



产品介绍

AH710 是一款内置 2 个霍尔效应元件的速度方向传感器系列。每个元件提供一个独立的数字信号输出用于速度和方向的信号处理。

该芯片内部包括两个相距 1.63mm 的霍尔传感元件，包括霍尔电压发生器、电源电压为 3.8~30V 的电压调节器、温度补偿电路、小信号放大器、动态偏移消除系统霍尔传感器、施密特触发器和开漏输出。处理速度和方向信号很方便。

AH710 分为 T0-94 和 SOP-8 两种封装形式，且符合 RoHS 标准。

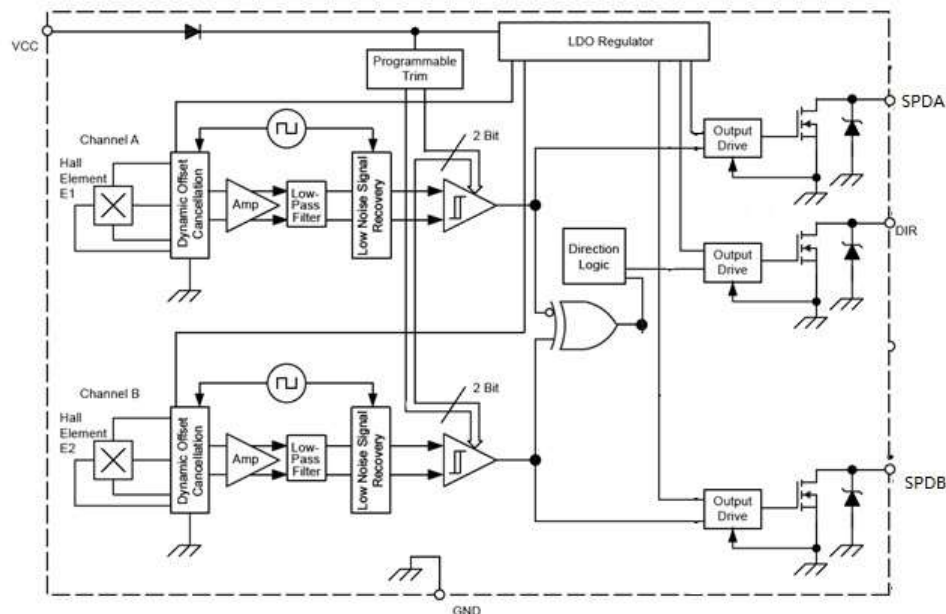
功能

- 霍尔元件间距 1.63mm
- 磁性类型：双极开关
- 工作电压：3.8V~30V
- 反向电压保护
- ESD 性能可达±6kV
- 工作温度范围：-40°C~150°C
- 灵敏度：BOP=40Gs，BRP=-40Gs
- 防静电等级高

应用领域

- 速度检测
- 方向检测
- 磁性编码器

功能框图





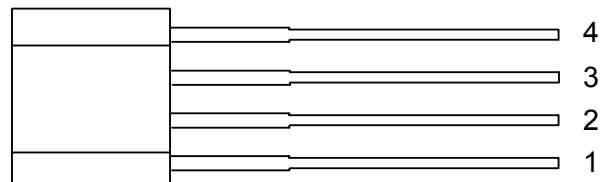
产品包装

产品型号	封装形式	灵敏度	成品包装
AH710-T	T0-94	$\pm 40G_s$	1000/袋
AH710-S	SOP-8	$\pm 40G_s$	100/管

引脚信息

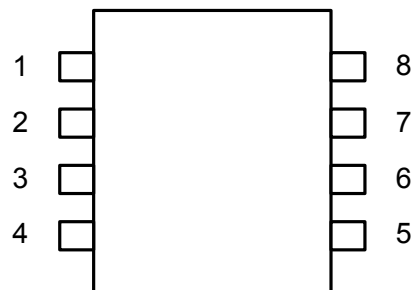
T0-94

编号	名称	描述
1	V _{cc}	电源
2	SPDA	速度 A
3	SPDB	速度 B
4	GND	地



SOP-8

编号	名称	描述
1	GND	地
2	SPDA	速度 A
3	DIR	方向
4	SPDB	速度 B
5	NC	未定义
6	NC	未定义
7	NC	未定义
8	VCC	电源





绝对最大额定

绝对最大值是应用芯片时的极限值，超过该值可能会损坏芯片。尽管在超过该值时芯片的功能不一定受到损害，但是如果在规定时间内超过该值，则芯片的可靠性可能会受到影响。

参数	符号	最小值	最大值	单位
电源电压	V_{CC}	-40	40	V
输出电压	V_{OUT}	-0.5	40	V
输出电流	I_{OUT}	0	30	mA
操作温度范围	T_A	-40	150	°C
储存温度范围	T_S	-50	165	°C

