



概述

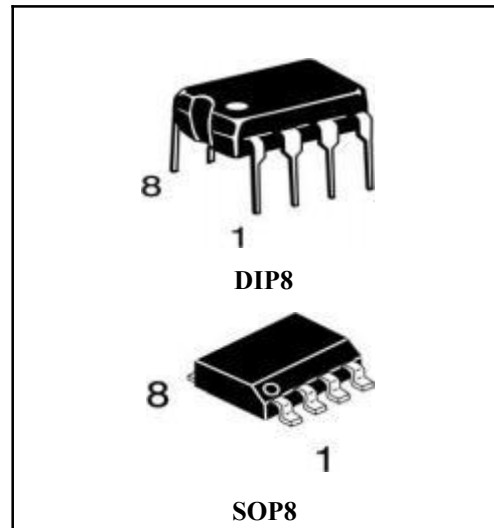
LM258是由两个独立的高增益运算放大器组成。可以是单电源工作，也可以是双电源工作，电源的功耗电流与电源电压大小无关。应用范围包括音频放大器、工业控制、DC增益部件和所有常规运算放大电路。

采用 DIP8 和 SOP8 封装形式。

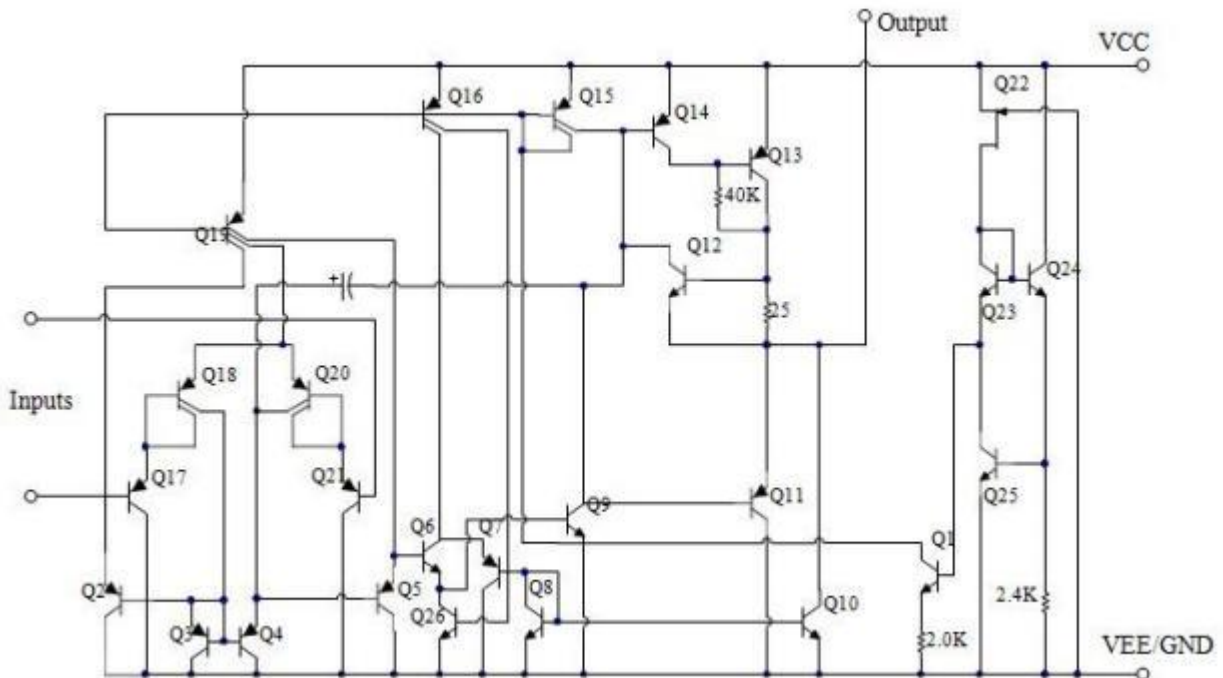
主要特点

- 可单电源或双电源工作
- 包含两个运算放大器
- 逻辑电路匹配
- 功耗小
- 频率范围宽

封装外形图



功能框图（每路运放）





管脚说明

管脚序号	管脚名称	I/O	描述	管脚排列图
1	OUT	I	输出 1。	
2	IN-	O	反向输入 1。	
3	IN+	I	正向输入 1。	
4	GND	P	地。	
5	IN+	I	正向输入 2。	
6	IN-	P	反向输入 2。	
7	OUT	P	输出 2。	
8	VCC	I	电源。	

极限参数 (若无其它规定, $T_{amb}=25^{\circ}C$)

