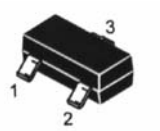
CHUANGYUAN TECHNOLOGES (HK) LIMITED

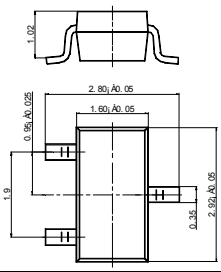
SOT-23-3L Encapsulate Adjustable Reference Source

TL431 Adjustable Accurate Reference Source

SOT-23-3L

1. REFERENCE
2. CATHODE
3. ANODE





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/℃
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-+150	mA
Reference Input Current Range	Iref	0.05-+10	mA
Power Dissipation	P_D	770	mW
Operating temperature	Topr	0-70	℃
Storage temperature Range	Tstg	-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		2.450	2.5	2.550	V
Deviation of reference input Voltage Over temperature (note)	$\Delta V_{ref}/\Delta T$	$V_{KA}=V_{REF}$, I_{KA}=10mA Tmin≤Ta≤Tmax			4.5	17	mV
Ratio Of Change in Reference Input Voltage to the change in Cathode Voltage	$\Delta V_{ref}/\Delta V_{KA}$	I_{KA}=10mA	ΔV_{KA} =10V~V_{REF}		-1.0	-2.7	m V/V
			ΔV_{KA} =36V~10V		-0.5	-2.0	m V/V
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	$\Delta I_{ref}/\Delta T$	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}	$V_{KA}=V_{REF}$, I_{KA}=1 to 100mA f≤1.0KHz			0.15	0.5	Ω

Note:T_{MIN}=0℃ ,T_{MAX}=+70℃

CLASSIFICATION OF V_{ref}

Rank	TL431	TL431 A	TL431 B
Range	2.487-2.512	2.475-2.525	2.450-2.550