



产品介绍

AH701 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。

AH701 分为 T0-94 和 SOP-8 两种封装形式，且符合 RoHS 标准。

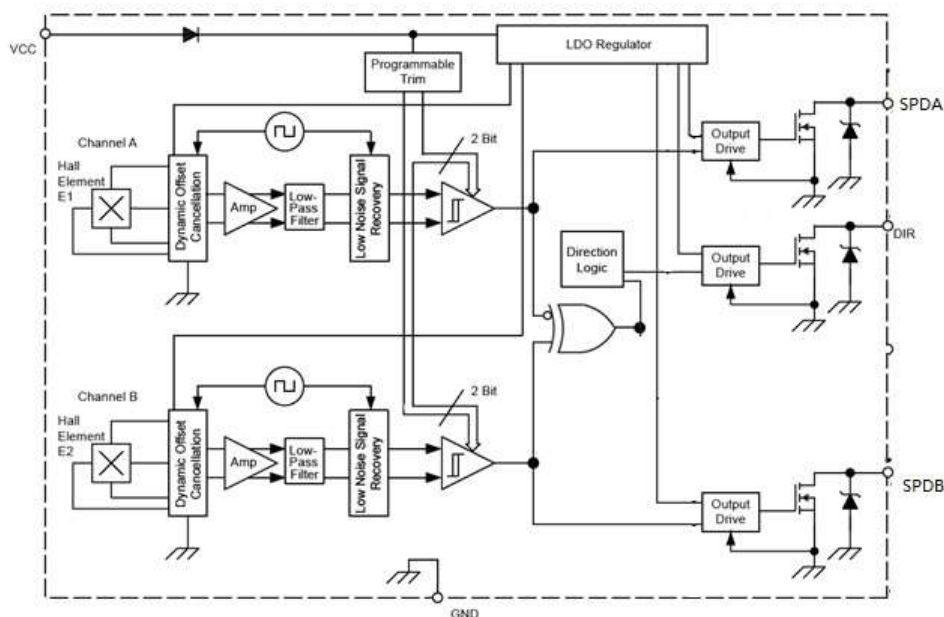
功能

- 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=75Gs，BRP=-75Gs
- 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



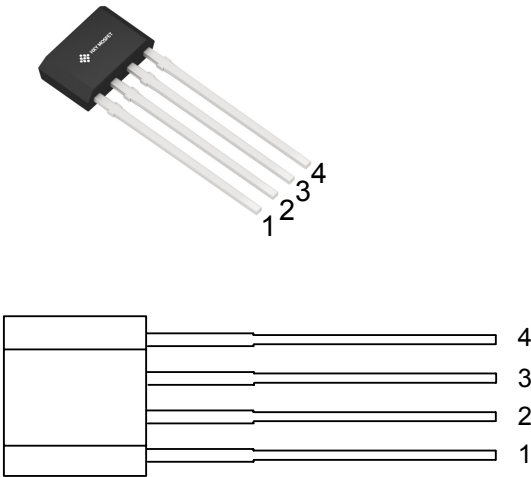


产品包装

产品型号	封装形式	灵敏度	成品包装
AH701-T	T0-94	± 75Gs	1000/袋
AH701-S	SOP-8	± 75Gs	100/管

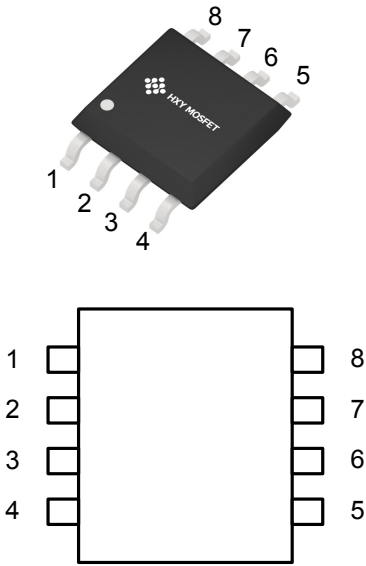
T0-94

编号	名称	描述
1	V _{CC}	电源
2	DIR	方向
3	SPD	速度
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，但是如果一定时间内超过该值，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}	-0.5	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：VCC=5.0V，TA=25°C

参数	符号	测试条件	最小值	典型值	最大值	单位
工作电压	Vcc	Operating	3.8	5	30	V
工作电流	I_s	B<Brp		8		mA
饱和电压	V_{SAT}	B=250Gs, $R_L=10Kohms$			0.4	V
输出漏电流	I_{off}	B<Brp, $V_{out}=24V$		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	Bop	$T_A=25^{\circ}C$	15	75	110	Gs
释放点	Brp	$T_A=25^{\circ}C$	-110	-75	-15	Gs
回差	Bhys	$T_A=25degC$, $B_{hys}=B_{op}-B_{rp}$		150		Gs
两个霍尔距离	Dis			1.63		mm

