

# AHS

## P2A Hall Sensor (200V/AT)

The P2A Hall Sensor is characterised, like all AHS products, by excellent sensitivity and low temperature co-efficients. Input / output resistances have been designed to be consistent with other commercially available devices making performance enhancement through adoption of the P2A straightforward.

The P2A Hall Sensor is fabricated from an AlGaAs/InGaAs/GaAs-2DEG (two-dimensional electron gas) heterostructure.

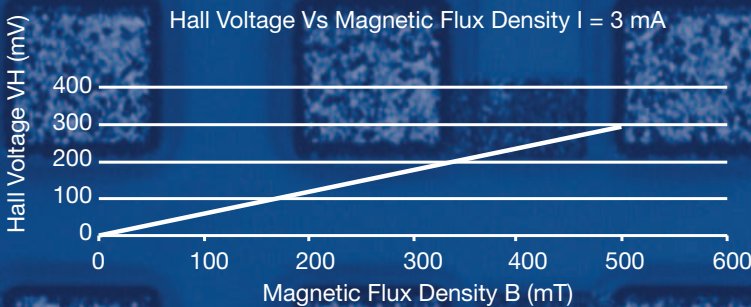
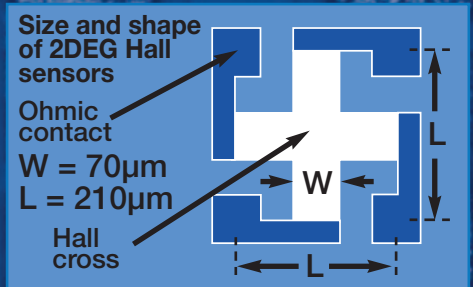
# AHS

### Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Control Voltage	Vc	6	V
Control Current	Ic	8	mA
Power Dissipation	PD	47	mW
Operating Temperature	Top	-100 to +180	°C
Storage Temperature	Ts	-100 to +180	°C
Soldering Temperature	Tsol	260	°C

### Electrical Characteristics

Parameter	Symbol	Test Condition	MIN	TYP	MAX	Unit
Output Hall Voltage	V <sub>H</sub>	Ic=1mA, B=100mT	-	20	-	mV
Residual Ratio* <sup>1</sup>	V <sub>H0</sub> /H	Ic=1mA	-10	-	+10	%
Residual Ratio* <sup>1</sup>	V <sub>H0</sub> /H	Ic=0.5mA	-4	-	+4	%
Input Resistance	R <sub>IN</sub>	Ic=0.1mA, B=0 mT	700	740	780	KΩ
Output Resistance	R <sub>OUT</sub>	Ic=0.1mA, B=0 mT	700	740	780	KΩ
Temperature Coefficient of Hall Voltage* <sup>2</sup>	α	Ic=1mA, B=100mT (T1= -100°C, T2=180°C)	-0.05	-0.08	-0.1	%/ °C
Temperature Coefficient of Input Resistance* <sup>3</sup>	β	Ic=1mA, B=0 mT (T1= -100°C, T2=180°C)	-	0.3	0.4	%/ °C
Linearity of Hall Voltage* <sup>4</sup>	γ	Ic= 1mA, B1=60mT, B2=500mT	-	1	1.5	%



$$*1. \text{ Residual Ratio} = \frac{V_{H0}(B = 0mT)}{V_H(B = 100mT)}$$

$$*2. \alpha = \frac{1}{V_H(T_1)} \times \frac{V_H(T_2) - V_H(T_1)}{T_2 - T_1} \times 100$$

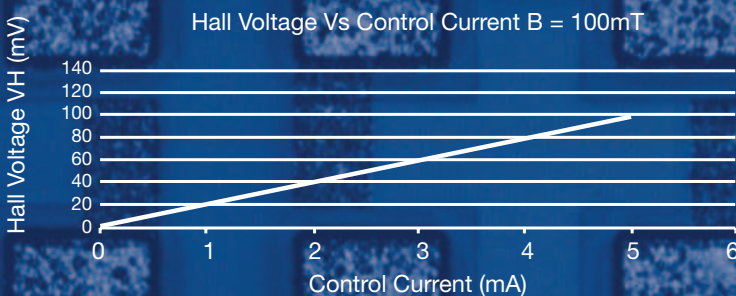
$$*3. \beta = \frac{1}{R_{IN}(T_1)} \times \frac{R_{IN}(T_2) - R_{IN}(T_1)}{T_2 - T_1} \times 100$$

$$*4. \gamma = \frac{K_H(B_2) - K_H(B_1)}{\frac{1}{2}[K_H(B_1) + K_H(B_2)]} \times 100$$

$$K_H = \frac{V_H}{IB}$$

V<sub>H0</sub>: Offset Voltage      B: Magnetic Flux Density

T<sub>1</sub>, T<sub>2</sub>: Ambient Temperature      K<sub>H</sub>: Current Sensitivity

