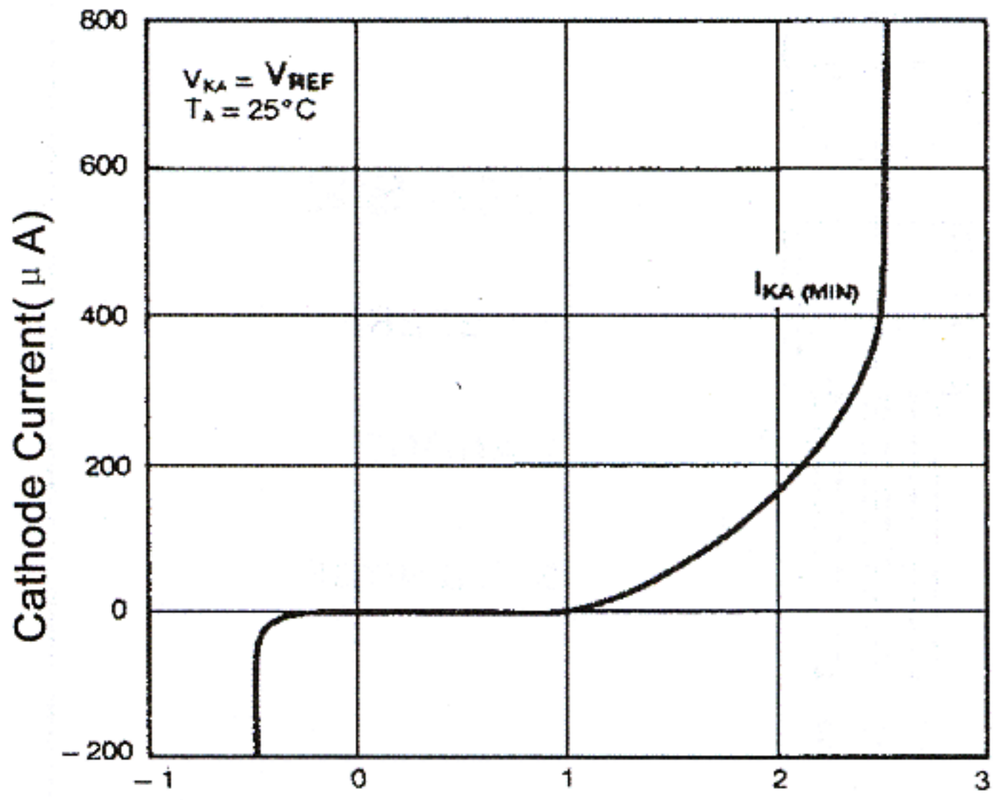
Parameter	Symbol	Test conditions		MIN	TYP	MAX	UNIT
Reference Input voltage	V_{ref}	$V_{KA}=V_{ref}$, I_{KA}=10mA		2.440	2.495	2.550	V
Deviation fo reference input voltage Over temperature(note)	$\triangle V_{ref}/\triangle T$	$V_{KA}=V_{ref}$, I_{KA}=10mA Tmin ⩽ Ta ⩽ Tmax			4.5	17	mV
Ratio of change in reference input Voltage to the change in cathode Voltage	$\triangle V_{ref}/\triangle V_{KA}$	I_{KA}=10mA	$\triangle V_{KA}$=10V~V_{ref}		-1.0	-2.7	mV/V
			$\triangle V_{KA}$=36V~10V		-0.5	-2.0	
Reference Input current	I_{ref}	I_{KA}=10mA, R_1=10KΩ, R_2=∞			1.5	4	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)	$V_{KA}=V_{ref}$			0.45	1.0	mA
Off-state cathode current	I_{KA}(OFF)	V_{KA}=36V, V_{ref}=0			0.05	1.0	μA
Dynamic impedance	Z_{KA}	$V_{KA}=V_{ref}$, 1_{KA}=1 to 100mA f ⩽ 1.0KHZ			0.15	0.5	Ω

