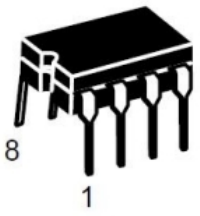
概述

TL082 是一款高速 J-FET 单运算放大器，由高压 J-FET 和双极晶体管构成。具有高转换速率、低输入偏置电流和失调电
流以及低失调电压温度系数。
TL082 提供了 DIP8 和 SOP8 封装形式。



P SUFFIX

D SUFFIX

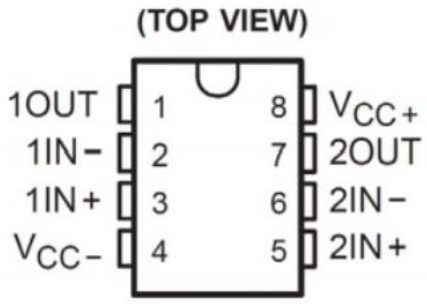
特点

- 较低功耗
- 宽的共模和差模输入电压范围
- 低的输入偏置电流和失调电流
- 输出短路电流保护
- 高输入阻抗
- 高转换速率
- 高增益带宽积，高达4MHz

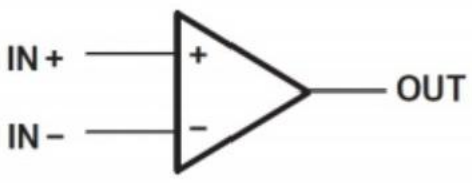
订购信息

产品型号	封装	丝印	包装	包装数量
TL082CN	DIP-8	TL082CN	管装	2000只/盒
TL082CDTR	SOP-8	TL082C	编带	2500只/盘

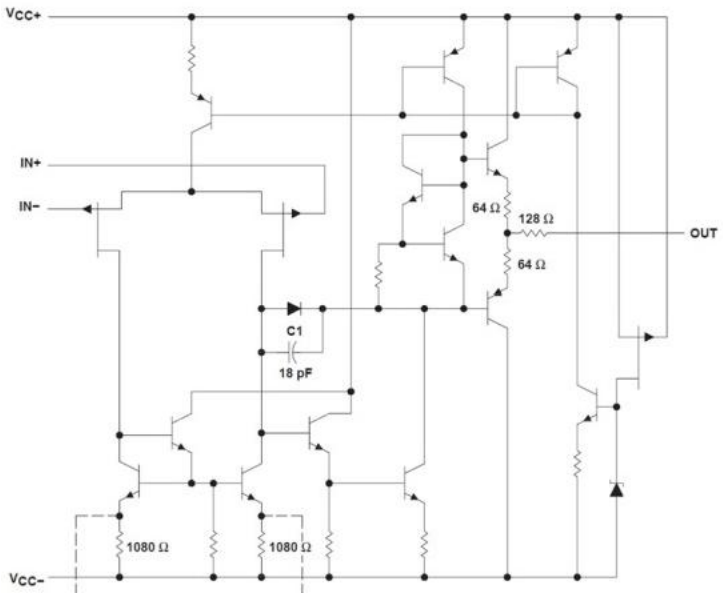
引脚图



符号



内部框图



极限参数

符号	描述	极限值	单位
Vcc	电源电压	±18	V
Vi	输入电压	±14	V
Vid	差模输入电	±28	V
Toper	工作温度	0-70	℃
Tstg	储藏温度	-65-150	℃