参数	标识	值
电源电压	V_{CC}	32 或 $\pm 16V$
差分输入电压	V_D	32V
输入电压	V_{IN}	$-0.3 \sim V_{CC}$
功耗	DIP 封装	830 mW
	SOP 封装	530 mW
输出端对地短路电流 (每路放大器, $V \leq 15V$)	I_{STE}	持续
输入电流 ($V_{IN} < -0.3V$)	I_{IN}	50mA
最大工作结温	T_J	$150^{\circ}C$
工作环境温度	T_A	$0 \sim +70^{\circ}C$
贮存温度	T_{stg}	$-65 \sim +150^{\circ}C$

电气特性

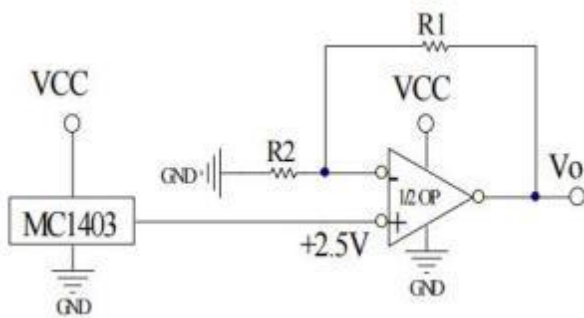
条件: (若无其它规定, $V_{CC}=5.0V$ 。)

参数	测试条件	Min	典型值	Max	单位
输入失调电压	$T_a=25^{\circ}C$		± 2	± 5	mV
输入偏置电流	$T_a=25^{\circ}C$, $I_{IN}(+)$ 或 $I_{IN}(-)$, $V_{CM}=0V$		± 45	± 250	nA
输入失调电流	$T_a=25^{\circ}C$, $I_{IN}(+) - I_{IN}(-)$, $V_{CM}=0V$		± 3	± 50	nA
输入共模电压范围	$T_a=25^{\circ}C$, $V^+=30V$	0		$V_{CC}-1.5$	V
电源电流	$R_L = \infty$ 在所有运算放大器上	$V_{CC} = 30V$	1	2	mA
		$V_{CC} = 5V$	0.5	1.2	mA
大信号电压增益	$V_{CC}=15V$, $T_a=25^{\circ}C$, $R_L \geq 2k\Omega$ (对于 $V_o=1 \sim 11V$)	25	100		V/mV
共模抑制比	DC, $T_a=25^{\circ}C$, $V_{CM}=0 \sim V_{CC}-1.5V$	65	90		dB
电源抑制比	DC, $T_a=25^{\circ}C$, $V_{CC} = 5 \sim 30V$	65	100		dB

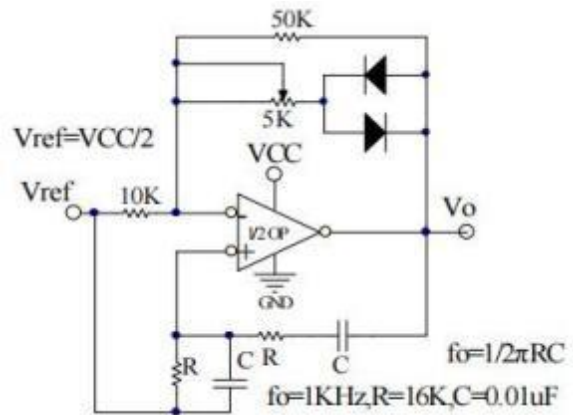


输出源电流	$V_{IN(+)}=1V, V_{IN(-)}=0V, V_{CC}=15V, V_o=2V, T_a=25^\circ C$	20	40		mA
输出吸电流	$V_{IN(-)}=1V, V_{IN(+)}=0V, V_{CC}=15V, V_o=2V, T_a=25^\circ C$	10	15		mA
	$V_{IN(-)}=1V, V_{IN(+)}=0V, V_{CC}=15V, V_o=200mV, T_a=25^\circ C$	12	50		μA
对地短路电流	$V_{CC}=15V, T_a=25^\circ C$		40	60	mA
输出电压摆幅	VOH	$V_{CC}=30V, R_L=2k\Omega$	26		V
		$V_{CC}=30V, R_L=10k\Omega$	27	28	V
	VOL	$V_{CC}=5V, R_L=10k\Omega$		5	20

