

MG1A01 GaAs Hall

MG1A01 砷化镓霍尔元件

- Linear GaAs Hall Element

线性砷化镓霍尔元件

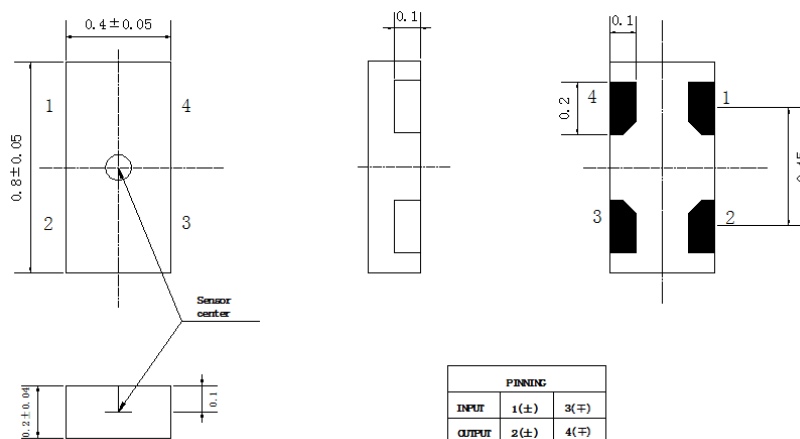
- Excellent Thermal Characteristics

卓越的热稳定特性

- Thin-type DFN Package

超薄 DFN 封装

- **外形尺寸图 Dimensional Drawing (Unit MM)**



Sensing center diameter $\Phi = 0.3$ mm

- **最大额定值 Absolute Maximum Rating**

Operating Temperature Range $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$

工作温度

Storage Temperature Range $-40^{\circ}\text{C} \sim 150^{\circ}\text{C}$

存储温度

Maximum Input Voltage V_c [V] 9.5V

最大输入电压 V_c [V]

Maximum Input Power P_0 [mW] 105mW

最大输入功率

- **电气特性 (室温 25°C) Electrical Characteristics ($\text{RT}=25^{\circ}\text{C}$)**

Copy Right Reserved

JZWI-DS-001 Version 1.2

Matrixopto.Co.,Ltd is the owner of the trademarks used in this document, which has the exclusive right to prevent any third parties not having the owner's consent from using in the course of trade identical or similar signs for goods or services where such use would result in a likelihood of confusion.

Table 1. Electrical Characteristics of MG1A01.

表 1. MG1A01 电气特性

项目 Item	符号 Symbol	测量条件 Test Condi.	最小 Min.	标准 Typ.	最大 Max.	单位 Unit
霍尔电压 Hall Voltage	V_H	$B = 50\text{mT}, V_C = 6\text{V}$ $T_a = \text{RT}$	55		75	mV
输入电阻 Input Resistance	R_{in}	$B = 0\text{mT}, I_c = 0.1\text{mA}$ $T_a = \text{RT}$	650		850	Ω
输出电阻 Output Resistance	R_{out}	$B = 0\text{mT}, I_c = 0.1\text{mA}$ $T_a = \text{RT}$	650		850	Ω
非平衡电压 Offset Voltage	V_{os}	$B = 0\text{mT}, V_C = 6\text{V}$ $T_a = \text{RT}$	-5		+5	mV
输出电压温度系数 Temp. Coeffi. of V_H	$ \alpha V_H $	$B = 50\text{mT}, I_c = 5\text{mA}$, $T_a = 25^\circ\text{C} \sim 125^\circ\text{C}$			0.06	%/ $^\circ\text{C}$
输入电阻温度系数 Temp. Coeffi. of R_{in}	αR_{in}	$B = 0\text{mT}, I_c = 0.1\text{mA}$, $T_a = 25^\circ\text{C} \sim 125^\circ\text{C}$			0.3	%/ $^\circ\text{C}$
线性度 linearity	ΔK	$B = 0.1 \sim 0.5\text{T}$, $I_c = 5\text{mA}, T_a = \text{RT}$	-2		2	%

Note:

- $V_H = V_{H-M} - V_{os}$
 in which V_{H-M} is the Output Hall Voltage, V_H is the Hall Voltage and V_{os} is the offset Voltage under the identical electrical stimuli.
- $$\alpha V_H = \frac{1}{V_H(T_{a1})} \times \frac{V_H(T_{a2}) - V_H(T_{a1})}{T_{a2} - T_{a1}} \times 100$$

$$T_{a1} = 25^\circ\text{C}, \quad T_{a2} = 125^\circ\text{C}$$
- $$\alpha R_{in} = \frac{1}{R_{in}(T_{a1})} \times \frac{R_{in}(T_{a2}) - R_{in}(T_{a1})}{T_{a2} - T_{a1}} \times 100$$

$$T_{a1} = 25^\circ\text{C}, \quad T_{a2} = 125^\circ\text{C}$$
- $$\Delta K = \frac{K(B_1) - K(B_2)}{\frac{K(B_1) + K(B_2)}{2}} \times 100 \quad K = \frac{V_H}{I_c \times B}$$

