



AHS

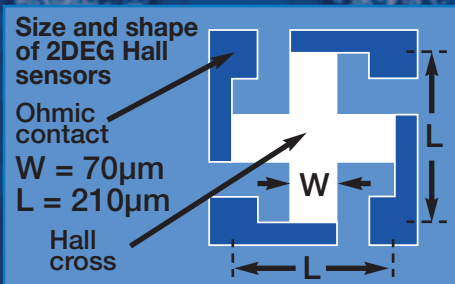
P15A Hall Sensor (1000V/AT)

The P15A Hall Sensor is outstanding for its ultra-high sensitivity and its low temperature coefficients.

The P15A Hall Sensor is fabricated from an AlGaAs/InGaAs/GaAs 2 - DEG (two dimensional electron gas) heterostructure.

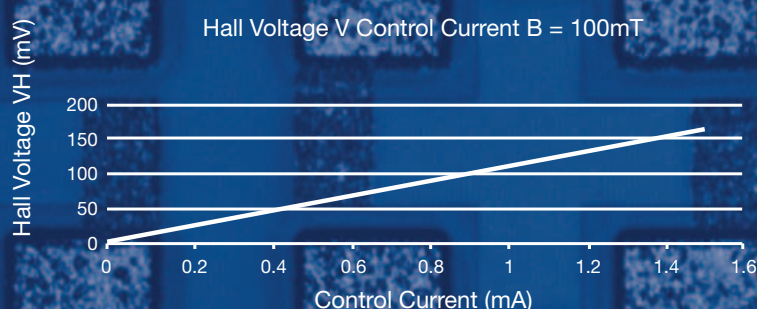
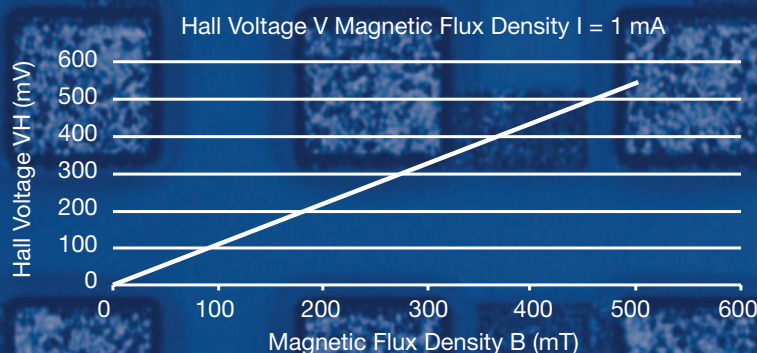
Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Control Voltage	V_c	6	V
Control Current	I_c	1.6	mA
Power Dissipation	PD	9	mW
Operating Temperature	T_{op}	-100 to +180	°C
Storage Temperature	T_s	-100 to +180	°C
Soldering Temperature	T_{sol}	260	°C



Electrical Characteristics

Parameter	Symbol	Test Condition	MIN	TYP	MAX	Unit
Output Hall Voltage	V_H	$I_c=1\text{mA}$, $B=100\text{mT}$	-	100	-	mV
Residual Ratio ^{*1}	V_{HO}/H	$I_c=1\text{mA}$	-10	-	+10	%
Residual Ratio ^{*1}	V_{HO}/H	$I_c=0.5\text{mA}$	-4	-	+4	%
Input Resistance	R_{IN}	$I_c=0.1\text{mA}$, $B=0\text{mT}$	3.4	3.7	4.1	KΩ
Output Resistance	R_{OUT}	$I_c=0.1\text{mA}$, $B=0\text{mT}$	3.4	3.7	4.1	KΩ
Temperature Coefficient of Hall Voltage ^{*2}	α	$I_c=1\text{mA}$, $B=100\text{mT}$ ($T_1 = -100^\circ\text{C}$, $T_2 = 180^\circ\text{C}$)	-0.05	-0.08	-0.13	%/°C
Temperature Coefficient of Input Resistance ^{*3}	β	$I_c=1\text{mA}$, $B=0\text{mT}$ ($T_1 = -100^\circ\text{C}$, $T_2 = 180^\circ\text{C}$)	-	0.3	0.4	%/°C
Linearity of Hall Voltage ^{*4}	γ	$I_c=1\text{mA}$, $B_1=60\text{mT}$, $B_2=500\text{mT}$	-	1	1.5	%



