



概述

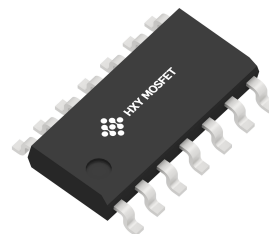
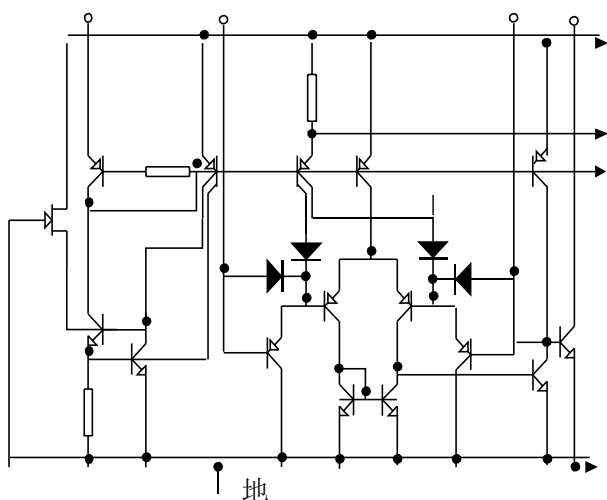
LM339N是一块四比较器集成电路，主要应用于消费类和工业类电子产品中，进行电平检波和低电平探测。

采用DIP-14、SOP-14 (PDIP-14) 封装形式

主要特点

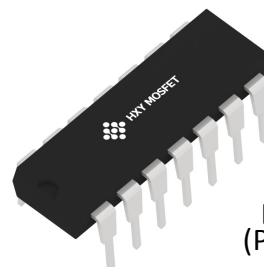
- ☞ 单电源或双电源工作
- ☞ 输入偏置电流低：25nA（典型）
- ☞ 输入失调电流低：±5.0nA（典型）
- ☞ 输出饱和电压低：130mV
- ☞ 可与 TTL 及 CMOS 兼容

内部电路图



PIN1

SOP-14

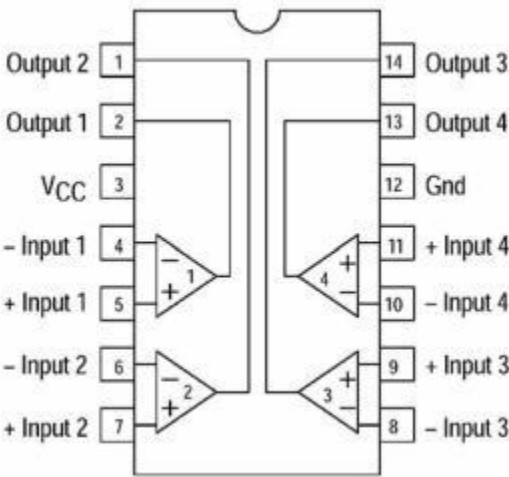


PIN1

DIP-14
(PDIP-14)



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。

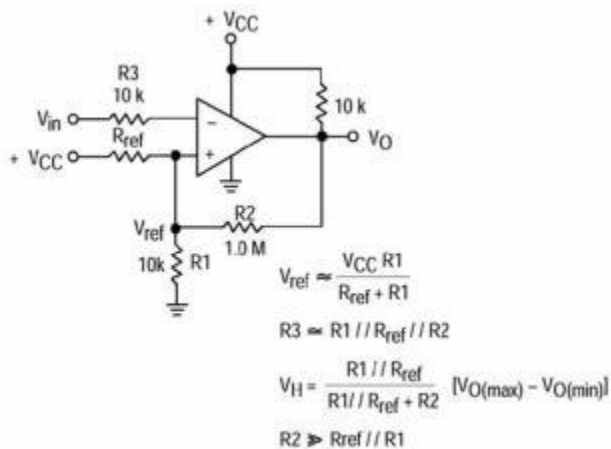


电特性 (若无其它规定, $V_{CC}=5V$, $T_{amb}=25^{\circ}C$)