Note:T_{MIN}=0℃, T_{MAX}=+70℃

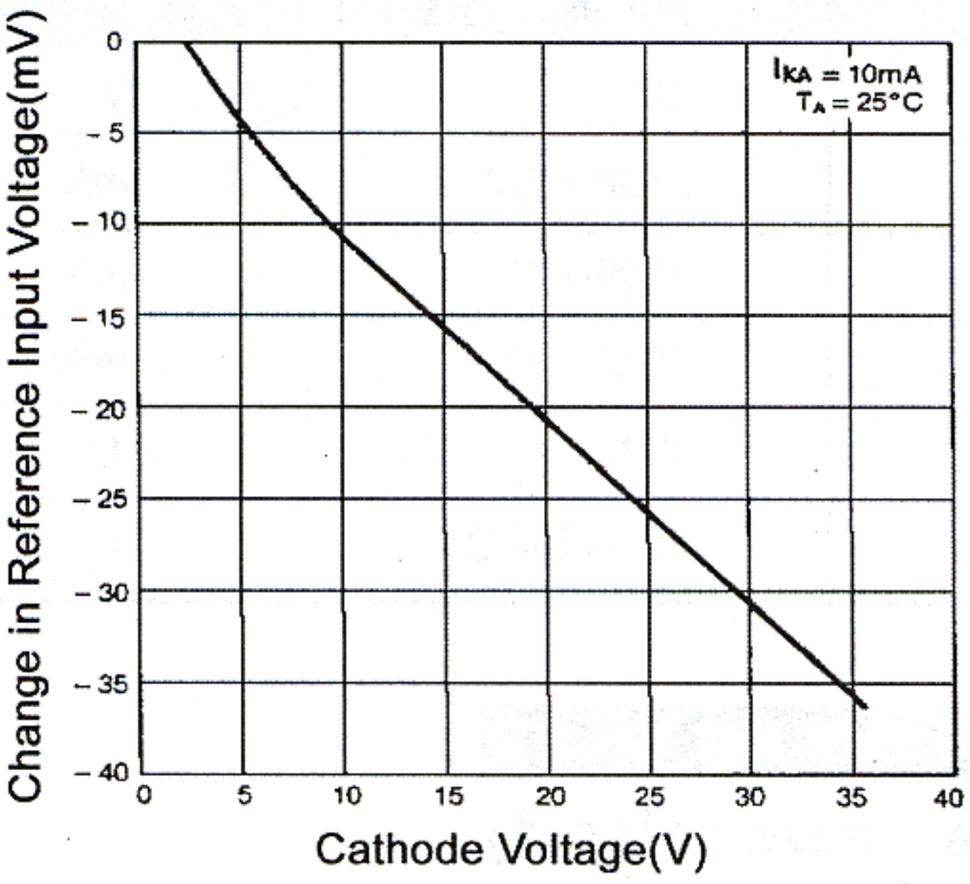
Typical Characteristics



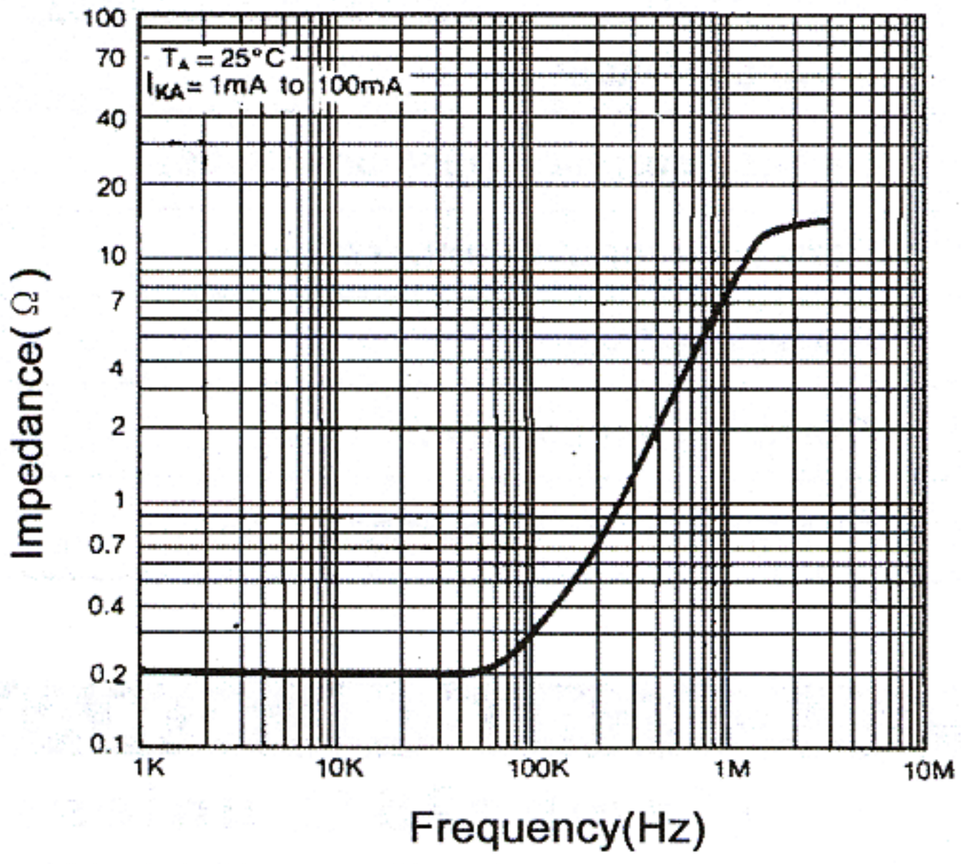
Cathode Current vs. Cathode Voltage



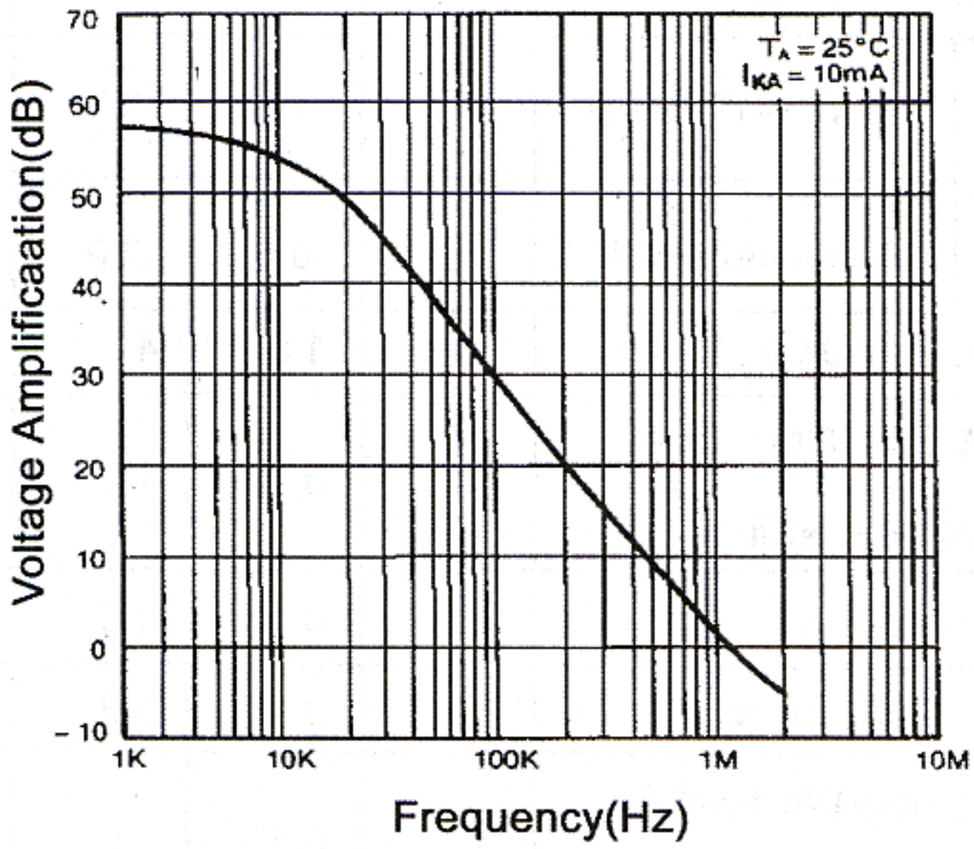