电气参数特性

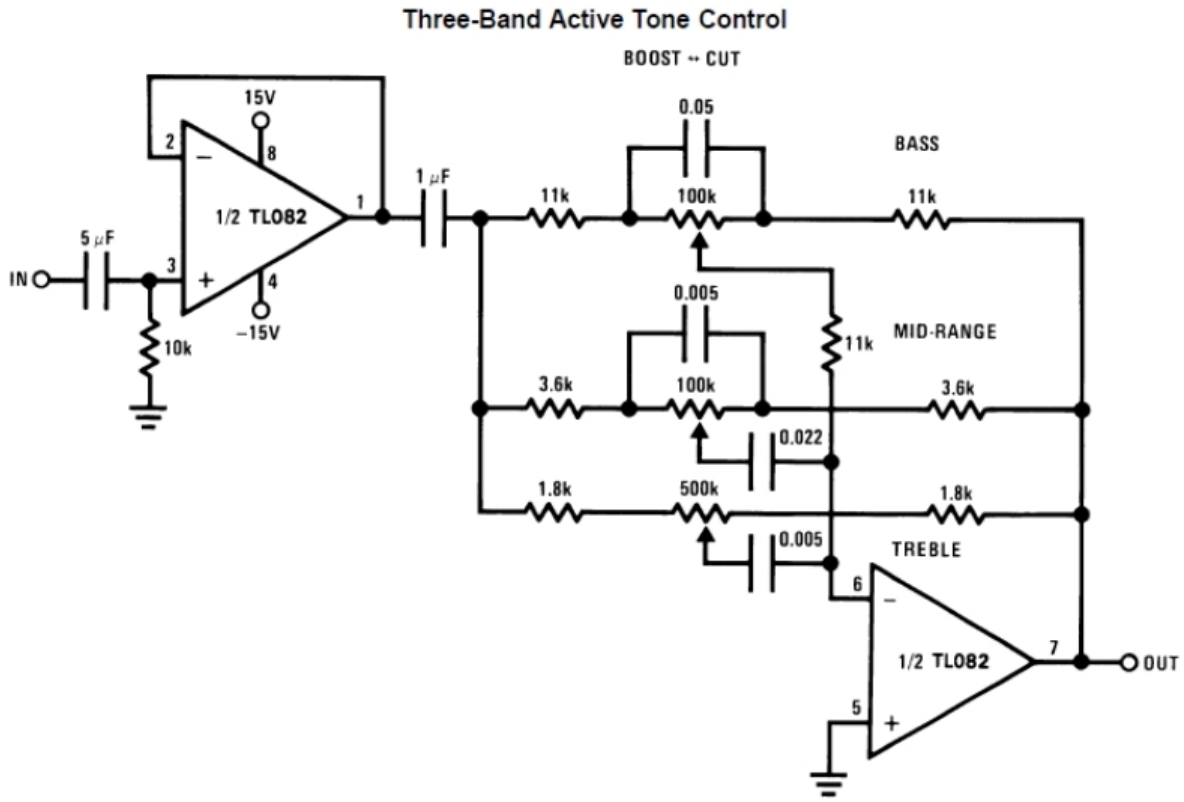
(Vcc=±15,Tamp=25℃,特殊情况另外说明

符号	参数名称	测试条件	测试值			单位
			Min	Typ	Max	
Vio	失调电压	Vo=0V		3	6	mV
Iio	输入失调电流	Vo=0V			1.5	nA
Iib	输出偏置电流	Vo=0V			2.5	nA
Vicr	输入共模电压		-12	±11	15	V
Vom	输出电压峰值	RL =10 k2 RL ≥2 kΩ	±12 ±10	±13.5 ±12.5		V
AVD	大信号电压增益	RL ≥2 kΩ,VO =±10 V	80	95		dB
B1	增益带宽积			3		MHz

