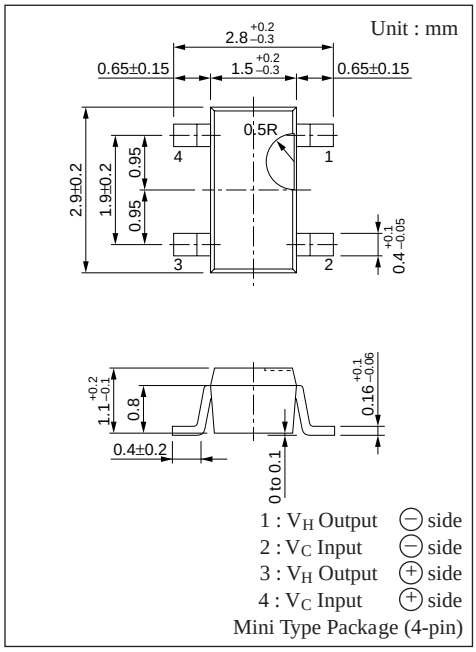
# OH023

## GaAs hall element

Magnetic sensor




Marking Symbol : OT

## ■ Features

- Hall voltage : typ. 90mV($V_C$= 3V, B= 0.1T)
- Input resistance : typ. 2kΩ(min. 1.5kΩ)
- Output resistance : typ. 7kΩ(max. 10kΩ)
- Sealed in the Mini type (4-pin) package. Automatic insertion through taping and magazine.

## ■ Applications

- Various hall motor
  (Applicable to CD, VD, VCR, FDD, and other portable equipment)
- Applicable to wide-varying field (OA equipment, etc.)

## ■ Absolute Maximum Ratings (Ta= 25˚C)

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Control voltage | $V_C$ | 6 | V |
| Power dissipation | $P_D$ | 150 | mW |
| Operating ambient temperature | $T_{opr}$ | –10 to +125 | ˚C |
| Storage temperature | $T_{stg}$ | – 55 to +125 | ˚C |

## ■ Electrical Characteristics (Ta= 25˚C)

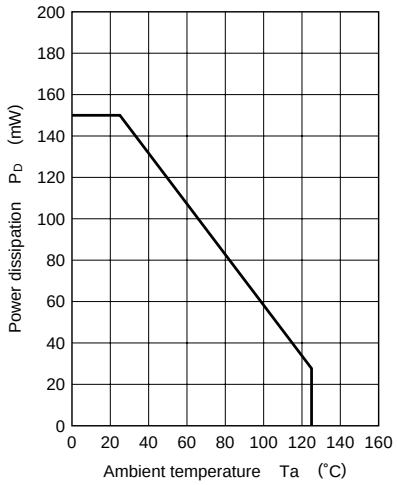
| Parameter | Symbol | Condition | min | typ | max | Unit |
|---|---|---|---|---|---|---|
| Hall voltage | $V_H$*1 | $V_C$= 3V, B= 0.1T | 70 | 90 | 110 | mV |
| Unbalance voltage | $V_{HO}$ | $V_C$= 3V, B= 0T | | | ±9.5 | mV |
| Input Resistance | $R_{IN}$ | $I_C$= 0.1mA, B= 0T | 1.5 | 2 | 3 | kΩ |
| Output resistance | $R_{OUT}$ | $I_C$= 0.1mA, B= 0T | 5 | 7 | 10 | kΩ |
| Temperature coefficient of hall voltage | β | $I_C$=1.5mA, B= 0.1T | | | – 0.06 | %/˚C |
| Temperature coefficient of input resistance | α | $I_C$= 0.1mA, B= 0T | | | 0.3 | %/˚C |
| Linearity of hall voltage | γ *2 | $I_C$=1mA, B= 0.05T/0.1T | | | 2 | % |

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

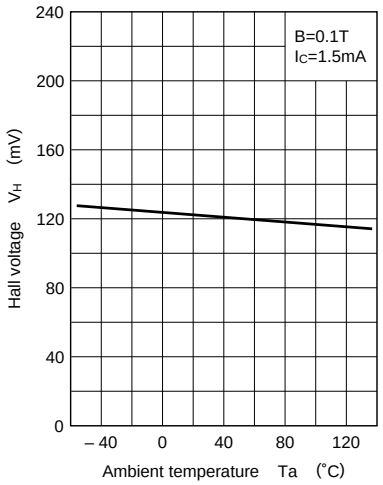
*2 The linearity γ of $V_H$ is a percentage of the cumulative sensitivity of $K_{H0.05}$ and $K_{H0.1}$ measured at B= 0.05T and 0.1T for the average value.

$$\gamma = \frac{K_{H0.1} - K_{H0.05}}{1/2\,(K_{H0.05} + K_{H0.1})} \quad \left( \text{Percentage of the cumulative sensitivity } K_H = \frac{V_H}{I_C \cdot B} \right)$$

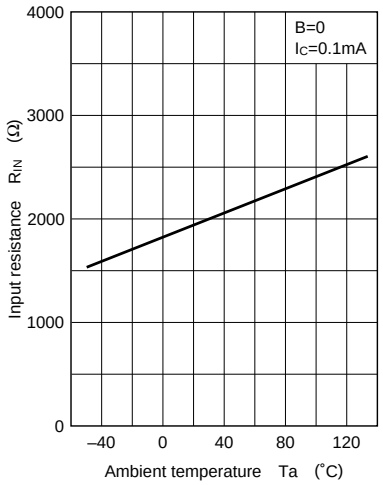
$P_D$ – Ta



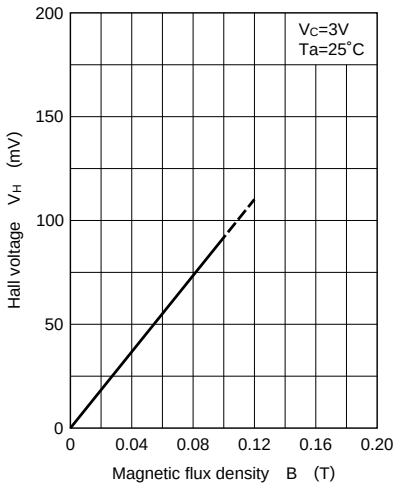

$V_H$ – Ta



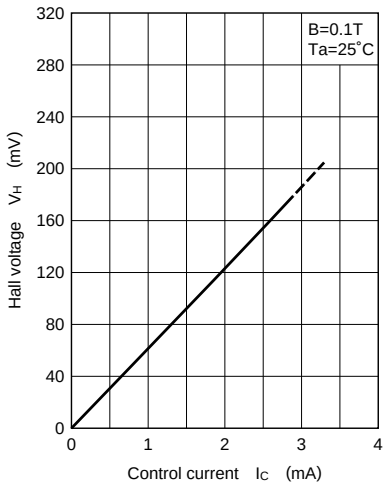

$R_{IN}$ – Ta



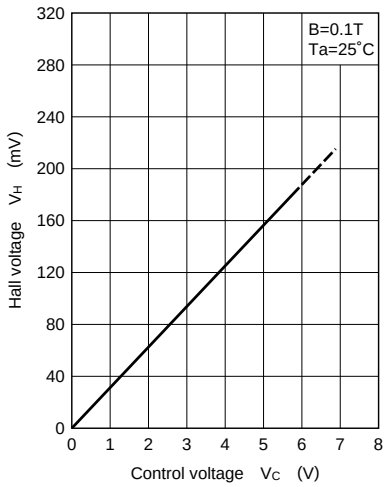

$V_H$ – B




$V_H$ – $I_C$




$V_H$ – $V_C$




## ■ Typical Drive Circuit

