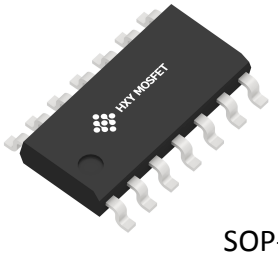
概述

LM339N/NOPB是一块四比较器集成电路，主要应用于消费类和工业类电子产品中，进行电平检波和低电平探测。

采用DIP-14、SOP-14(PDIP-14)封装形式

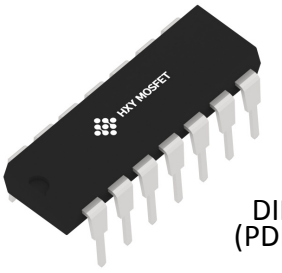


SOP-14

PIN1

主要特点

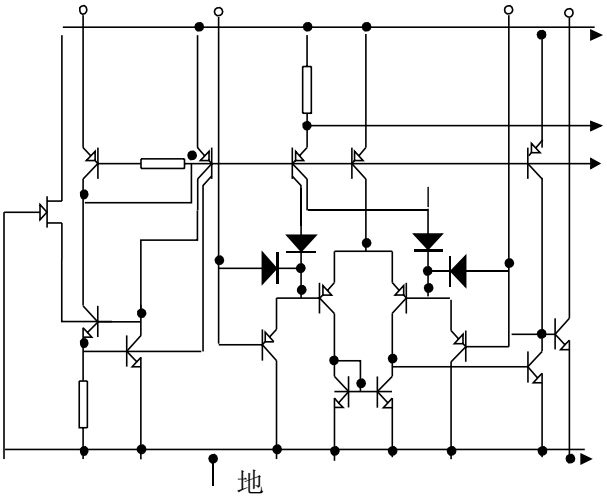
- 单电源或双电源工作
- 输入偏置电流低：25nA（典型）
- 输入失调电流低： ±5.0nA（典型）
- 输出饱和电压低：130mV
- 可与 TTL 及 CMOS 兼容



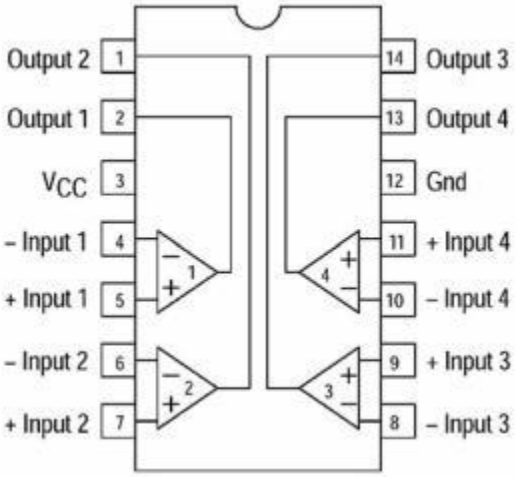
DIP-14
(PDIP-14)

PIN1

内部电路图



引脚端功能符号



引出端序号	功　能	符　号	引出端序号	功　能	符　号
1	输出 2	OUT2	8	反相输入 3	IN3（-）
2	输出 1	OUT1	9	正相输入 3	IN3（+）
3	电源	Vcc	10	反相输入 4	IN4（-）
4	反相输入 1	IN1（-）	11	正相输入 4	IN4（+）
5	正相输入 1	IN1（+）	12	地	GND
6	反相输入 2	IN2（-）	13	输出 4	OUT4
7	正相输入 2	IN2（+）	14	输出 3	OUT3

极限参数（绝对最大额定值，若无其它规定，Tamb=25℃）

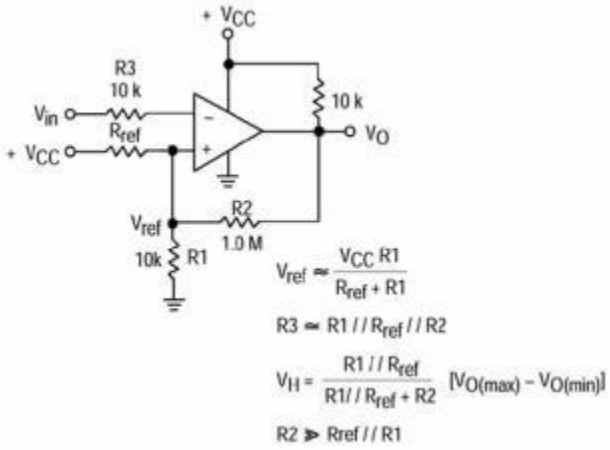
参　数	符　号	数　值	单　位
电源电压	Vcc	36 或±18	V
输入差分电压范围	VIDR	36	V
输入共模电压范围	VICMR	-0.3~Vcc	V
输出电流	ISC	50	mA
功耗（*）	PD	1.0	W
工作环境温度	Tamb	0~70	℃
贮存温度	Tstg	-65~150	℃

