



## 产品简介

HSN74LVC1G08DBVR 是一款的 2 输入与门集成电路,可实现 $Y=\overline{A+B}$ 和 $Y=A*B$ 的数学逻辑运算。采用先进的 CMOS 工艺设计,具有低功耗和高输出驱动能力的工作特点,电源电压 VCC 在 1.65V 和 5.5V 之间芯片均可正常工作。并且 HSN74LVC1G08DBVR 具有多种小型封装外形,可广泛应用于高端精密仪器和小型化低功耗的手持设备,以及人工智能等领域。

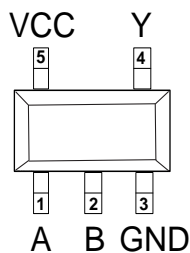
## 产品特点

- 低输入电流: 典型值 0.1uA
- 低静态功耗: 典型值 0.1uA
- 高输出驱动: VCC=4.5V, 大于 32MA
- 宽工作电压范围: 1.65V to 5.5V
- 封装形式: SOT-23-5L/SO-70-5L

## 产品用途

- 便携式音频接口
- 蓝光播放器和家庭影院
- 数字电视
- 固态硬盘
- 无线耳机, 智能手表等
- 智能穿戴设备

## 封装形式和管脚功能定义



SOT-23-5L/SO-70-5L

名称	管脚	说明
A	1	输入
B	2	输入
GND	3	电源地
Y	4	输出
V <sub>CC</sub>	5	电源正



## 极限参数

参数	符号	极限值	单位
工作电压	$V_{CC}$	6.5	V
输入	$V_{IN}$	-0.5~6.5	V
输出电压 (1)	$V_{OUT}$	-0.5~6.5	V
单个管脚输出电流	$I_{OUT}$	25	mA
$V_{CC}$ 或 GND 电流	$I_{CC}$	50	mA
存储温度	$T_S$	-65-150	°C
引脚焊接温度	$T_W$	260, 10s	°C

注：1、在 $V_{CC}=0V$ 断电状态下，输出所能承受的极限电压，

2、极限参数是指无论在任何条件下都不能超过的极限值。万一超过此极限值，将有可能造成产品劣化等物理性损伤；同时在接近极限参数下，不能保证芯片可以正常工作。

## 原理逻辑图



## 真值表

Inputs		Output
A	B	Y
L	L	L
L	H	L
H	L	L
H	H	H

## 工作条件

项目	符号	测试条件	最小值	典型值	最大值	单位
工作电压	$V_{CC}$	-	1.65	-	5.5	V
输入高电平电压	$V_{IH}$	$V_{CC} = 1.65V \sim 1.95V$	$0.65 * V_{CC}$	-	-	V
		$V_{CC} = 2.3V \sim 2.7V$	1.7V	-	-	
		$V_{CC} = 3V \sim 5.5V$	$0.7 * V_{CC}$	-	-	
输入高电平电压	$V_{IH}$	$V_{CC} = 1.65V \sim 1.95V$	-	-	$0.35 * V_{CC}$	V
		$V_{CC} = 2.3V \sim 2.7V$	-	-	0.7	
		$V_{CC} = 3V \sim 5.5V$	-	-	$0.3 * V_{CC}$	
输入电压	$V_I$	-	0	-	5.5	V
输出电压	$V_O$	-	0	-	$V_{CC}$	V
高电平输出电流	$I_{OH}$	$V_{CC} = 1.65V$	-	-	-4	mA
		$V_{CC} = 2.3V$	-	-	-8	
		$V_{CC} = 3V$	-	-	-16	
		$V_{CC} = 4.5V$	-	-	-32	
低电平输出电流	$I_{OL}$	$V_{CC} = 1.65V$	-	-	4	mA
		$V_{CC} = 2.3V$	-	-	8	
		$V_{CC} = 3V$	-	-	16	
		$V_{CC} = 4.5V$	-	-	32	



