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。

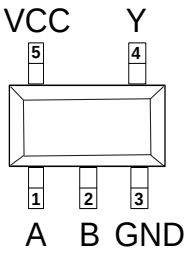
产品特点

- 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_{CC}	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
Vcc 或 GND 电流	I_{CC}	50	mA
存储温度	T_S	-65-150	℃
引脚焊接温度	T_W	260,10s	℃

注：1、在VCC=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~1.95V	0.65* V_{CC}	-	-	V
		V_{CC} =2.3V~2.7V	1.7V	-	-	
		V_{CC} =3V~5.5V	0.7* V_{CC}	-	-	
输入高电平电压	V_{IH}	V_{CC} =1.65V~1.95V	-	-	0.35* V_{CC}	V
		V_{CC} =2.3V~2.7V	-	-	0.7	
		V_{CC} =3V~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	

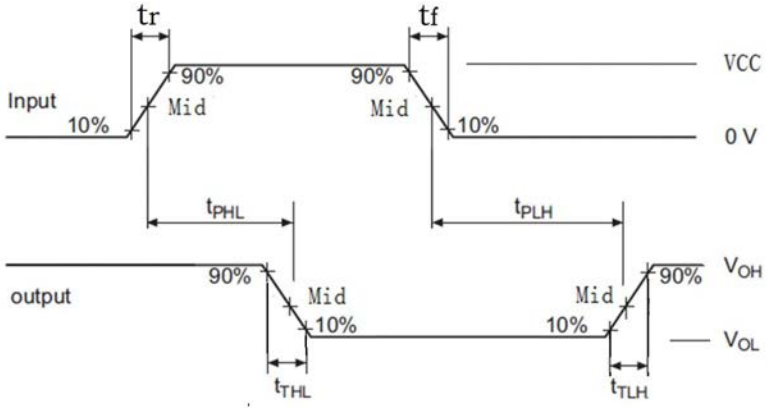
电学特性

直流电学特性： T_A=25℃

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} =-100uA	1.65V~5.5V	1.64	-	V
			I_{OH} =-4 mA	1.65V	1.47	-	
			I_{OH} =-8 mA	2.3V	2.15	-	
			I_{OH} =-16 mA	3V	2.73	-	
			I_{OH} =-32 mA	4.5V	4.0		
低电平负载电压	V_{OL}		I_{OH} =100uA	1.65V~5.5V	0.01	-	V
			I_{OH} =4 mA	1.65V	0.11	-	
			I_{OH} =8 mA	2.3V	0.11	-	
			I_{OH} =16 mA	3V	0.2	-	
			I_{OH} =32 mA	4.5V	0.35	-	
输入电流	I_I	A	V_I =5.5V 或 GND	0~5.5V	0.01	±5	uA
		B			0.01	±5	
关断电流	I_{OFF}	V_I	V_I =5.5V	0	0.01	±10	uA
		V_O	V_O =5.5V	0	0.01	±10	
工作电流	I_{CC}		V_I =5.5V，I_O =0	1.65V~5.5V	0.01	10	uA
			V_I =GND ，I_O =0		0.01	10	
工作电流变化值	ΔI_{CC}		A=V_{CC} -0.6V B=V_{CC} 或 GND	3V~5.5V	25	-	uA
			B=V_{CC} -0.6V A= V_{CC} 或 GND		25	-	uA

交流电学特性： Ta=25℃ V_{CC}=5.0V，t_r =t_f≤20ns 见测试方法。

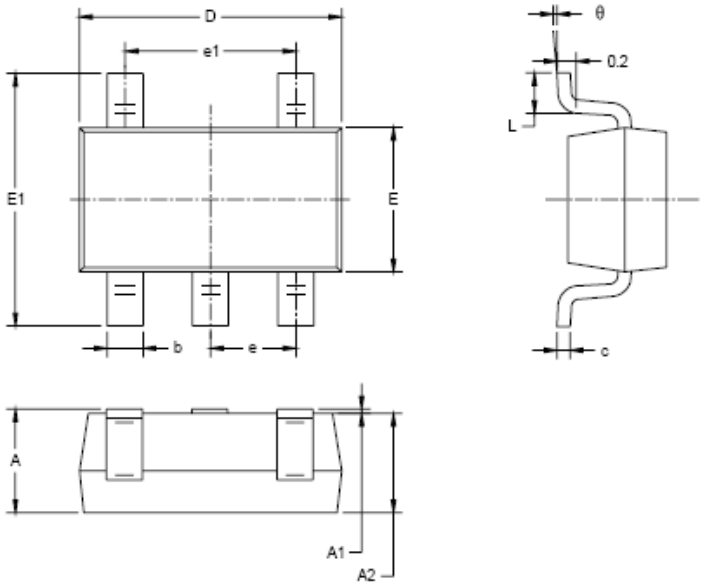
项目	符号	测试条件	最小值	典型值	最大值	单位
最大传输延迟时间 A、B to Y	t_{PHL}	C_L=15pF	-	10	-	ns
	t_{PLH}	C_L=15pF	-	10	-	ns



注：1、CL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=500kHz,D=50%；tr=tf≤20ns；
3、Output：Y端输出测试。

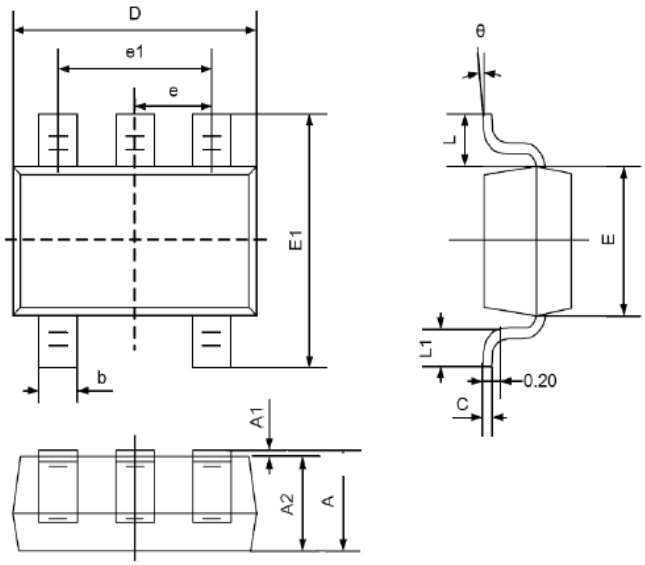
电学特性

SOT-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
θ	0°	8°	0°	8°

SO-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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