



概述

HL431 为三端可调节精密基准源。通过两个外接电阻，输出电压可在 V_{ref} (2.5V) 到 36V 连续调节。该电路输出阻抗小(0.2 Ω)。开启特性好，在许多应用场合，它能较好地替换齐纳二极管。

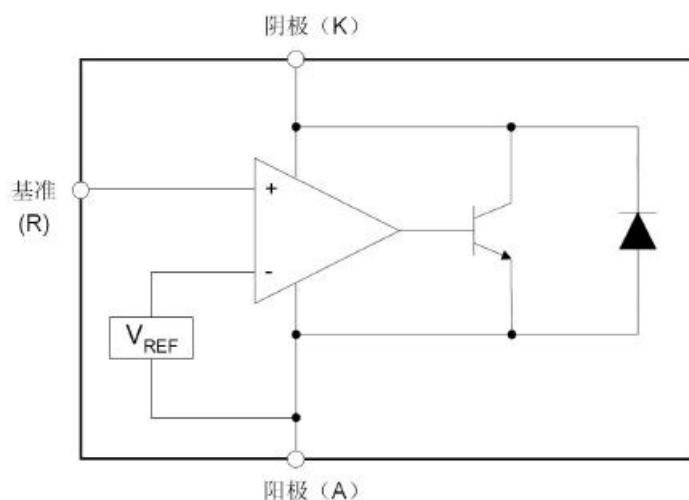
特点

- 温度系数 50ppm/ $^{\circ}\text{C}$
- 在工作温度范围内有温度补偿
- 输出电压可设定
- 响应速度快

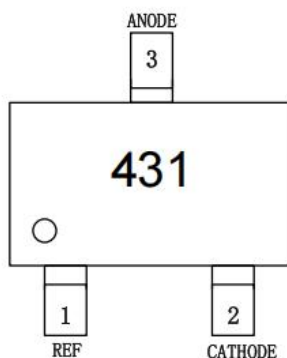
应用

- 线性调整器
- 可调节电源和开关电源

内部框图



引脚描述



No	Pin Name
1	REF
2	CATHODE
3	ANODE



订购信息

Device	Device Marking	Device Package	Quantity
HL431	431	SOT23	3000

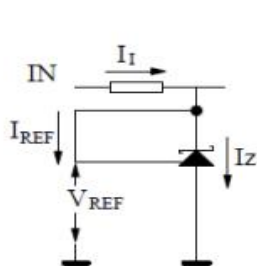
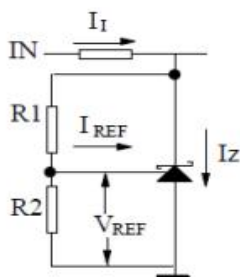
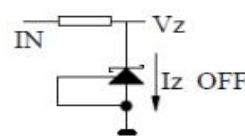
绝对最大电参额定值

Parameter	Symbol	Maximum Rating	Unit
阴极电压	V _{ka}	40	V
阴极连续电流	I _{ka}	-10 ~ 150	mA
基准输入电流	I _{REF}	10	mA
工作温度范围	T _{opr}	-40 ~ 125	°C
存储温度范围	T _{STG}	-40 ~ 150	°C
功耗	P _D	230	mW

电参特性 (T_A=25°C, V_{CC}=5V)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
基准电压	V _{REF}	V _Z =V _{REF} , I _k =10mA	2.49	2.5	2.51	V
工作温度范围内, 基准输入电压漂移	V _{REF(dev)}	V _Z =V _{REF} , I _k =10mA	-	5	12	mV
基准电压变化与阴极电压变化比率	$\Delta V_{REF}/\Delta V_Z$	I _Z =10mA, V _Z =V _{REF} -10V	-	-1	-2.7	mV/V
		I _Z =10mA, V _Z =10~36V	-	-0.5	-2	
基准输入电流	I _{REF}	R1=10K Ω , R2= ∞ , I _k =10mA	-	2	4	μ A
工作温度范围内, 基准输入电流漂移	I _{REF(dev)}	R1=10K Ω , R2= ∞ , I _k =10mA	-	0.4	1.2	μ A
最小阴极电流	I _{Z(min)}	V _Z =V _{REF}	-	0.2	1	mA
漏电流	I _{Z(off)}	V _Z =36V, V _{REF} =0V	-	0.5	0.7	μ A
输出动态阻抗	Z _{KA}	V _Z =V _{REF} , I _k =1 to 100mA, f $\leq$ 1KHZ	-	0.2	0.5	Ω