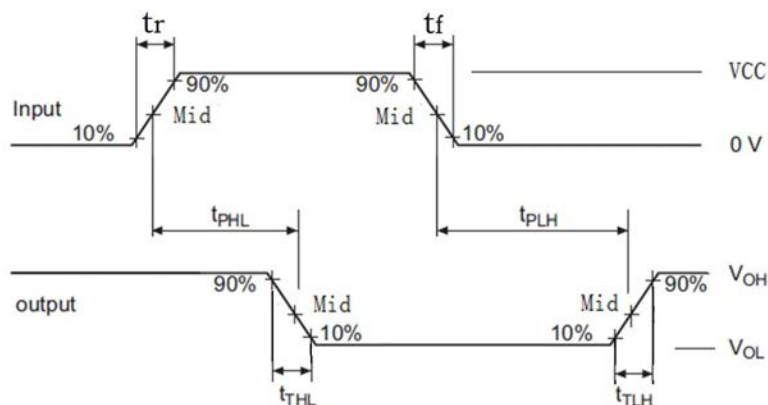
## 电学特性

直流电学特性:  $T_A=25^\circ\text{C}$

项目	符号	测试条件	$V_{CC}$	典型值	最大值	单位
高电平负载电压	$V_{OH}$	$I_{OH} = -100\mu\text{A}$	1.65V~5.5V	1.64	-	V
		$I_{OH} = -4\text{ mA}$	1.65V	1.47	-	
		$I_{OH} = -8\text{ mA}$	2.3V	2.15	-	
		$I_{OH} = -16\text{ mA}$	3V	2.73	-	
		$I_{OH} = -32\text{ mA}$	4.5V	4.0	-	
低电平负载电压	$V_{OL}$	$I_{OH} = 100\mu\text{A}$	1.65V~5.5V	0.01	-	V
		$I_{OH} = 4\text{ mA}$	1.65V	0.11	-	
		$I_{OH} = 8\text{ mA}$	2.3V	0.11	-	
		$I_{OH} = 16\text{ mA}$	3V	0.2	-	
		$I_{OH} = 32\text{ mA}$	4.5V	0.35	-	
输入电流	$I_I$	A B $V_I = 5.5\text{V}$ 或 GND	0~5.5V	0.01	$\pm 5$	uA
				0.01	$\pm 5$	
关断电流	$I_{OFF}$	$V_I$	$V_I = 5.5\text{V}$	0	$\pm 10$	uA
		$V_O$	$V_O = 5.5\text{V}$	0	$\pm 10$	
工作电流	$I_{CC}$	$V_I = 5.5\text{V}, I_O = 0$	1.65V~5.5V	0.01	10	uA
		$V_I = \text{GND}, I_O = 0$		0.01	10	
工作电流变化值	$\Delta I_{CC}$	A= $V_{CC} - 0.6\text{V}$ B= $V_{CC}$ 或 GND	3V~5.5V	25	-	uA
		B= $V_{CC} - 0.6\text{V}$ A= $V_{CC}$ 或 GND		25	-	

交流电学特性:  $T_A=25^\circ\text{C}$   $V_{CC}=5.0\text{V}$ ,  $t_r = t_f \leq 20\text{ns}$  见测试方法。

项目	符号	测试条件	最小值	典型值	最大值	单位
最大传输延迟时间 A、B to Y	$t_{PHL}$	$C_L = 15\text{pF}$	-	10	-	ns
	$t_{PLH}$	$C_L = 15\text{pF}$	-	10	-	ns

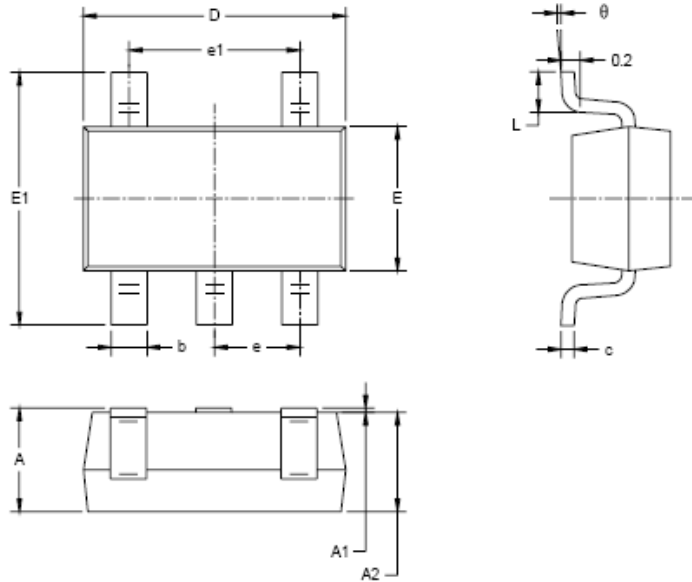


- 注: 1、 $C_L$ 电容为外接贴片电容 (0603), 靠近输出管脚接入, 电容地靠近芯片GND;  
2、Input: 端口输入电平,  $f=500\text{kHz}$ ,  $D=50\%$ ;  $t_r = t_f \leq 20\text{ns}$ ;  
3、Output: Y端输出测试。



## 电学特性

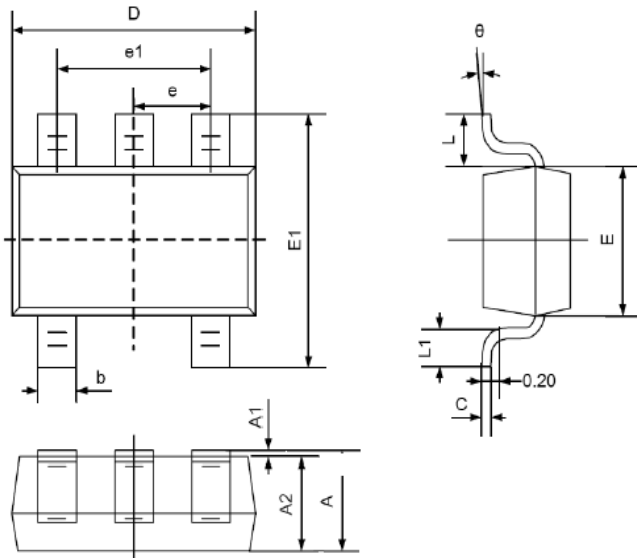
S0T-23-5L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950 BSC		0.037 BSC	
e1	1.900 BSC		0.075 BSC	
L	0.300	0.600	0.012	0.024
$\theta$	0°	8°	0°	8°



S0-70-5L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
C	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°



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