注（*:）在 25℃以上使用时， 每升高 1℃,功耗减少 8mW。

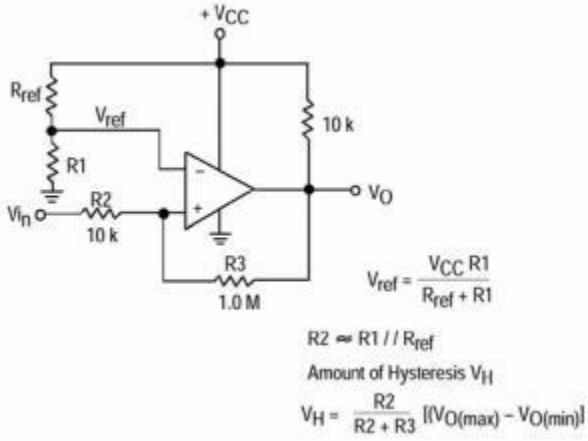
电特性（若无其它规定，Vcc=5V，Tamb=25℃）

特性	测试条件	符 号	规 范 值			单位
			最小	典型	最大	
输入失调电压		V_{IO}		±2.0	±5.0	mV
	0℃≤ Ta ≤70℃				±9.0	
输入失调电流		I_{IO}		±5.0	±50	nA
	0℃≤Ta ≤70℃				±150	
输入偏置电流		I_{IB}		25	250	nA
	0℃≤Ta ≤70℃				400	
输入共模电压范围		V_{ICR}	0		Vcc-1.5	V
	0℃≤Ta≤70℃		0		Vcc-2.0	
电源电流	$R_L=\infty$	Icc		0.8	2.0	mA
	$R_L=\infty$， Vcc=30V			1.0	2.5	
电压增益	R_L > 15K，Vcc=15V	Gv	50	200		V/mV
大信号响应时间	V_{IN}=TTL 逻辑摆幅，V_{REF}=1.4V，V_{RL}=5.0V， R_L=5.1K	t_{RES}		300		ns
响应时间	V_{RL}=5.0V， R_L=5.1K	t_{RES}		1.3		ns
输入差分电压		V_{ID}			Vcc	V
输出陷电流	$V_{IN(-)}$ > 1.0V，$V_{IN(+)}$=0V，Vo<1.5V	I_{SINK}	6.0	16		mA
输出饱和电压	$V_{IN(-)}$ >1.0V，$V_{IN(+)}$=0V，I_{SINK}<4.0mA	V_{SAT}		130	400	mV
	$V_{IN(-)}$ >1.0V，$V_{IN(+)}$=0V，I_{SINK}<4.0mA 0℃≤Ta ≤70℃				700	
输出漏电流	$V_{IN(+)}$ >1.0V，$V_{IN(-)}$=0V，Vo=5.0V	I_{OL}		0.1		nA
	$V_{IN(+)}$ >1.0V，$V_{IN(-)}$=0V，Vo=30V 0℃≤Ta ≤70℃				1000	