电学参数

测试条件： $V_{CC}=5.0V$ ， $T_A=25^{\circ}C$

参数	符号	测试条件	最小值	典型值	最大值	单位
工作电压	V_{CC}	Operating	3.8	5	30	V
工作电流	I_S	$B < B_{rp}$		8		mA
饱和电压	V_{SAT}	$B=250Gs$, $R_L=10Kohms$			0.4	V
输出漏电流	I_{off}	$B < B_{rp}$, $V_{out}=24V$		0.1	1	uA
上升时间	T_R	$R_L=10Kohms$, $C_L=20pF$			1	uS
下降时间	T_F	$R_L=10Kohms$, $C_L=20pF$			1	uS
工作点	B_{op}	$T_A=25^{\circ}C$	10	40	70	Gs
释放点	B_{rp}	$T_A=25^{\circ}C$	-70	-40	-10	Gs
回差	B_{hys}	$T_A=25degC$, $B_{hys}=B_{op}-B_{rp}$		80		Gs
两个霍尔距离	D_{is}			1.63		mm

磁参数定义

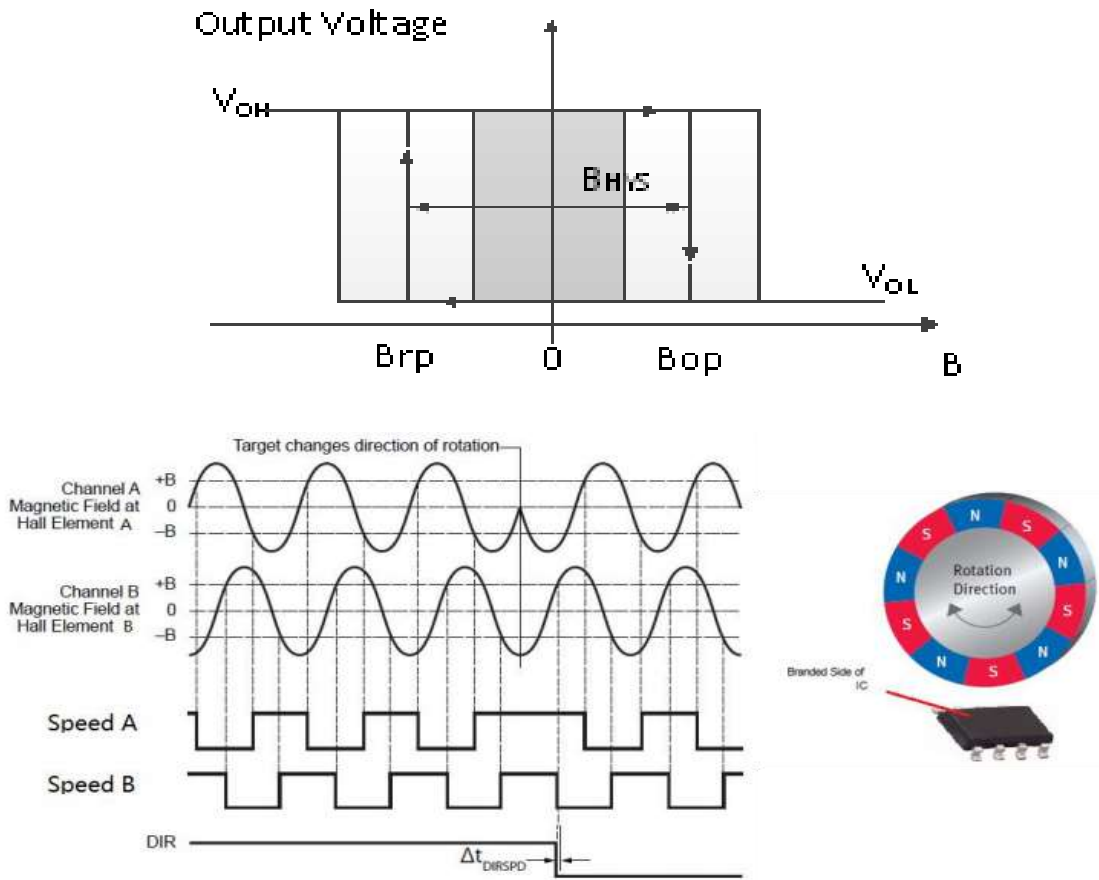
BOP：工作点，在封装标记面施加磁通密度，输出驱动器开 (V_{OUT} =低)

BRP：释放点，在封装标记面施加磁通密度，输出驱动器关 (V_{OUT} =高)