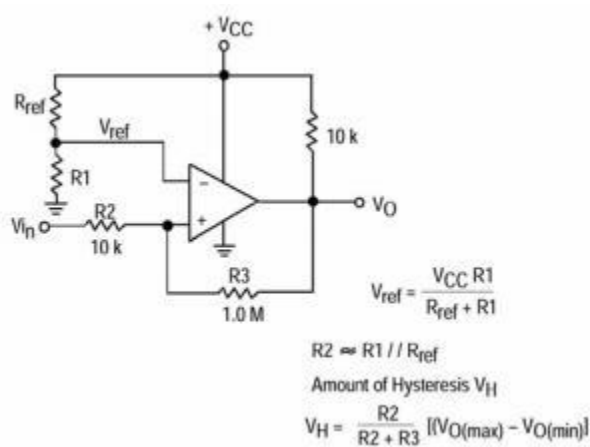
特性	测试条件	符 号	规 范 值			单 位
			最小	典型	最大	
输入失调电压		V_{IO}		± 2.0	± 5.0	mV
	$0^{\circ}C \leq T_a \leq 70^{\circ}C$				± 9.0	
输入失调电流		I_{IO}		± 5.0	± 50	nA
	$0^{\circ}C \leq T_a \leq 70^{\circ}C$				± 150	
输入偏置电流		I_{IB}		25	250	nA
	$0^{\circ}C \leq T_a \leq 70^{\circ}C$				400	
输入共模电压范围		V_{ICR}	0		$V_{CC}-1.5$	V
	$0^{\circ}C \leq T_a \leq 70^{\circ}C$		0		$V_{CC}-2.0$	
电源电流	$R_L = \infty$	I_{CC}		0.8	2.0	mA
	$R_L = \infty, V_{CC}=30V$			1.0	2.5	
电压增益	$R_L > 15K, V_{CC}=15V$	G_V	50	200		V/mV
大信号响应时间	$V_{IN} = \text{TTL 逻辑摆幅}, V_{REF}=1.4V,$ $V_{RL}=5.0V, R_L=5.1K$	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}			V_{CC}	V
输出陷电流	$V_{IN}(-) > 1.0V, V_{IN}(+) = 0V, V_O < 1.5V$	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
	$V_{IN}(-) > 1.0V, V_{IN}(+) = 0V, I_{SINK} < 4.0mA$ $0^{\circ}C \leq T_a \leq 70^{\circ}C$				700	
输出漏电流	$V_{IN}(+) > 1.0V, V_{IN}(-) = 0V, V_O = 5.0V$	I_{OL}		0.1		nA
	$V_{IN}(+) > 1.0V, V_{IN}(-) = 0V, V_O = 30V$ $0^{\circ}C \leq T_a \leq 70^{\circ}C$				1000	