● 特征曲线图 Characteristic Curves

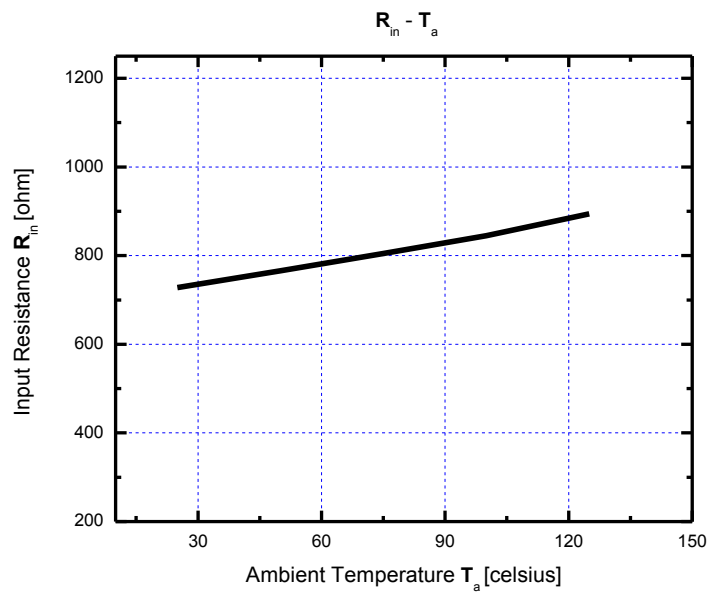


Figure 1. Input resistance R_{in} as a function of ambient temperature T_a .

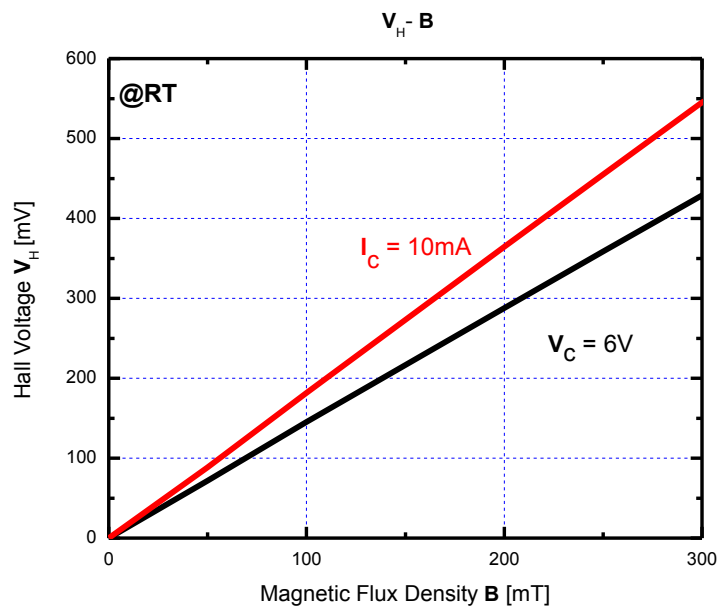


Figure 2. Hall voltage V_H as a function of magnetic flux density B .

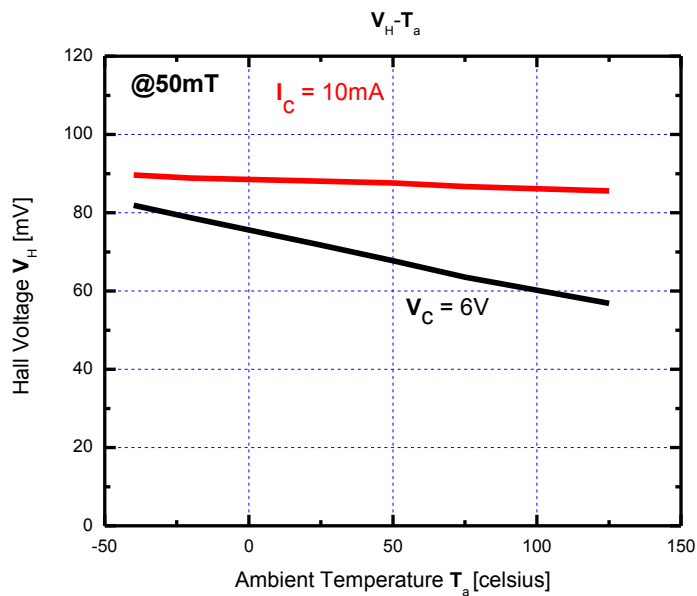


Figure 3. Hall voltage V_H as a function of ambient temperature T_a .