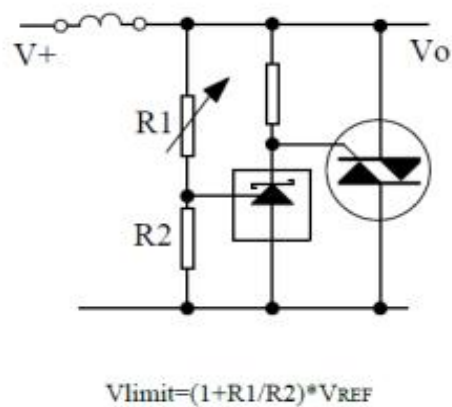
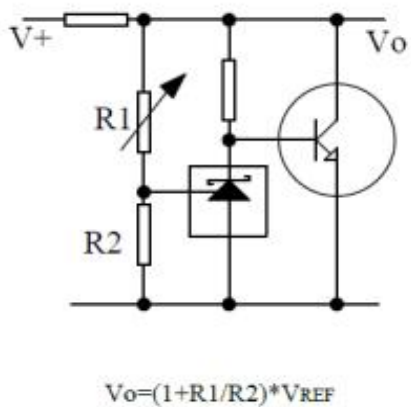
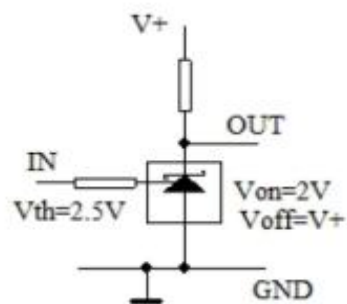
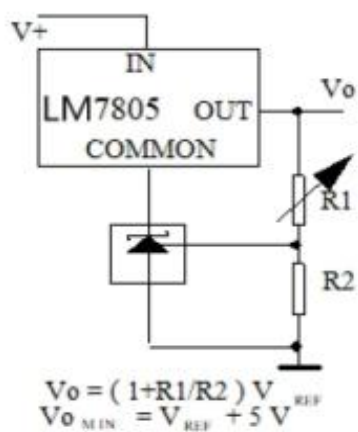
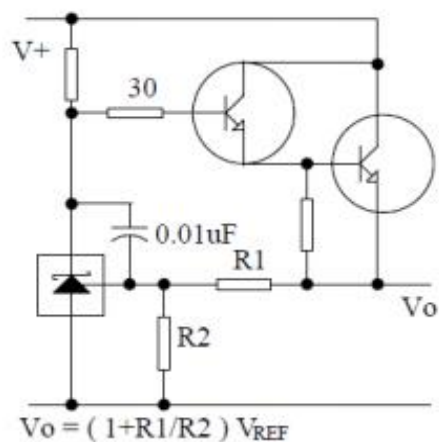
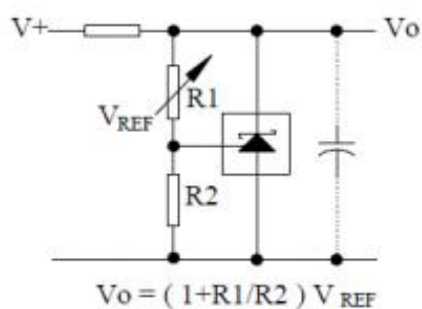
测试图

