

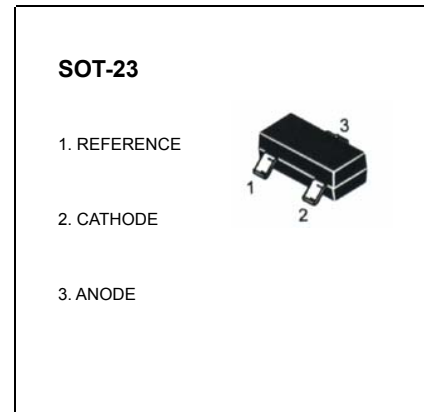


**SOT-23 Encapsulate Adjustable Reference Source**

**431** 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	UNITS
Cathode Voltage	$V_{KA}$	37	V
Cathode Current Range (Continuous)	$I_{KA}$	-100-+150mA	mA
Reference Input Current Range	$I_{ref}$	0.05-+10	mA
Power Dissipation	$P_D$	300	mW
Operating temperature	$T_{opr}$	0-70	°C
Storage temperature Range	$T_{stg}$	-65-+150°C	°C

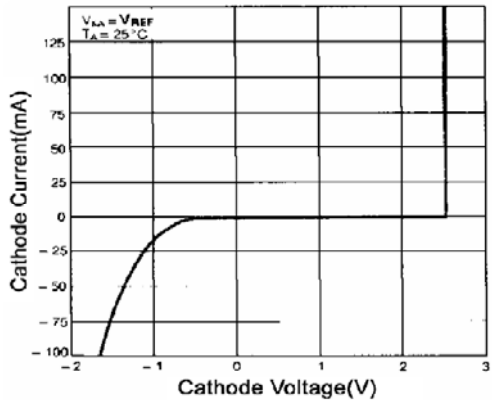
**ELECTRICAL CHAR ACTERISTICS ( $T_{amb}=25^{\circ}C$  unless otherwise specified)**

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reference Input Voltage	$V_{ref}$	$V_{KA}=V_{REF} =10mA$	2.446	2.495	2.545	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	m V/V
			$\Delta V_{KA} =36V\sim 10V$	-0.5	-2.0	m V/V
Reference Input Current	$I_{ref}$	$I_{KA}= 10mA, R_1=10K\Omega$ $R_2=\infty$		1.5	4	$\mu A$
Deviation Of Reference Input Current Over Full Temperature Range	$\Delta I_{ref}/\Delta T$	$I_{KA}=10mA, R_1=10K\Omega$ $R_2=\infty$ $T_A=full\ Temperature$		0.4	1.2	$\mu A$
Minimum cathode current for regulation	$I_{KA(min)}$	$V_{KA}=V_{REF}$		0.45	1.0	mA
Off-state cathode Current	$I_{KA(OFF)}$	$V_{KA}=36V, V_{REF}=0$		0.05	1.0	$\mu A$
Dynamic Impedance	$Z_{KA}$	$V_{KA}=V_{REF}, I_{KA}=1\ to\ 100mA$ $f\leq 1.0KHz$		0.15	0.5	$\Omega$

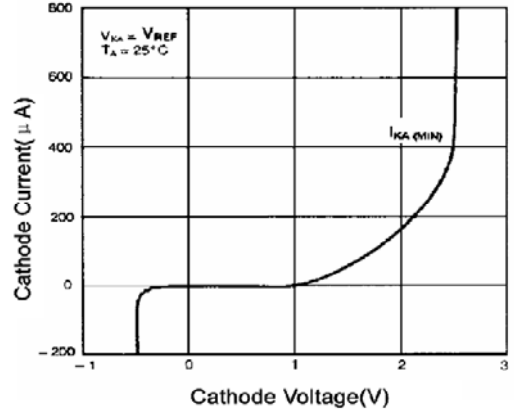
Note:  $T_{MIN}=0^{\circ}C$  ,  $T_{MAX}=+70^{\circ}C$

**CLASSIFICATION OF V**

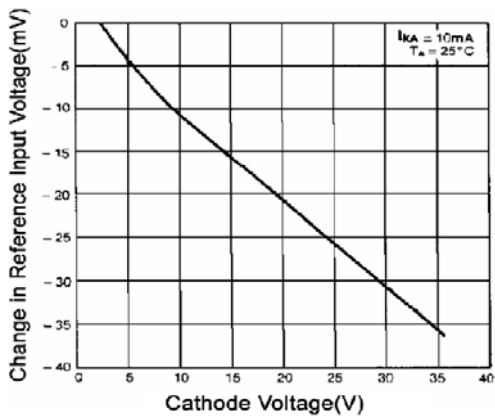
Rank	0.5%	1%	2%
Range	2.483 - 2.507 ( V )	2.470 - 2.520 ( V )	2.446 - 2.545 ( V )



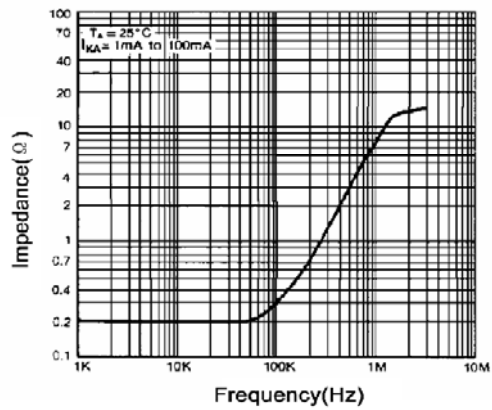
Cathode Current vs. Cathode Voltage



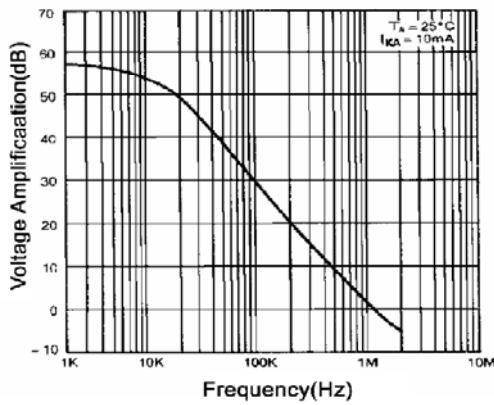
Cathode Current vs. Cathode Voltage



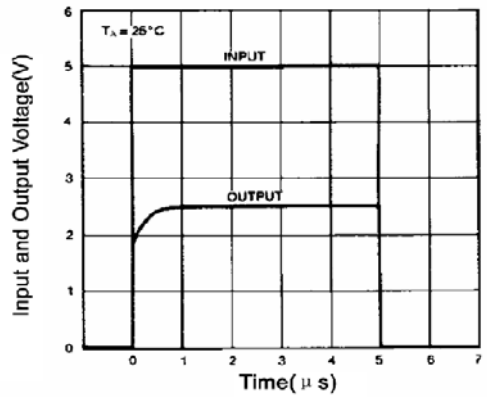
Change in Reference Input Voltage vs. Cathode Voltage



Dynamic Impedance Frequency



Small Signal Voltage Amplification vs. Frequency



Pulse Response