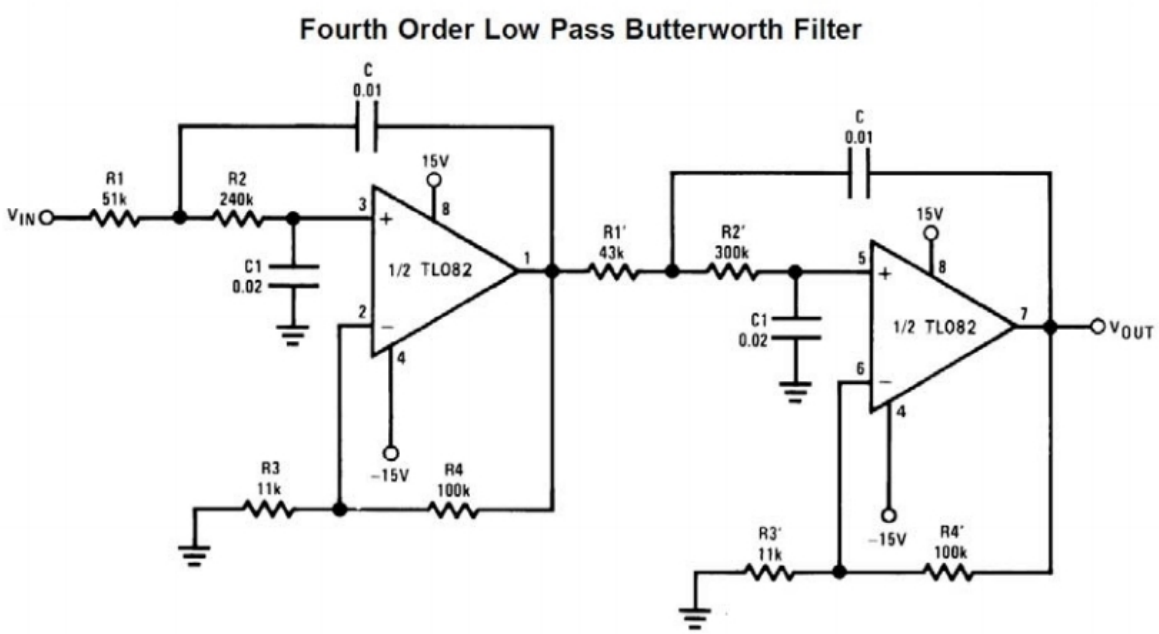
CMRR	共模抑制比		70	85		dB
kSVR	电源抑制比	VCC=±15 V to ±9 V Vo=0V	70	86		dB
ICC	静态电流-每通道			1.4	2.8	mA
SR	转换速率	VI=10 V,	8	13		V/us
tr	上升时间			0.05		uS

典型应用(其中一路运算放大器)

1）三段音调控制 Three-Band Active Tone Control

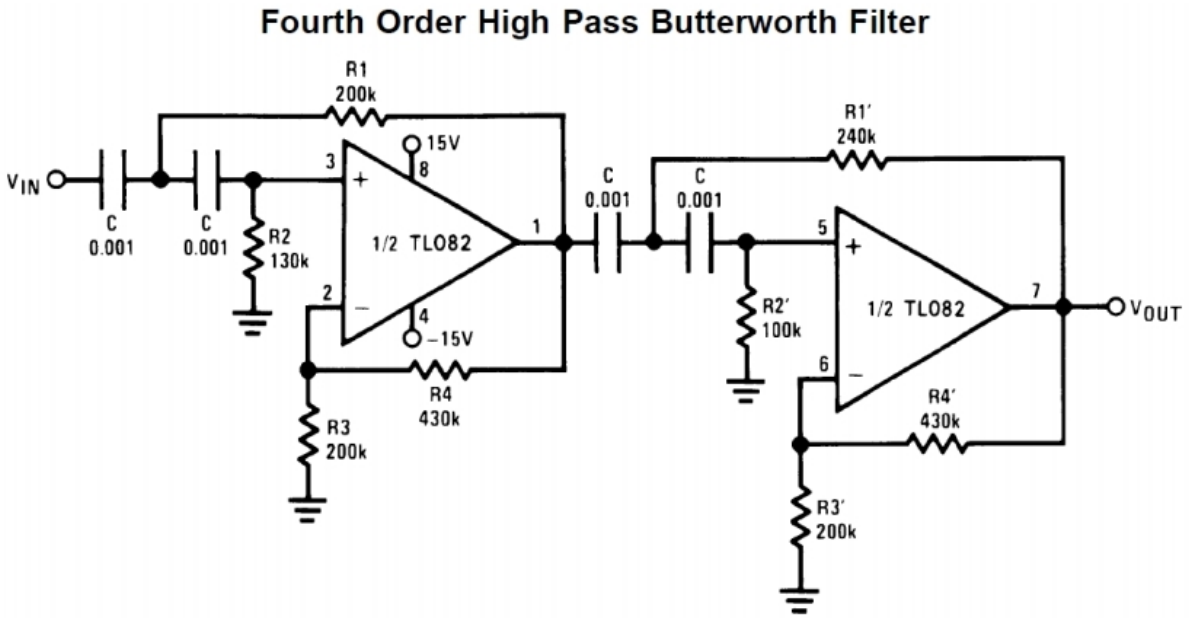


2）四阶低通滤波



- Corner frequency (f_c) = $\sqrt{\frac{1}{R1R2CC1}} \cdot \frac{1}{2\pi} = \sqrt{\frac{1}{R1'R2'CC1}} \cdot \frac{1}{2\pi}$
- Passband gain (H_O) = (1 + R4/R3) (1 + R4'/R3')
- First stage Q = 1.31
- Second stage Q = 0.541
- Circuit shown uses nearest 5% tolerance resistor values for a filter with a corner frequency of 100 Hz and a passband gain of 100
- Offset nulling necessary for accurate DC performance