测试图 1 V_Z=V_{REF}测试图 2 V_Z>V_{REF}

测试图 3 漏电流测试

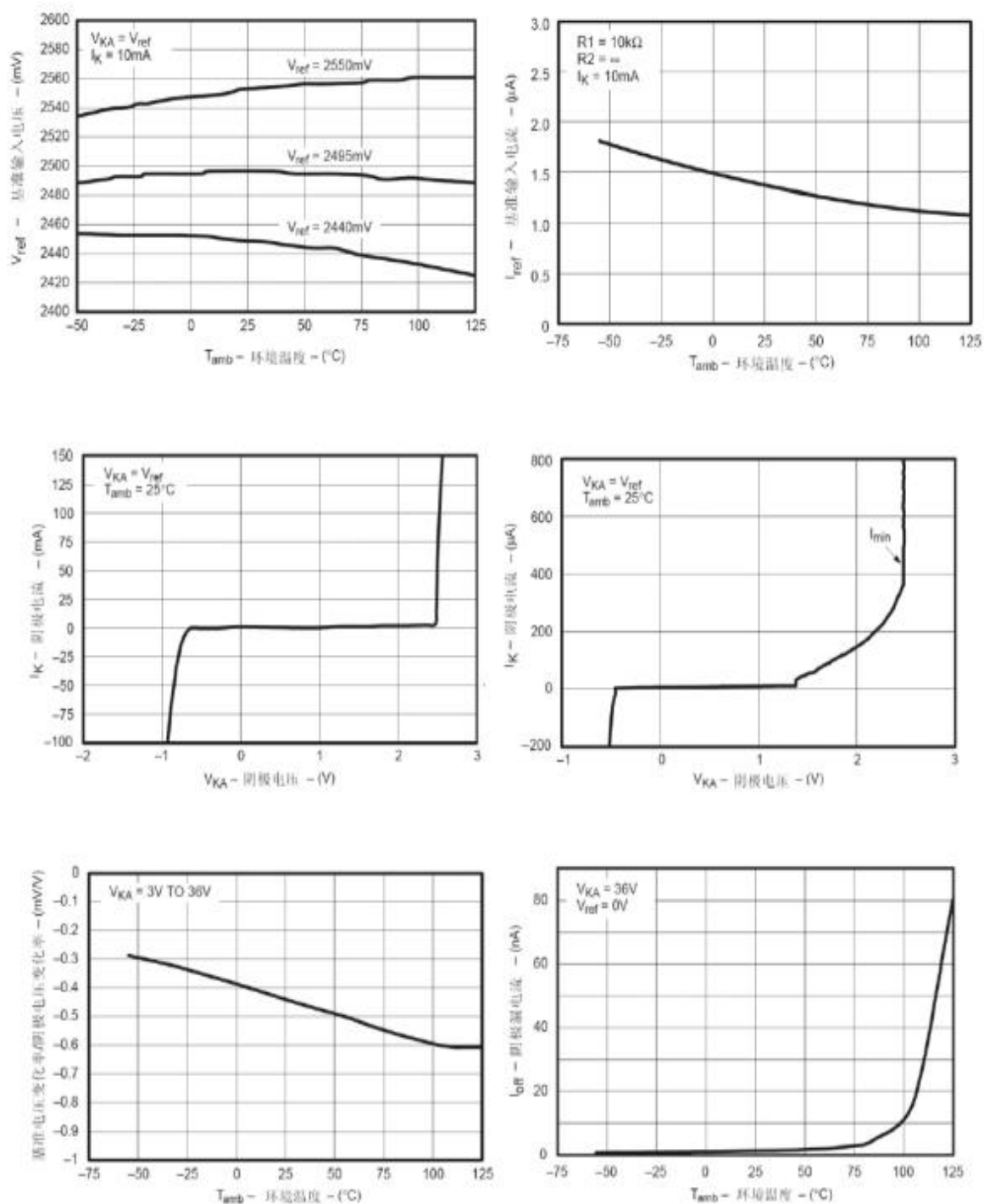


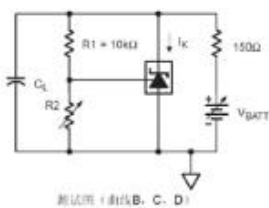
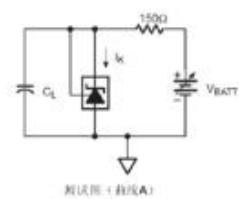
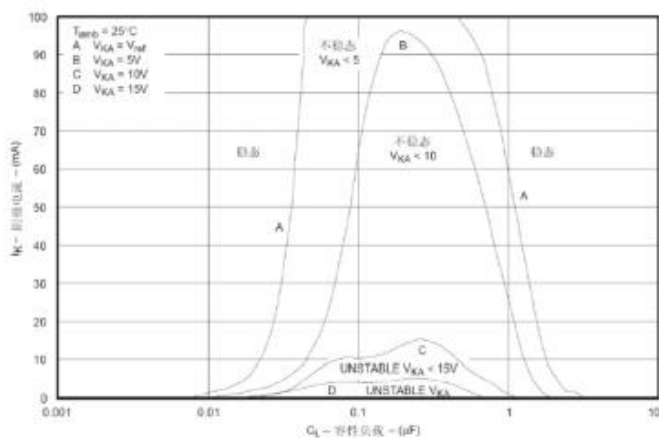
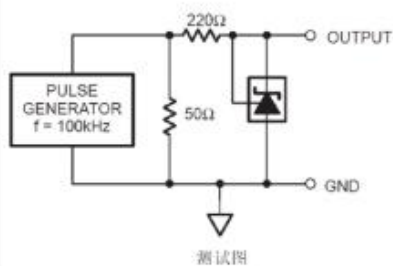
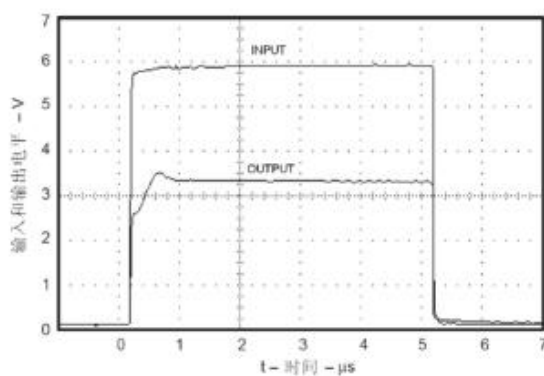