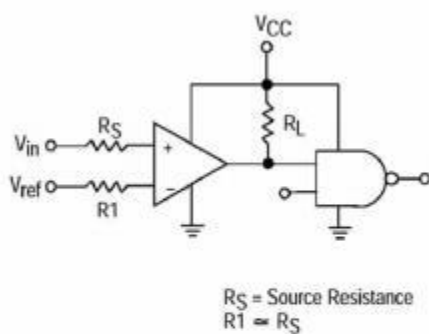
应用图



带滞后的反相比较器

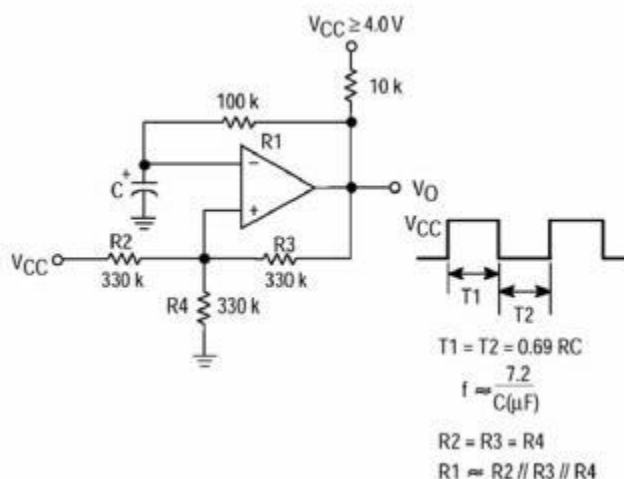


带滞后的正相比较器

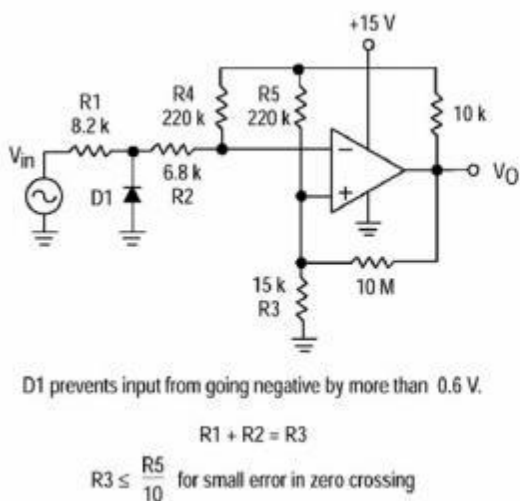


Logic	Device	V _{CC} (V)	R _L kΩ
CMOS	1/4 MC14001	+15	100
TTL	1/4 MC7400	+5.0	10

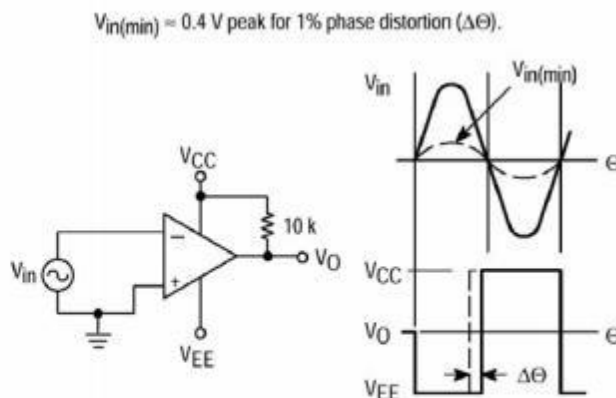
逻辑驱动器



方波振荡器



过零检波器(单电源应用)

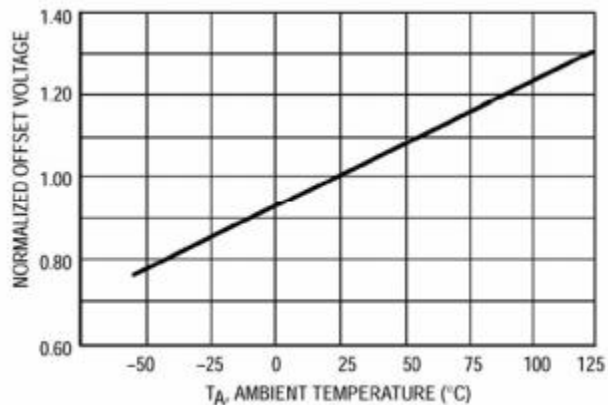


过零检波器(双电源应用)