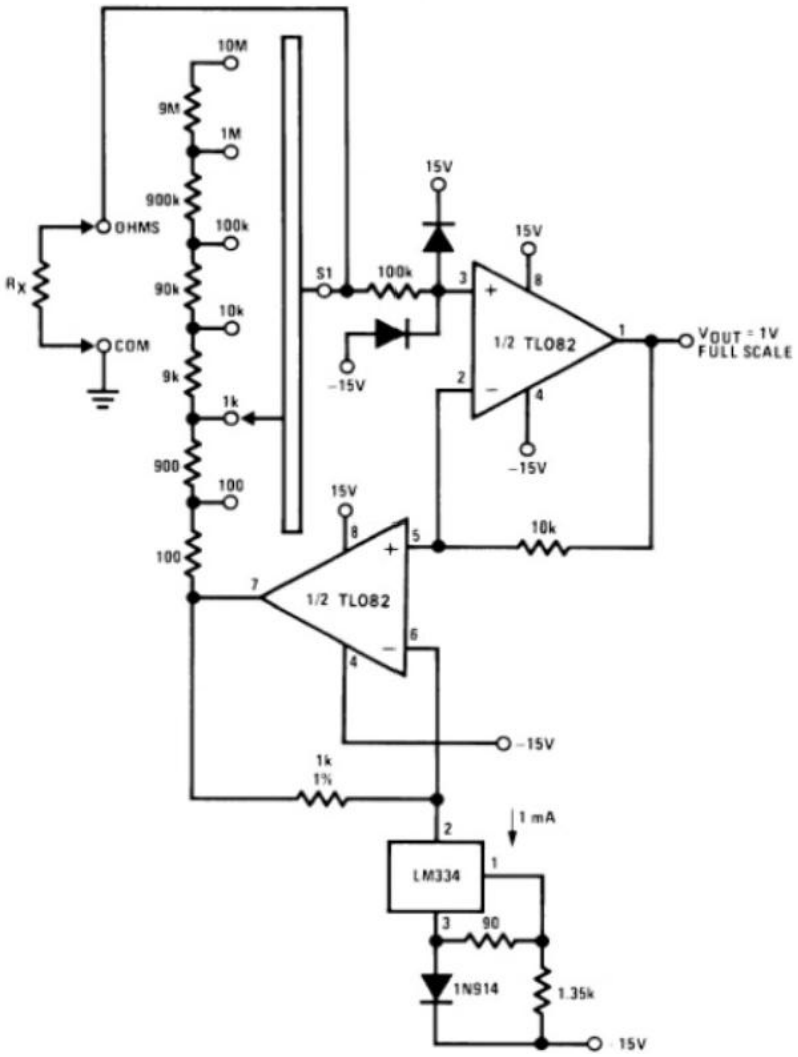
3）四阶高通滤波



- Corner frequency (f_c) = $\sqrt{\frac{1}{R1R2C^2}} \cdot \frac{1}{2\pi} = \sqrt{\frac{1}{R1'R2'C^2}} \cdot \frac{1}{2\pi}$
- Passband gain (H_O) = (1 + R4/R3) (1 + R4'/R3')
- First stage Q = 1.31
- Second stage Q = 0.541
- Circuit shown uses closest 5% tolerance resistor values for a filter with a corner frequency of 1 kHz and a passband gain of 10