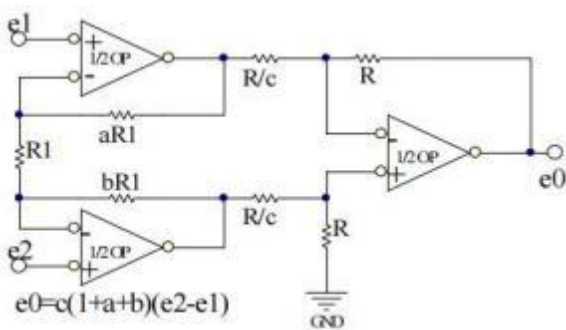
典型应用



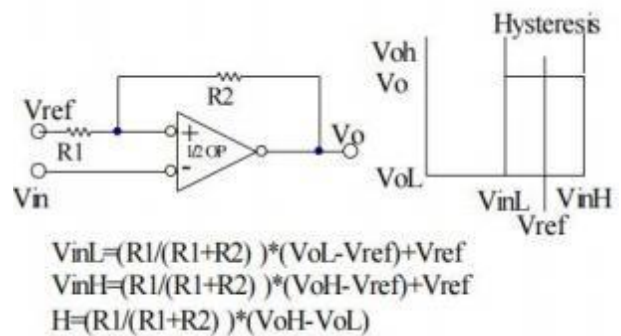
电压基准, $V_o=2.5V (1+R1/R2)$



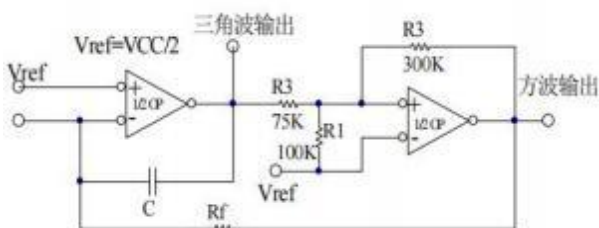
文氏桥振荡器



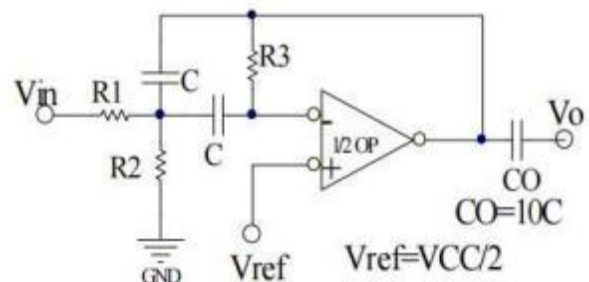
高阻抗差动放大器



迟滞比较器



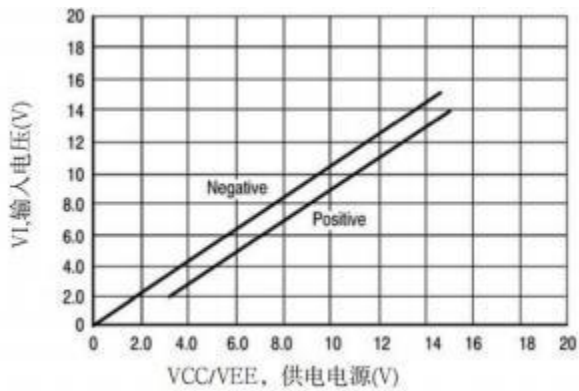
函数信号发生器



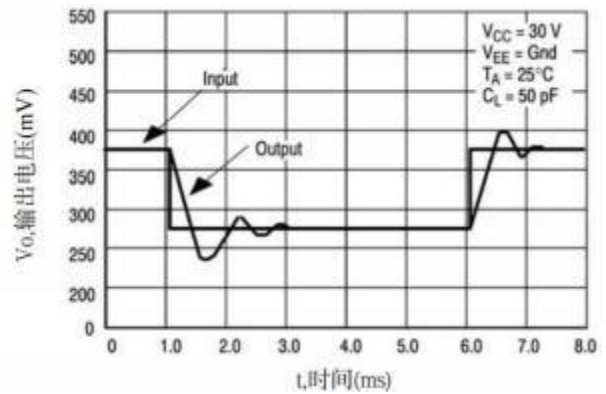
f_o = center frequency 多反馈带通滤波器



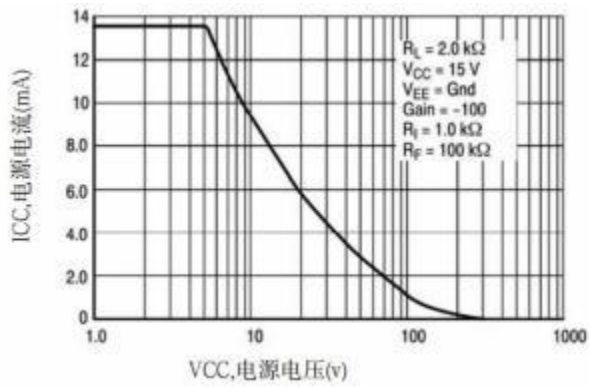
特性曲线



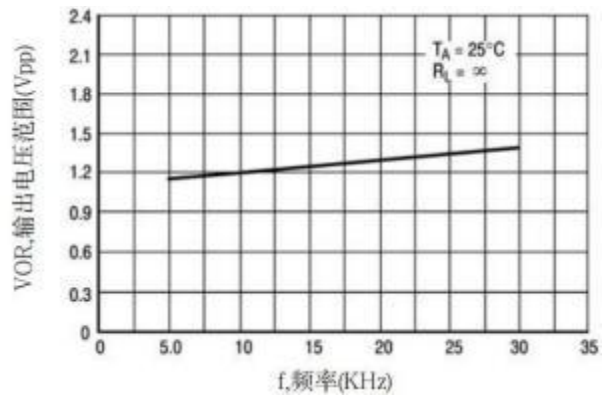
输入电压范围



小信号电压跟随器脉冲响应 (同向)