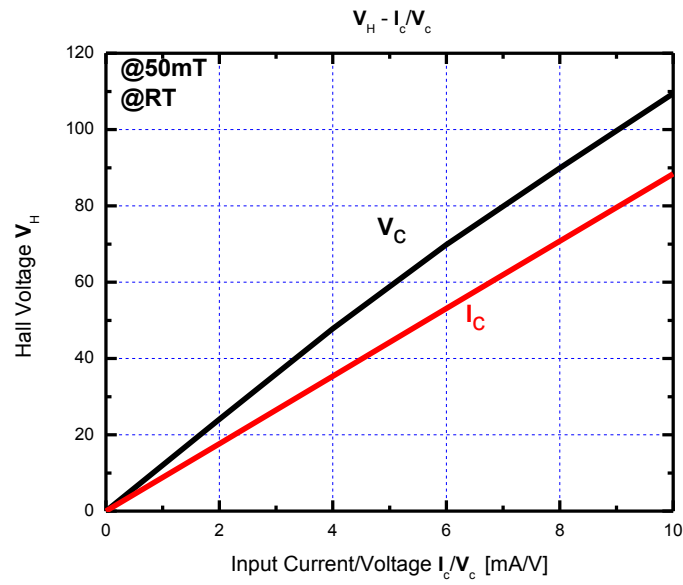


Figure 4. Hall voltage V_H as a function of electrical stimuli I_c/V_c .

● ESD 预防措施

本产品是对ESD（静电放电）敏感的设备。在以下环境中处理带有ESD警告标记的霍尔元件：

- 不太可能出现静电荷的环境（例如：相对湿度超过40%RH）。
- 处理器件时佩戴防静电服和腕带
- 对于直接接触器件的容器建议实施ESD防护措施。

● 存储注意事项

- 在开封MBB后，产品应在适当的温度和湿度（5至35°C，40至60%RH）下储存。强烈建议使用自密封袋，使产品远离氯气和腐蚀性气体。

- 长期储存

产品用MBB密封

-**对于超过2年的储存**，建议在MBB密封的氮气中储存。大气中的水氧会导致器件引脚氧化，从而导致引脚焊接能力变差。

● 安全注意事项

-不要通过燃烧，粉碎或化学处理等方式将本产品变成气体，粉末或液体。

-丢弃本产品时，请遵守法律和公司规定。

● Precautions for ESD

This product is the device that is sensitive to ESD (Electrostatic Discharge). Handling Hall Elements with the ESD-Caution mark under the environment in which

- Static electrical charge is unlikely to arise. (Ex; Relative Humidity; over 40%RH).
- Wearing the antistatic suit and wristband when handling the devices.
- Implementing measures against ESD as for containers that directly touch the devices.

● Precautions for Storage

- Products should be stored at an appropriate temperature and humidity (5 to 35°C, 40 to 60%RH) after the unsealing of MBB. Keeping products away from chlorine and corrosive gas.

- Long-term storage

Products are sealed in MBB.

- **For storage longer than 2 years**, it is recommended to store in nitrogen atmosphere with MBB sealed. Oxygen and H₂O of atmosphere oxidizes leads of products and lead solder ability get worse.

● Precautions for Safety

- Do not alter the form of this product into a gas, powder or liquid through burning, crushing or chemical processing.
- Observe laws and company regulations when discarding this product.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Board Mount Hall Effect/Magnetic Sensors](#) category:

Click to view products by [Matrix Opto](#) manufacturer:

Other Similar products are found below :

[HGPRDT005A](#) [AH277AZ4-AG1](#) [AV-10448](#) [SS41C](#) [AH1894-Z-7](#) [TLE4917](#) [TLE4946-1L](#) [50017859-003](#) [TY-13101](#) [TLE4976L](#)
[A1308KUA-1-T](#) [SS85CA](#) [BU52002GUL-E2](#) [BU52003GUL-E2](#) [AH277AZ4-BG1](#) [TLE49614MXTSA1](#) [AH3382-P-B](#) [AH3377-P-B](#)
[AH211Z4-AG1](#) [AH3360-FT4-7](#) [TLE4941-1](#) [SS460S-100SAMPLE](#) [AH374-P-A](#) [TLE49595UFXHALA1](#) [SS460P-T2](#) [AH1913-W-7](#) [AH3373-](#)
[P-B](#) [TLE9852QXXUMA1](#) [MA732GQ-Z](#) [MA330GQ-Z](#) [TLE49421CHAMA2](#) [AH1903-FA-EVM](#) [AH8502-FDC-EVM](#) [TLE4998S3XALA1](#)
[TLE5011FUMA1](#) [TLE5027CE6747HAMA1](#) [TLE5109A16E1210XUMA1](#) [TLI4966GHTSA1](#) [TLI4906KHTSA1](#) [MA710GQ-P](#) [S-](#)
[57K1NBL2A-M3T2U](#) [S-57P1NBL9S-M3T4U](#) [S-576ZNL2B-L3T2U](#) [S-576ZNL2B-A6T8U](#) [S-57P1NBL0S-M3T4U](#) [S-57A1NSL1A-M3T2U](#)
[S-57K1RBL1A-M3T2U](#) [S-57P1NBH9S-M3T4U](#) [S-57P1NBH0S-M3T4U](#) [S-57A1NSH1A-M3T2U](#)