磁参数定义

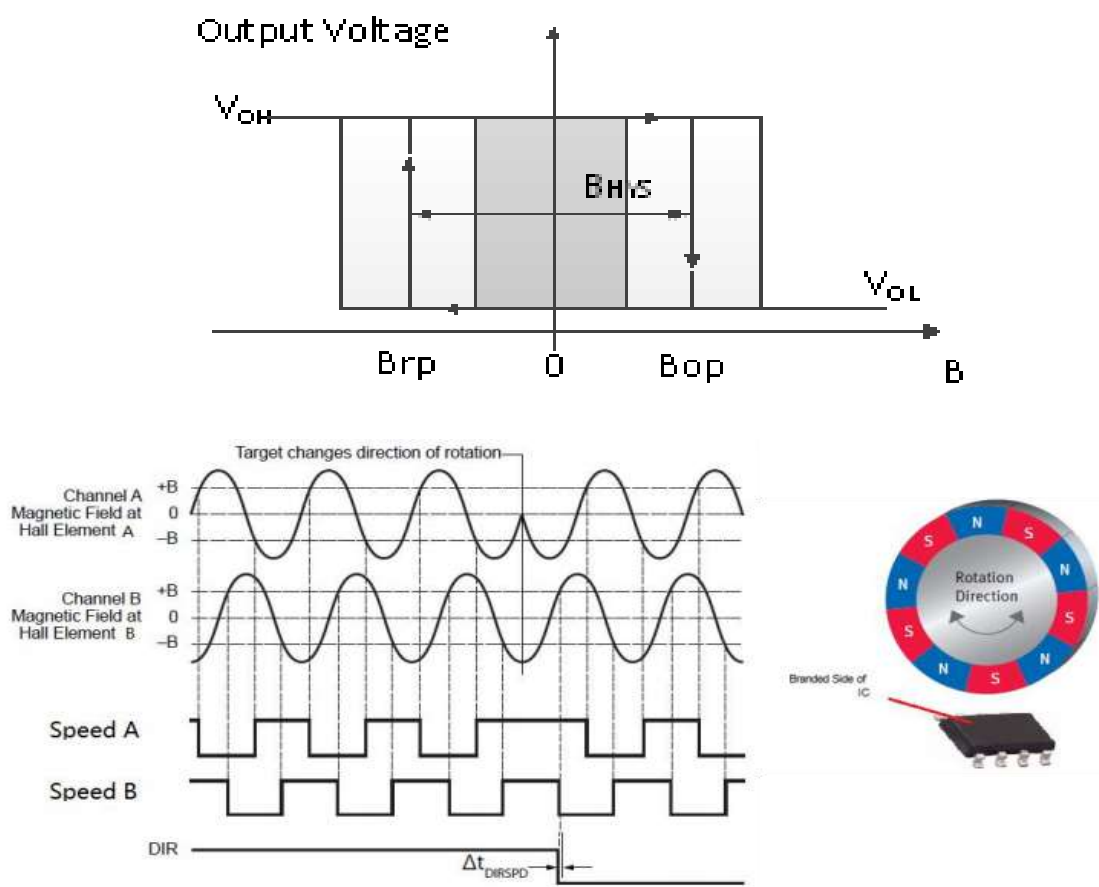
BOP：工作点，在封装标记面施加磁通密度，输出驱动器开 (V_{OUT} =低)

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)