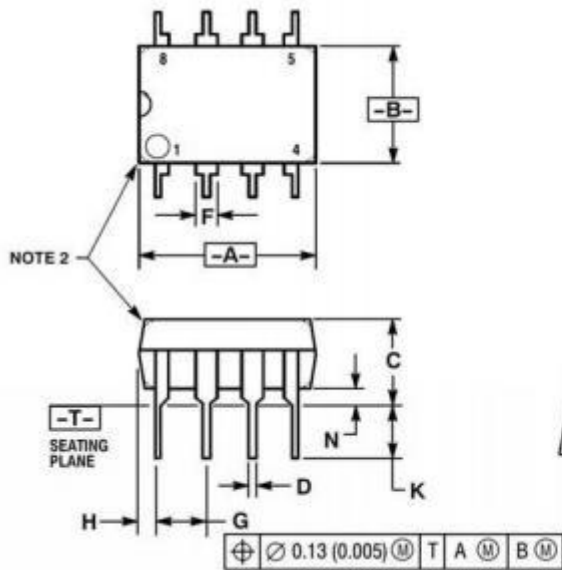
电源电流 (静态功耗)



大信号频率响应



封装机械数据:

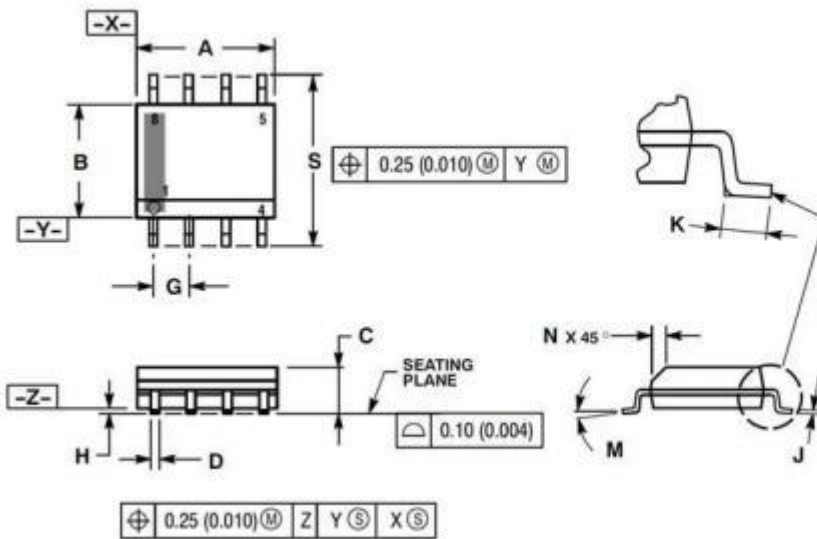


DIP8

NOTES:

1. DIMENSION L TO CENTER OF LEAD WHEN FORMED PARALLEL.
2. PACKAGE CONTOUR OPTIONAL (ROUND OR SQUARE CORNERS).
3. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.40	10.16	0.370	0.400
B	6.10	6.60	0.240	0.260
C	3.94	4.45	0.155	0.175
D	0.38	0.51	0.015	0.020
F	1.02	1.78	0.040	0.070
G	2.54 BSC		0.100 BSC	
H	0.76	1.27	0.030	0.050
J	0.20	0.30	0.008	0.012
K	2.92	3.43	0.115	0.135
L	7.62 BSC		0.300 BSC	
M	---	10 [°]	---	10 [°]
N	0.76	1.01	0.030	0.040



SOP8

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.
6. 751-01 THRU 751-06 ARE OBSOLETE. NEW STANDARD IS 751-07.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.197
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.053	0.069
D	0.33	0.51	0.013	0.020
G	1.27 BSC		0.050 BSC	
H	0.10	0.25	0.004	0.010
J	0.19	0.25	0.007	0.010
K	0.40	1.27	0.016	0.050
M	0 [°]	8 [°]	0 [°]	8 [°]
N	0.25	0.50	0.010	0.020
S	5.80	6.20	0.228	0.244



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