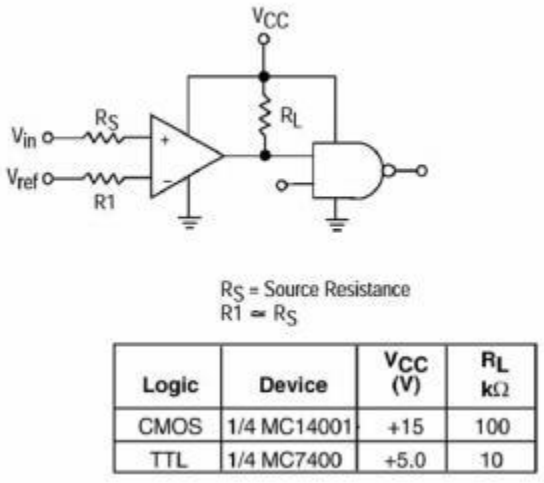
应用图



带滞后的反相比较器

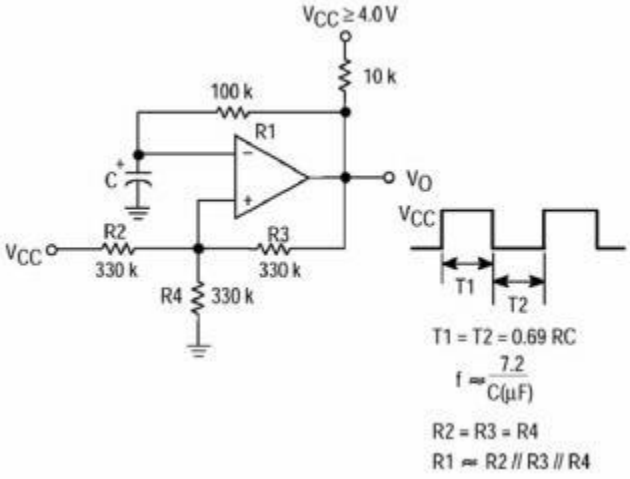


带滞后的正相比较器

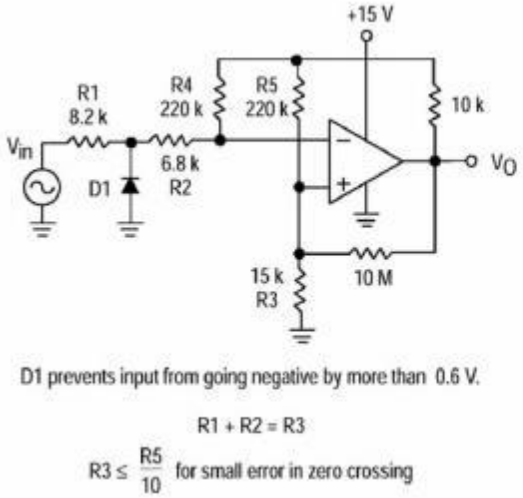


Logic	Device	V_{CC} (V)	R_L kΩ
CMOS	1/4 MC14001	+15	100
TTL	1/4 MC7400	+5.0	10

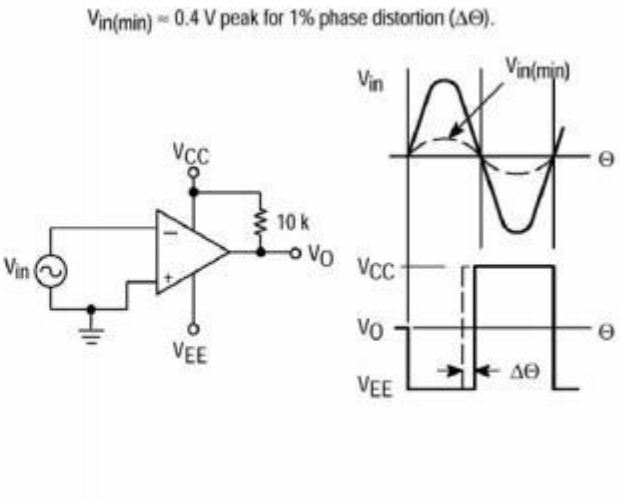
逻辑驱动器



方波振荡器



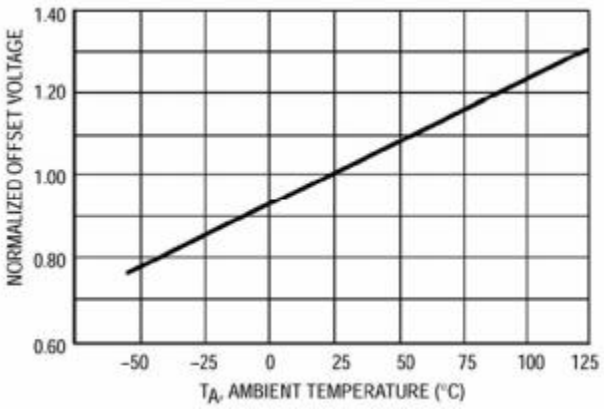
过零检波器(单电源应用)



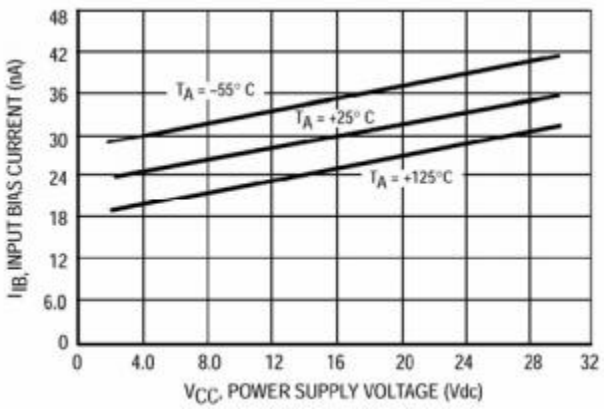
过零检波器(双电源应用)