4) 电阻电压转换

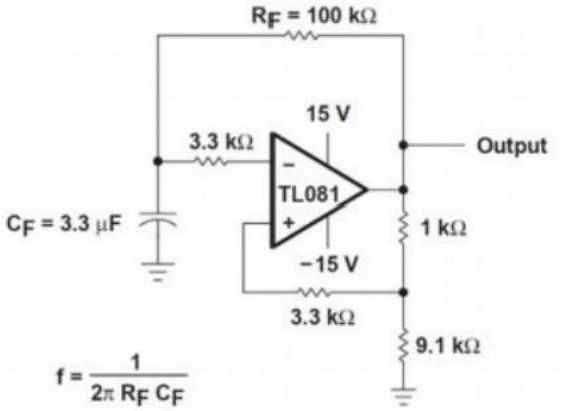
Ohms to Volts Converter

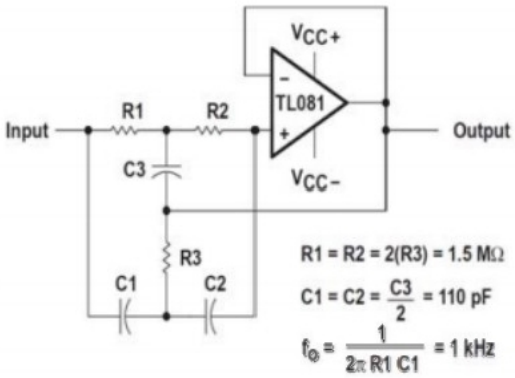


$$V_O = \frac{1V}{R_{LADDER}} \times R_X$$

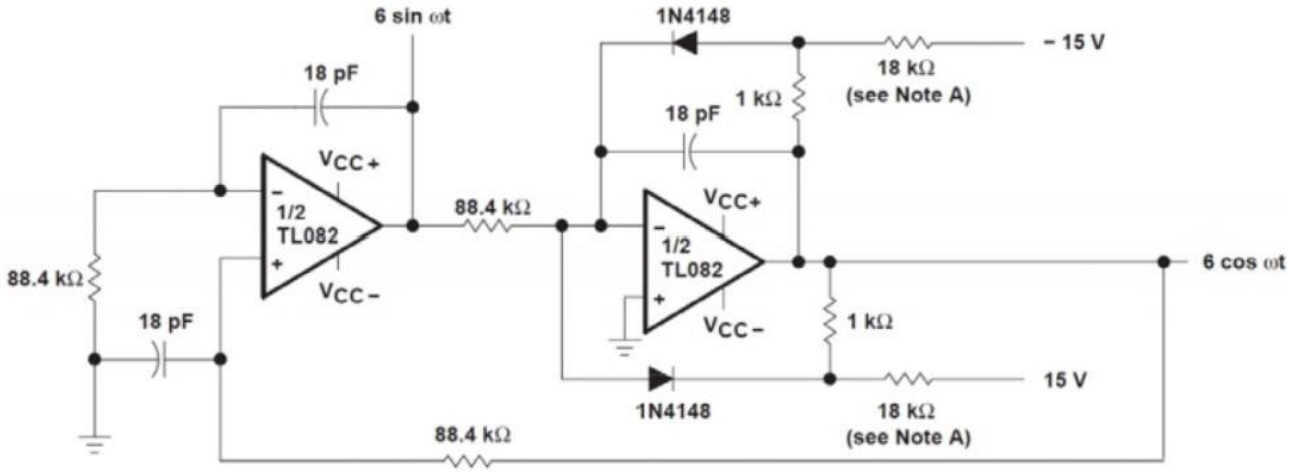
Where RLADDER is **the resistance from switch S1 pole to pin 7 of the TL082CP.**