BHYS：滞回窗口 $|BOP-BRP|$

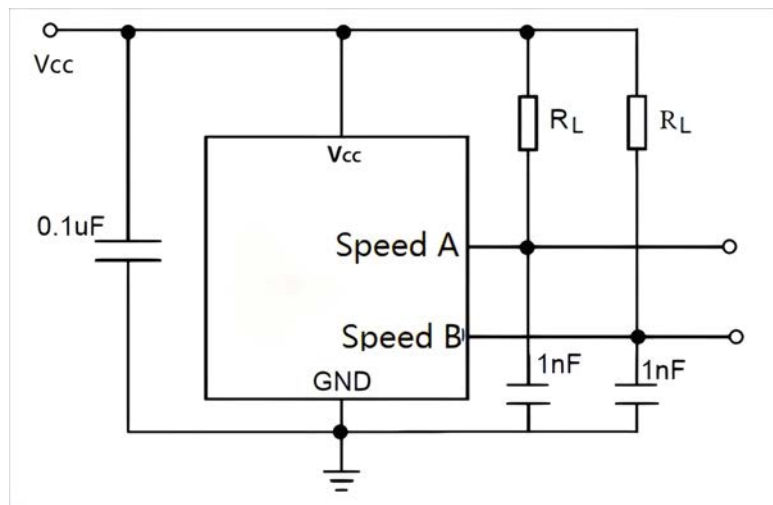


输出特性



应用电路

注意： R_L 推荐 1Kohm~10Kohm



正交双通道速度输出



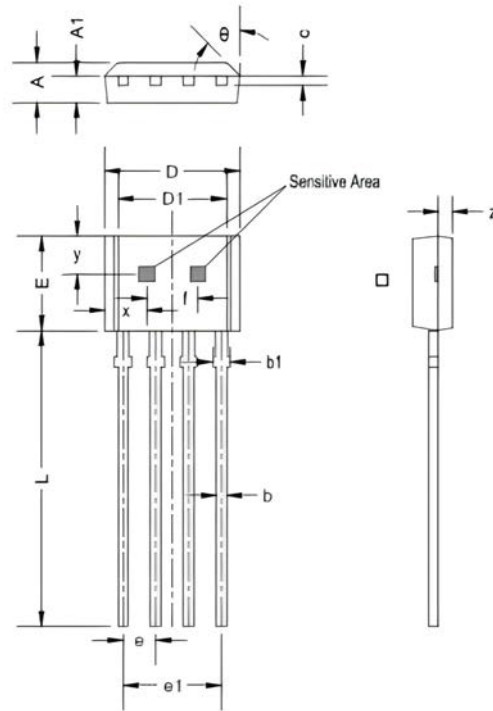
注意事项

- 霍尔芯片是敏感器件，在使用及存储过程中应注意采取静电防护措施。
- 在安装使用中应尽量减少施加到器件外壳和引线上的机械应力。
- 建议焊接温度不超过 350°C，持续时间不超过 5 秒。
- 为保证霍尔芯片的安全性和稳定性，不建议长期超出参数范围使用。



封装信息

T0-94

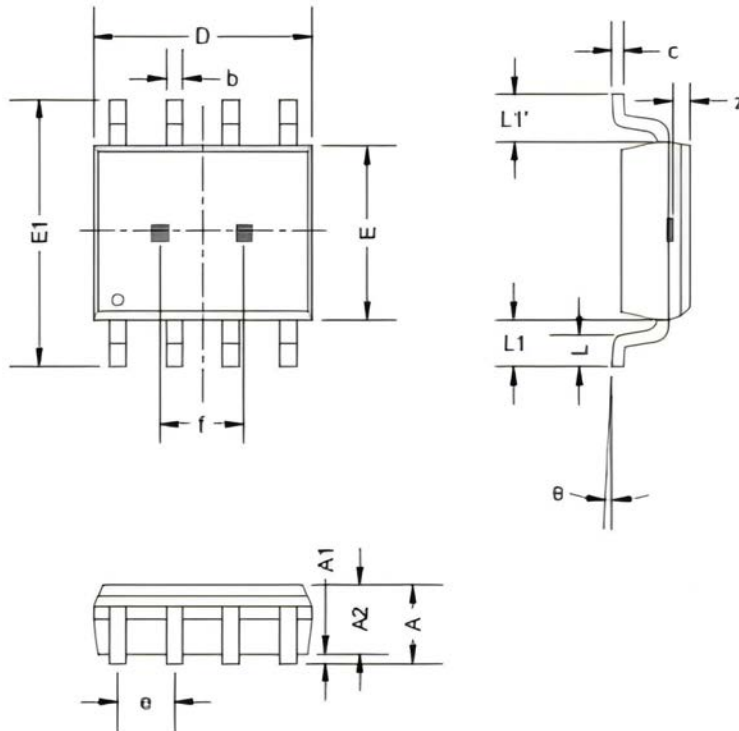


符号	尺寸 (毫米)		尺寸 (英寸)	
	最小值	最大值	最小值	最大值
A	1.420	1.660	0.056	0.065
A1	0.660	0.860	0.026	0.034
b	0.350	0.480	0.014	0.019
b1	0.400	0.650	0.016	0.026
c	0.360	0.510	0.014	0.020
D	5.100	5.300	0.201	0.208
D1	4.100	4.300	0.161	0.169
E	3.550	3.750	0.140	0.147
e	1.267	1.273	0.050	0.050
e1	3.780	3.840	0.149	0.151
L	13.500	15.500	0.531	0.610
f	1.390	1.410	0.055	0.056
x	1.800	2.000	0.071	0.079
z	0.500TYP		0.020TYP	
θ	10°	12°	10°	12°



封装信息

SOP-8



符号	尺寸(毫米)		尺寸(英寸)	
	最小值	最大值	最小值	最大值
A	1.350	1.750	0.530	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		1.270 (BSC)	
E	3.800	4.000	0.228	0.224
E1	5.800	6.200	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°



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