

OH007

GaAs Hall Element

Magnetic Sensor

■ Features

- Hall voltage: typ. 110mV ($V_C=6V$, $B=1kG$)
- Input resistance: typ. 750 Ω
- Good linearity of Hall voltage to magnetic field
- Small temperature coefficient of Hall voltage: $\beta \leq -0.06\%/^{\circ}C$
- Being packed in Mini type package (4-pin), automatic insertion using taping and magazine packaging is possible.

■ Applications

- Various Hall motors (Video camera, portable type apparatus)
- Automobile apparatus
- Measuring apparatus
- Wide application (OA apparatus etc.) is possible

■ Absolute Maximum Ratings ($T_a=25^{\circ}C$)

Item	Symbol	Value	Unit
Control Voltage	V_C	12	V
Power Dissipation	P_D	150	mW
Operating Ambient Temperature	T_{opr}	-55 ~ +125	$^{\circ}C$
Storage Temperature	T_{stg}	-55 ~ +125	$^{\circ}C$

■ Electrical Characteristics ($T_a=25^{\circ}C$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Hall Voltage	V_H^{*1}	$V_C=6V$, $B=1kG$	80	105	130	mV
Unequilibrium Voltage	$V_{HO}^{*2,4}$	$V_C=6V$, $B=0$			± 19	mV
Input Resistance	R_{IN}	$I_C=1mA$, $B=0$	0.5	0.75		k Ω
Output Resistance	R_{OUT}	$I_C=1mA$, $B=0$		1.7	5	k Ω
Temperature Coefficient of Hall Voltage	β	$I_C=6mA$, $B=1kG$			-0.06	%/ $^{\circ}C$
Temperature Coefficient of Input Resistance	α	$I_C=1mA$, $B=0$			0.3	%/ $^{\circ}C$
Linearity of Hall Voltage	γ^{*3}	$I_C=6mA$, $B=1kG/5kG$			2	%

$$*1 V_H = \frac{|V_H^+| + |V_H^-|}{2}$$

*2 Output End Voltage at the no-load, $B=0$

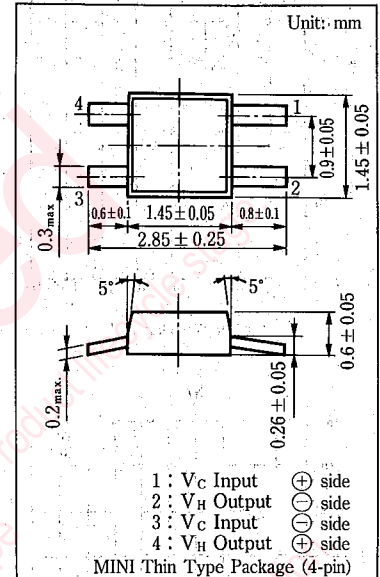
*3 Linearity γ of V_H is percentage to mean value of difference between k_H , and k_{H5} which are accumulated sensibility measured by

$$\gamma = \frac{K_{H5} - K_{H1}}{\frac{1}{2}(K_{H1} + K_{H5})} \quad (\text{accumulated sensibility } K_H = \frac{V_H}{I_C \cdot B})$$

*4 V_{HO} Classifications

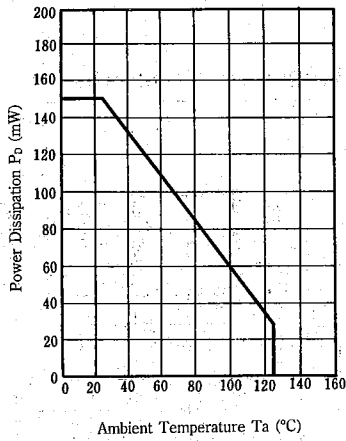
Class	A	B	C	D	E
$V_{HO}(mV)$	+19 ~ +9	+12 ~ +2	+5 ~ -5	-2 ~ -12	-9 ~ -19