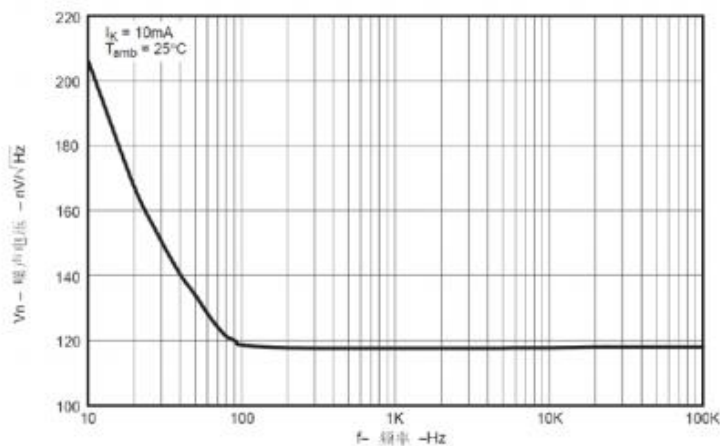
应用图





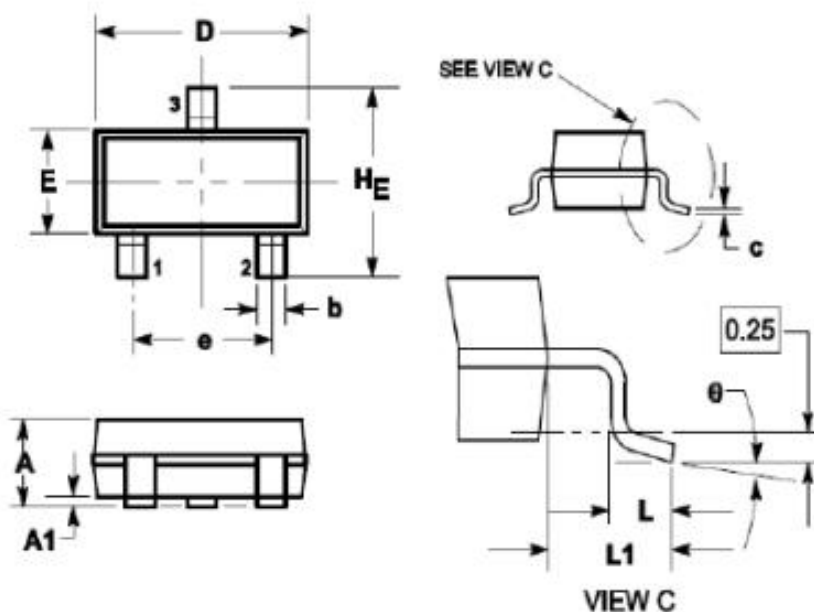
曲线特性







Package Dimensions SOT23



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
H _E	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°



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