5）典型线路



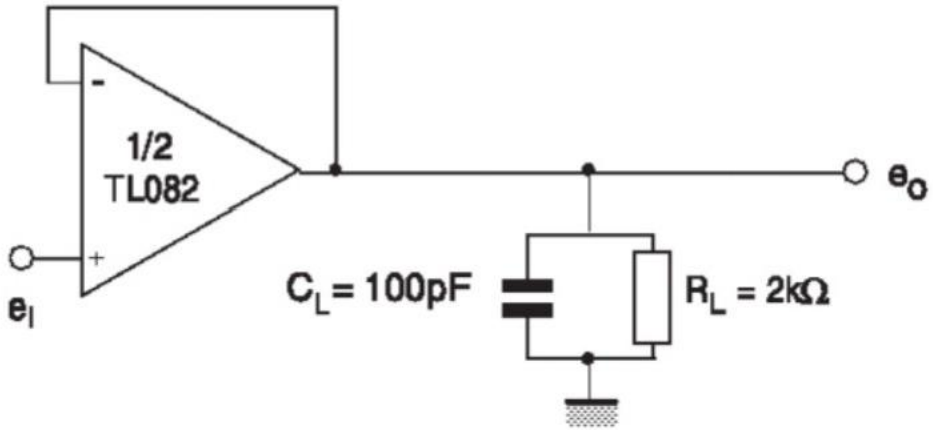


6) 100 kHz的正交振荡器100−KHz Quadrature Oscillator

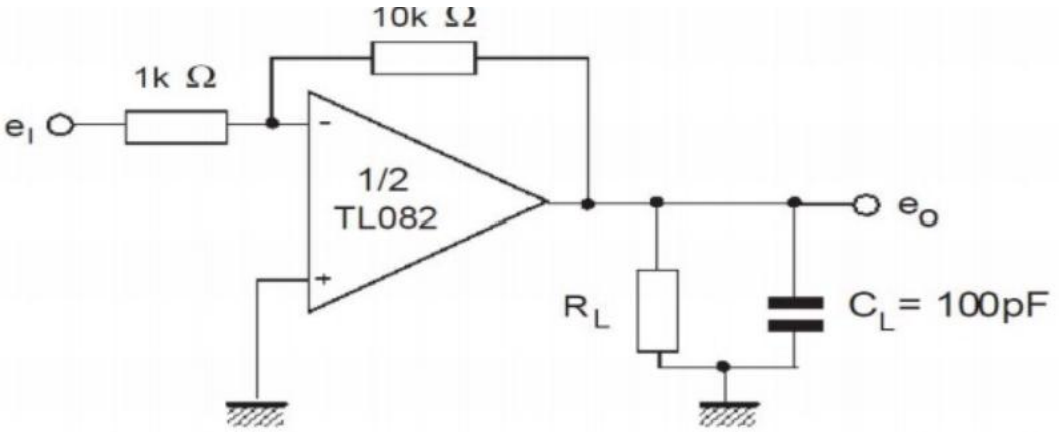


NOTE A:These resistor values may be adjusted for a symmetrical output.