BHYST：滞回窗口 |BOP-BRP|

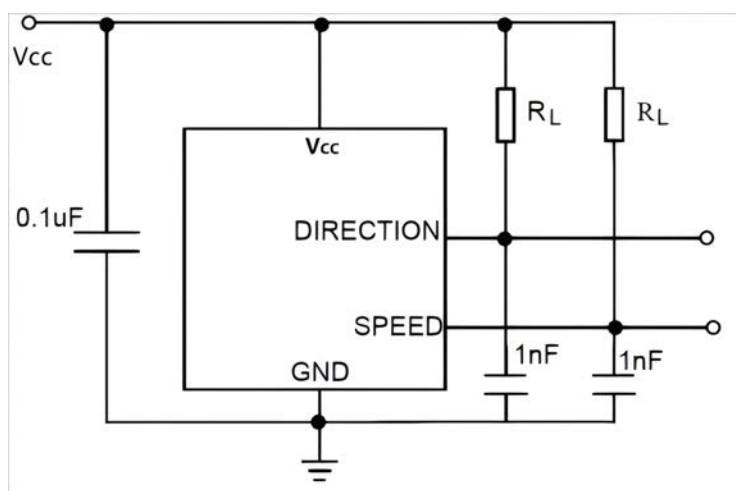


输出特性



应用电路

注意: R_L 推荐 1Kohm~10Kohm





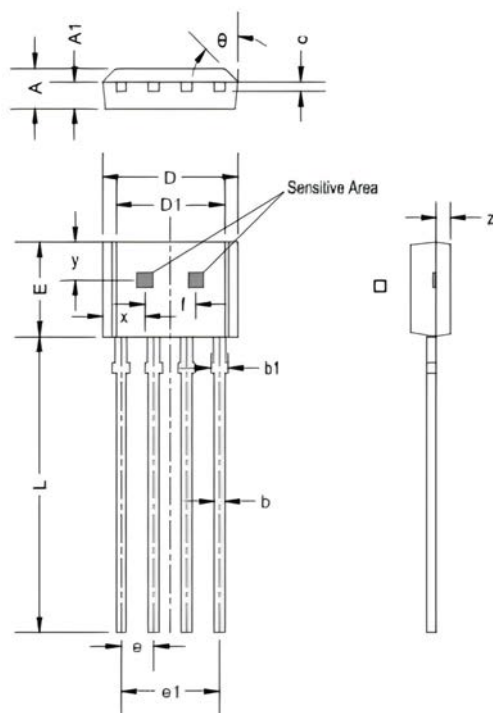
注意事项

- 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℃，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

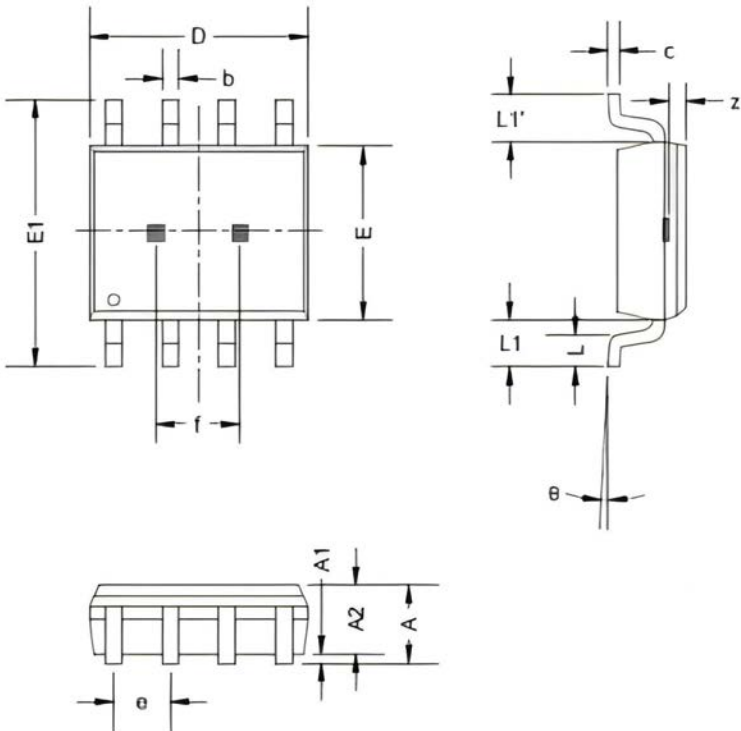


符号	尺寸（毫米）		尺寸（英寸）	
	最小值	最大值	最小值	最大值
A	1.420	1.660	0.056	0.065
A1	0.660	0.860	0.026	0.034
b	0.350	0.480	0.014	0.019
b1	0.400	0.650	0.016	0.026
c	0.360	0.510	0.014	0.020
D	5.100	5.300	0.201	0.208
D1	4.100	4.300	0.161	0.169
E	3.550	3.750	0.140	0.147
e	1.267	1.273	0.050	0.050
e1	3.780	3.840	0.149	0.151
L	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°



Attention

- Any and all HUA XUAN YANG ELECTRONICS products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your HUA XUAN YANG ELECTRONICS representative nearest you before using any HUA XUAN YANG ELECTRONICS products described or contained herein in such applications.
- HUA XUAN YANG ELECTRONICS assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein.
- Specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- HUA XUAN YANG ELECTRONICS CO.,LTD. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all HUA XUAN YANG ELECTRONICS products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of HUA XUAN YANG ELECTRONICS CO.,LTD.
- Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. HUA XUAN YANG ELECTRONICS believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the HUA XUAN YANG ELECTRONICS product that you intend to use.