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

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

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

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

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

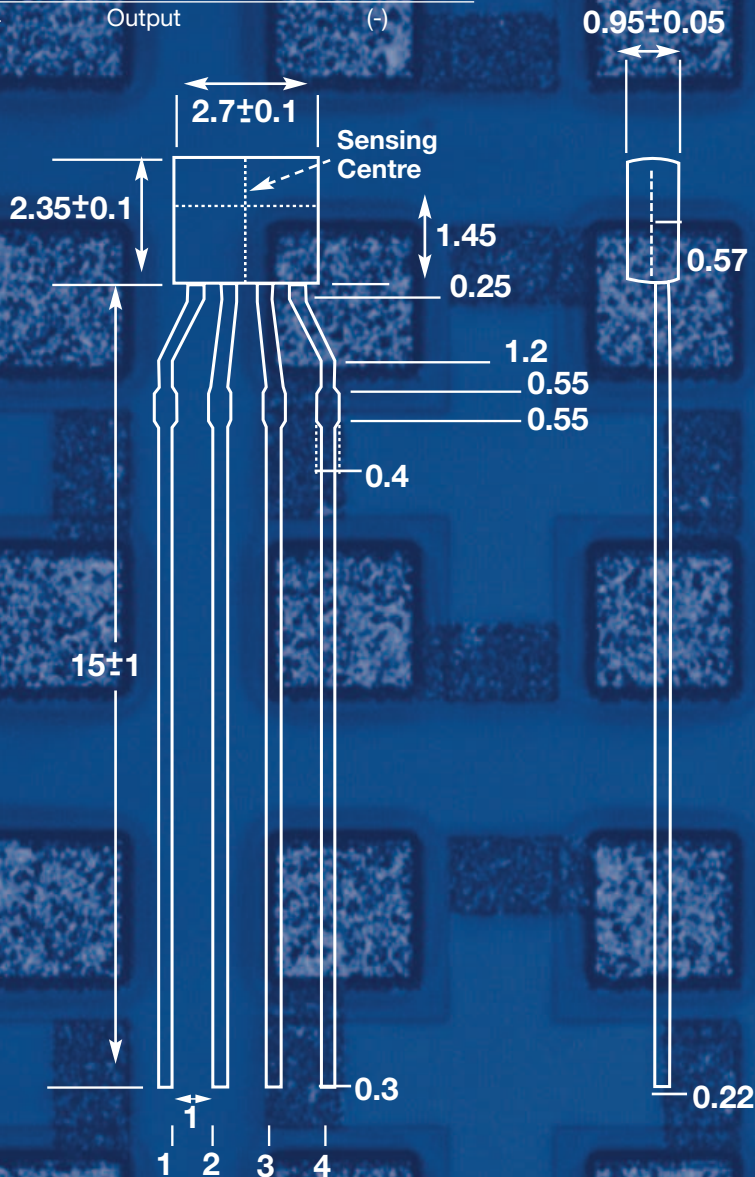
V_{HO} : Offset Voltage B : Magnetic Flux Density

T_1, T_2 : Ambient Temperature K_H : Current Sensitivity

Through Slot Leaded Package (dimensions in mm)

Terminal Connection

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



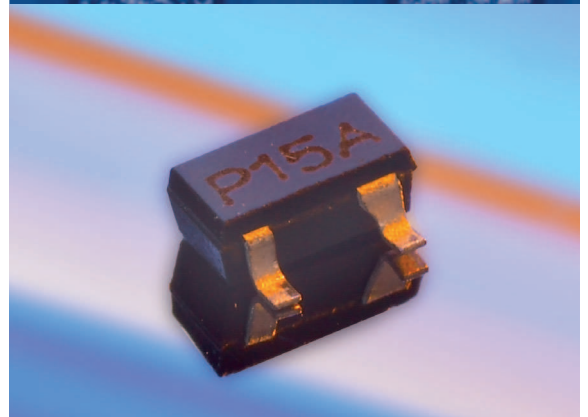
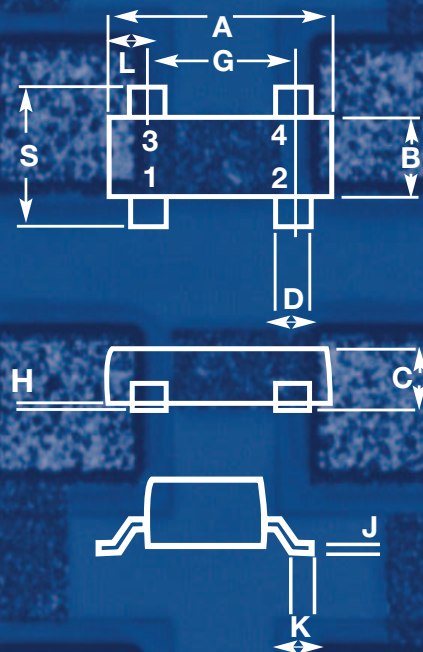
SOT 143 Package (dimensions in mm)

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



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