7) 电压跟随器 Voltage Follower

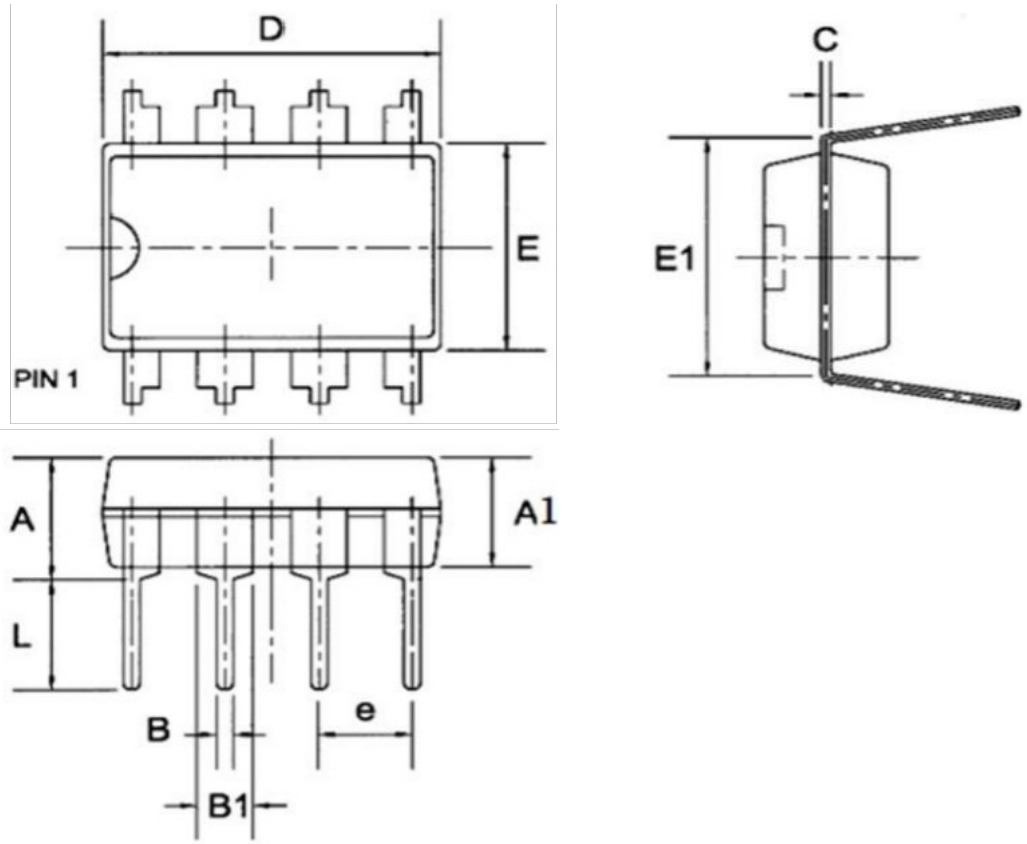


8) 增益为10反相放大器 Gain-of-10 Inverting Amplifier



封装尺寸与外形图

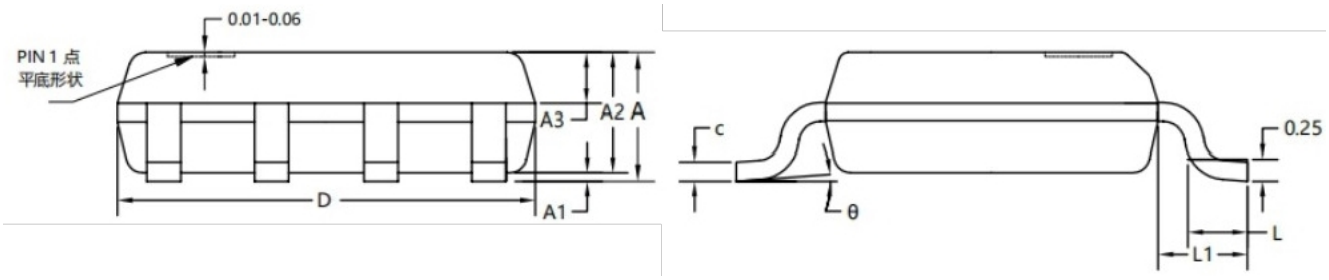
DIP8

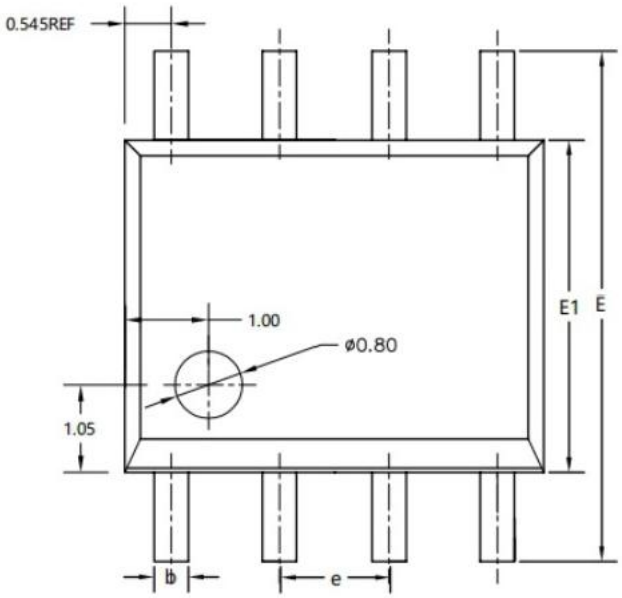


Symbol	Dimensions in Millimeters		
	Min	Nom	Max
A			4.31
A1	3.15	3.30	3.65
B	0.38	0.46	0.51
B1	1.27	1.55	1.77
C	0.20	0.25	0.30
D	8.95	9.40	9.45
E	6.15	6.20	6.65
E1		7.60	
e		2.54	

L	3.00	3.30	3.60

SOP8





SYMBOL	MILU METER		
	MIN	NOM	MAX
A	1.55	1.65	1.75
A1	**0.10**	**0.15**	0.20
A2	1.35	1.45	1.55
A3	0.60	0.70	0.80
b	0.30	0.40	0.50
c	0.17	0.20	0.25
D	4.80	4.90	5.00
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
e	1.27BSC		
L	0.50	0.60	0.70
L1	1.05REF		
θ	0°	4°	8°