Cathode Current vs. Cathode Voltage



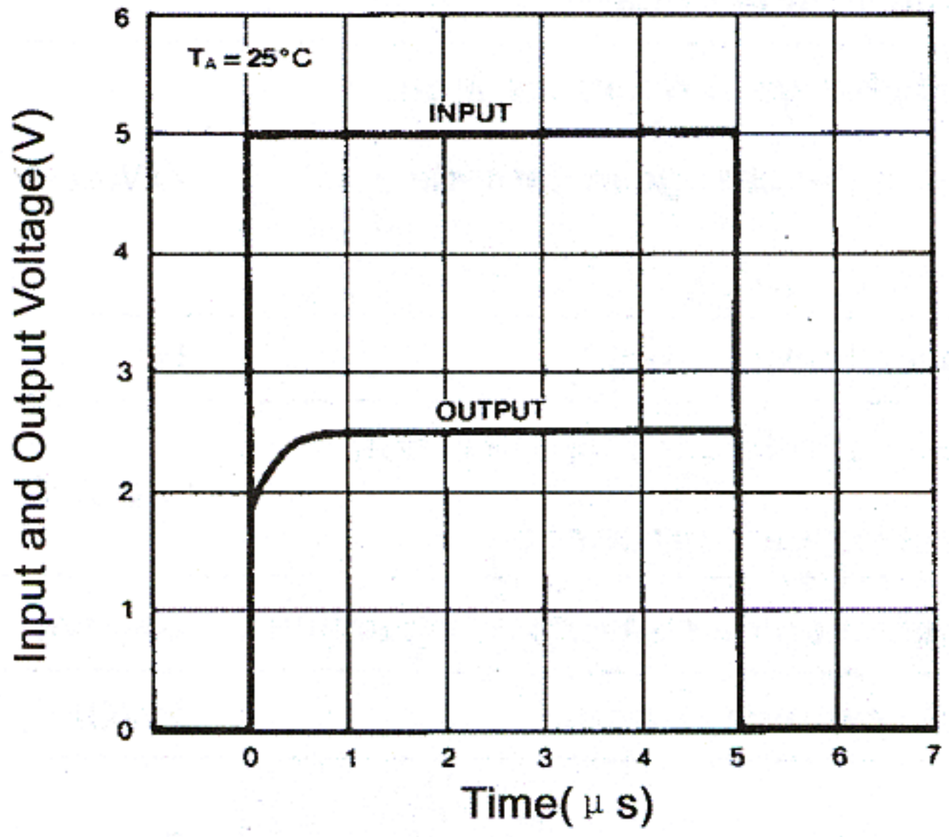
Change in Reference Input Voltage vs. Cathode Voltage



Dynamic Impedance Frequency



Small Signal Voltage Amplification vs. Frequency



Pulse Response