

# OH014

## GaAs Hall Element

### Magnetic Sensor

#### ■ Features

- Hall voltage: min. 195mV ( $V_C=6V$ ,  $B=1kG$ )
- Good linearity of Hall voltage to magnetic field
- Small temperature coefficient of Hall voltage:  $\beta = -0.06\%/^{\circ}C$  (typ.)
- Being packed in Mini thick type package (4-pin) with projection for fixing position, automatic insertion using magazine packaging is possible

#### ■ Applications

- Various Hall motors (Cylinder motor, capstan motor, player etc.)
- Measuring apparatus
- No-contact sensor
- High reliability and wide application

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

Item	Symbol	Value	Unit
Control Voltage	$V_C$	8	V
Power Dissipation	$P_D$	150	mW
Operating Ambient Temperature	$T_{opr}$	$-55 \sim +125$	$^{\circ}C$
Storage Temperature	$T_{stg}$	$-55 \sim +125$	$^{\circ}C$

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

Item	Symbol	Condition	min.	typ.	max.	Unit
Hall Voltage	$V_H^{*1}$	$V_C=6V$ , $B=1kG$	195			mV
Unequilibrium Voltage	$V_{HO}^{*2}$	$V_C=6V$ , $B=0G$			$\pm 20$	mV
Input Resistance	$R_{IN}$	$I_C=1mA$ , $B=0G$	0.5			k $\Omega$
Output Resistance	$R_{OUT}$	$I_C=1mA$ , $B=0G$			5	k $\Omega$
Temperature Coefficient of Hall Voltage	$\beta$	$I_C=6mA$ , $B=1kG$		-0.06		$\%/^{\circ}C$
Temperature Coefficient of Input Resistance	$\alpha$	$I_C=1mA$ , $B=0G$			0.3	$\%/^{\circ}C$
Linearity of Hall Voltage	$\gamma^{*3}$	$I_C=6mA$ , $B=0.5kG/1kG$			2	%

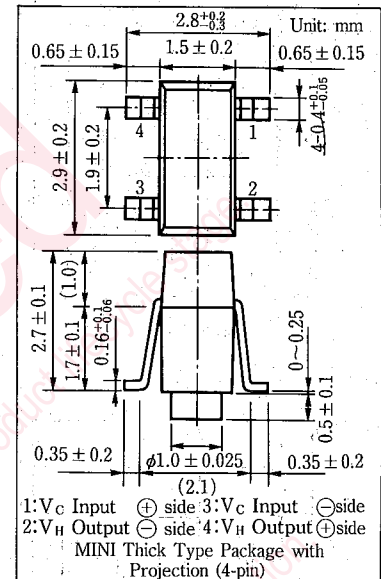
$$*1 V_H = \frac{|V_H^+| + |V_H^-|}{2}$$

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

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

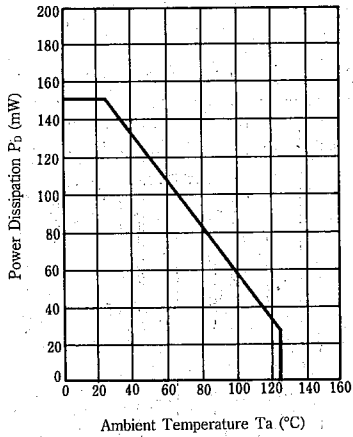
$$\gamma = \frac{K_{H1} - K_{H0.5}}{1/2(K_{H0.5} + K_{H1})} \quad (\text{accumulated sensibility } K_H = \frac{V_H}{I_C \cdot B})$$

#### ■ Package Dimensions

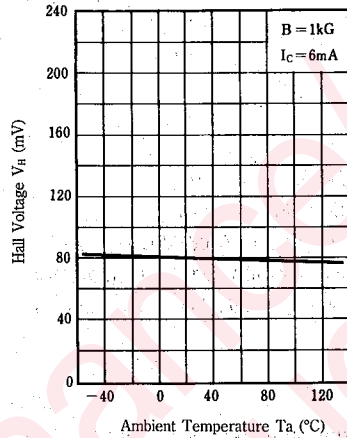


Marking Symbol : T

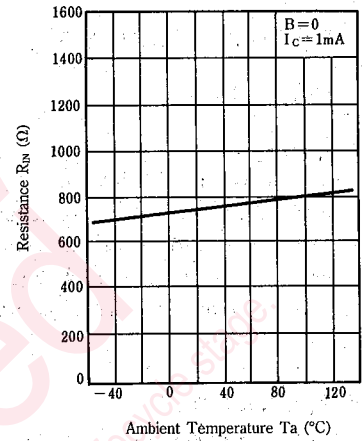
$P_D - T_a$



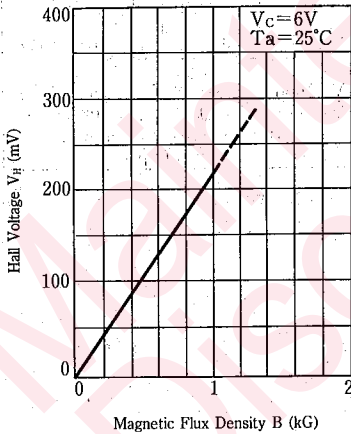
$V_H - T_a$



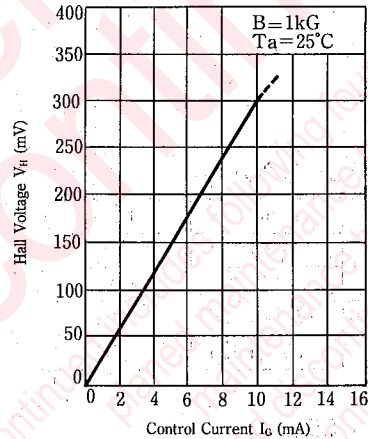
$R_{IN} - T_a$



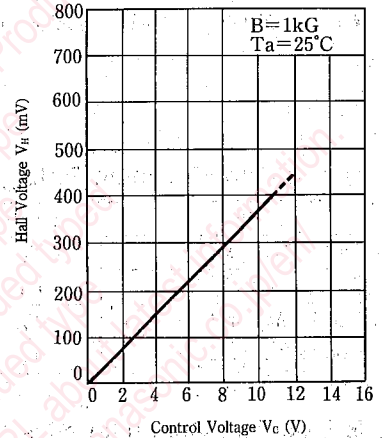
$V_H - B$



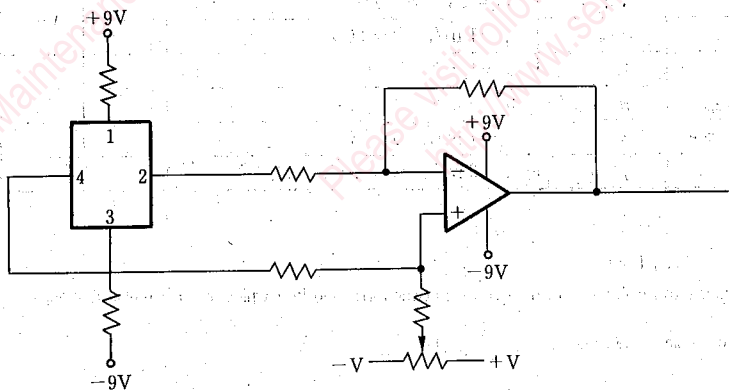
$V_H - I_C$



$V_H - V_C$



■ Drive Circuit (Ex.)



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