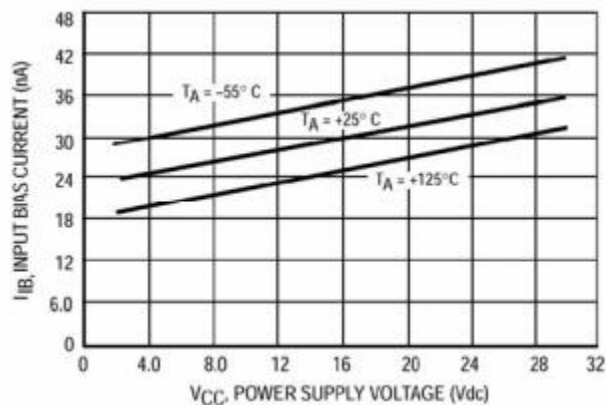


特性曲线

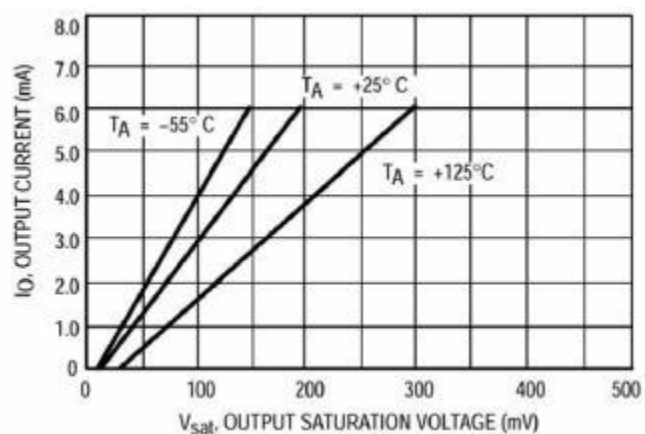
正常输入失调电压



输入偏置电流

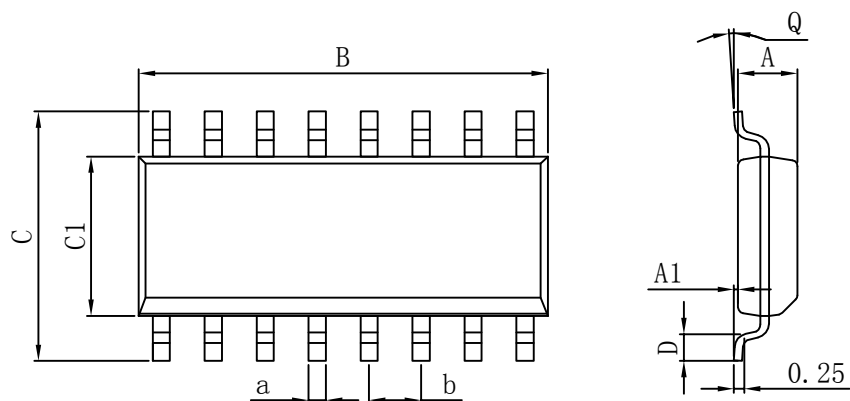


输出陷电流与输出饱和电压



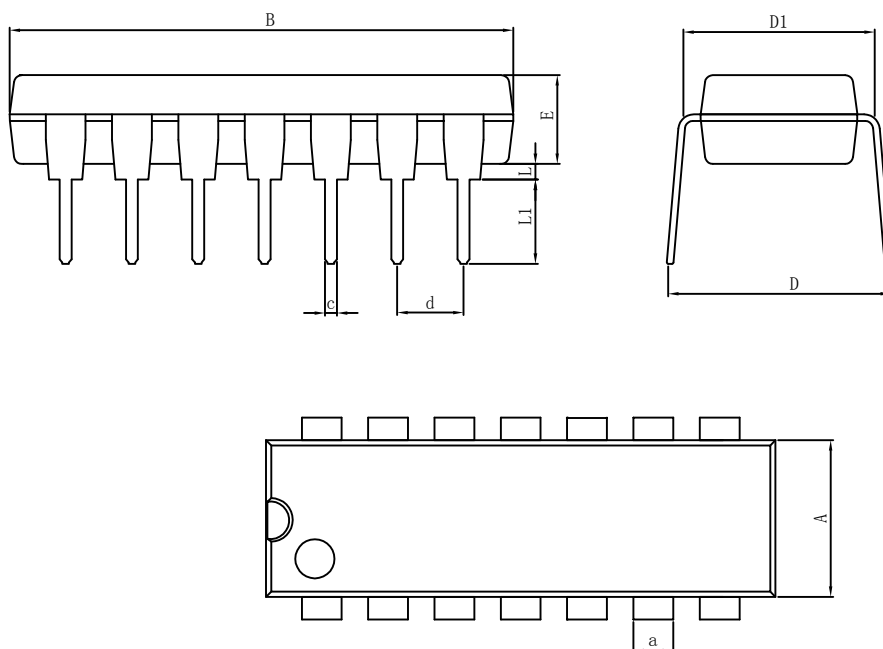


SOP-14



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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