■ Package Dimensions

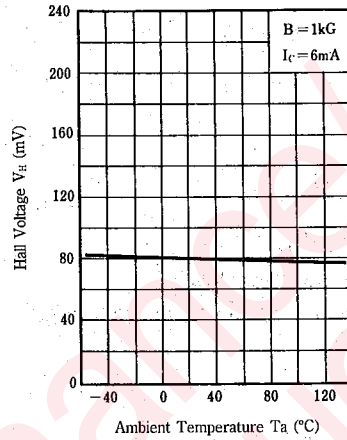


Marking Symbol : A

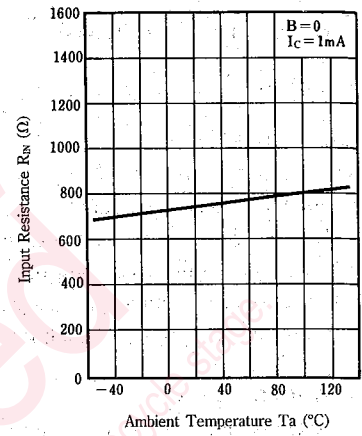
$P_D - T_a$



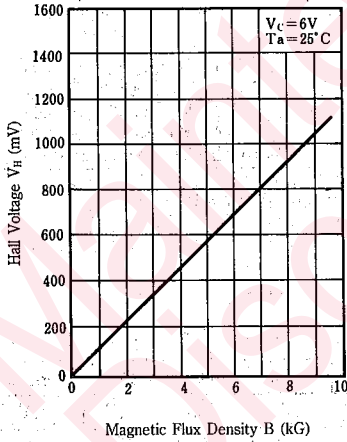
$V_H - T_a$



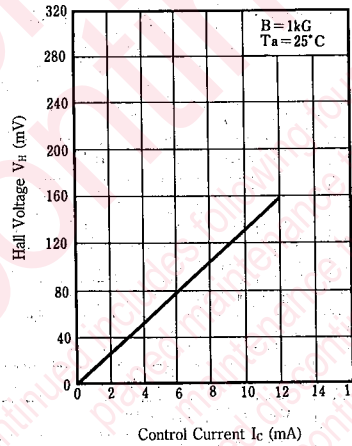
$R_{IN} - T_a$



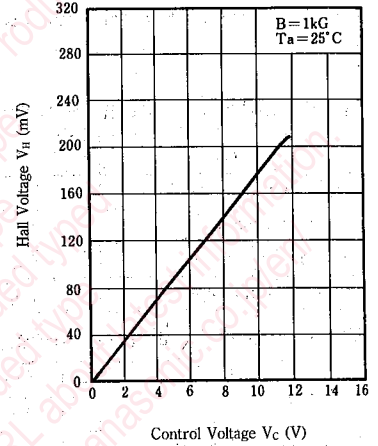
$V_H - B$



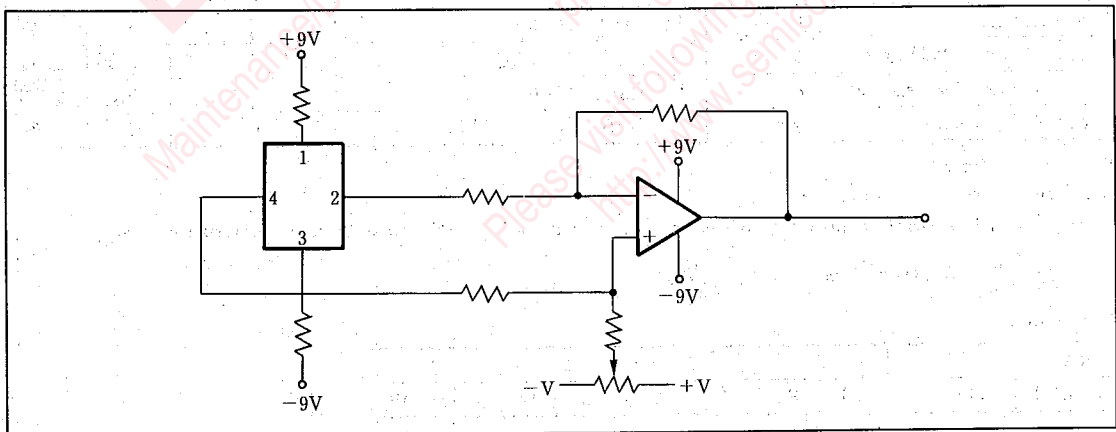
$V_H - I_c$



$V_H - V_c$



■ Drive Circuit (Ex.)



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