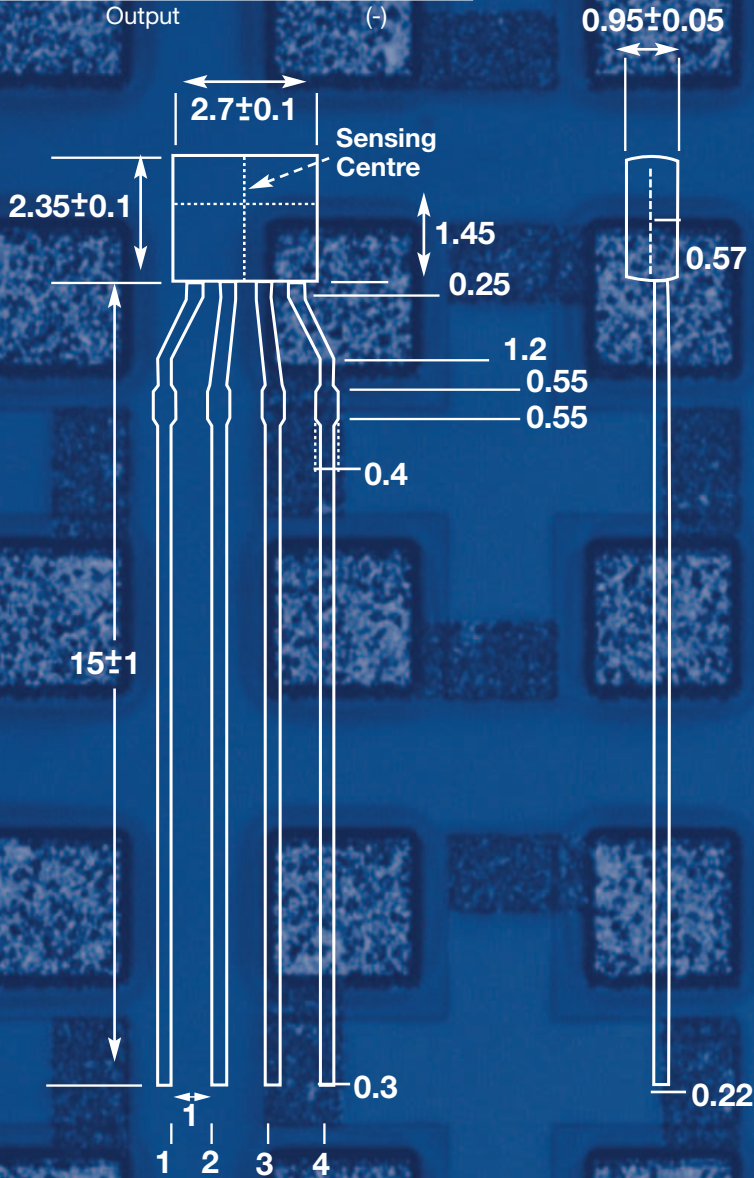




## Through Slot Ledged Package (dimensions in mm)

### Terminal Connection

Terminal Number		Polarity
1	Input	(+)
2	Output	(+)
3	Input	(-)
4	Output	(-)



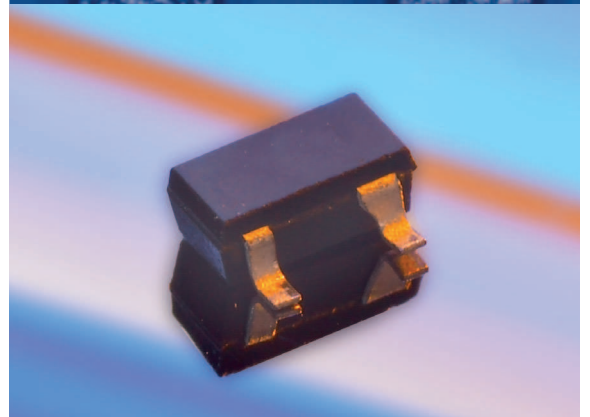
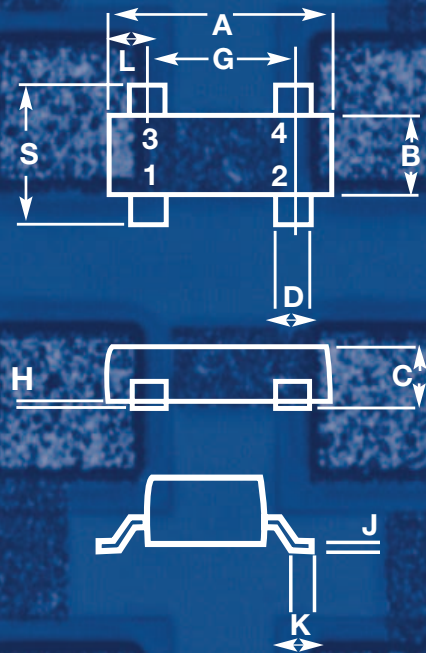
## SOT 143 Package (dimensions in mm)

### Terminal Connection

Terminal Number		Polarity
1	Input	(+)
2	Output	(-)
3	Output	(+)
4	Input	(-)

### Package Dimensions

	Min	Max
A	2.8	3.0
B	1.4	1.6
C	1.0	1.3
D	0.42	0.42
G	1.9	1.9
H	0	0.1
J	0.15	0.15
K	0.35	0.35
L	0.5	0.5
S	2.7	3.1



Advanced Hall Sensors Ltd.

Il Palazzo, 7 Water Street, Liverpool L2 ORD Tel: +44(0)1513 303 630 Web: www.ahsltd.com