特性曲线

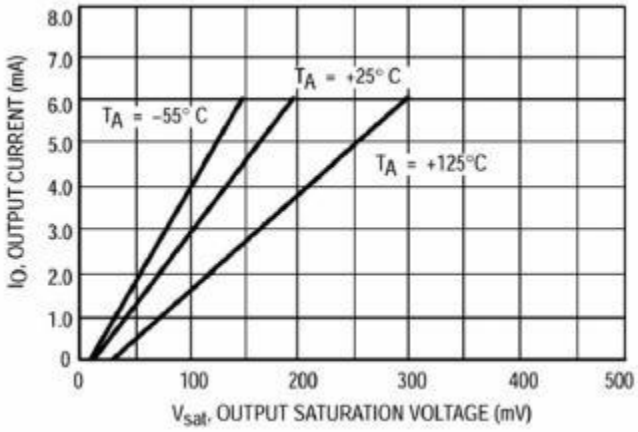
正常输入失调电压



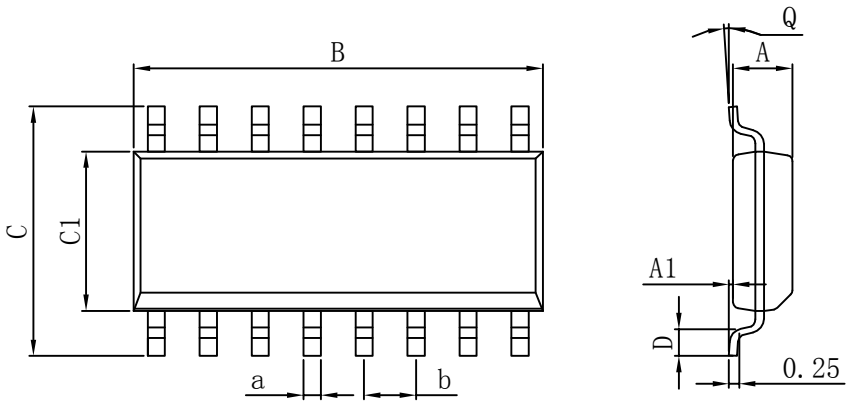
输入偏置电流



输出陷电流与输出饱和电压

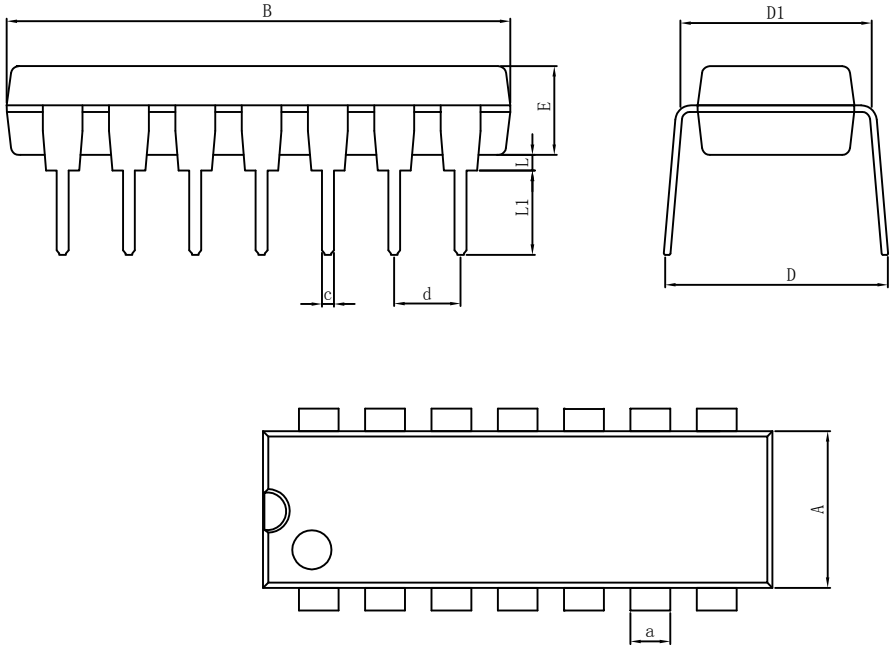


SOP-14



UNIT: mm							
DIM.	MIN	TYP	MAX	DIM.	MIN	TYP	MAX
A	4.520	4.570	4.620	a	0.400	0.420	0.440
A1	0.100	–	0.250	b	1.260	1.270	1.280
B	8.500	8.750	9.000	Q	0°	–	8°
C	5.800	6.100	6.250				
C1	3.800	3.900	4.000				
D	0.400	–	0.950				

DIP-14(PDIP-14)



UNIT: mm							
DIM.	MIN	TYP	MAX	DIM.	MIN	TYP	MAX
A	6.100	6.300	6.680	a	1.504	1.524	1.544
B	18.940	19.200	19.560	c	0.437	0.457	0.477
D	8.200	8.700	9.200	d	2.530	2.540	2.550
D1	7.42	7.62	7.82	L	0.500	–	0.800
E	3.100	3.300	3.550	L1	3.000	3.200	3.600

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IDL10G65C5XUMA2 PTVSHC3D5VU S4D15120H C3M0040120D S3D08065E 1SMB5930BT3G
DMPH6250SQ-13 SG3525-HXY AOD403-HXY IRLML2244TRPBF-HXY SS5150 TLV74318PDBVR-HXY
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