

MW601 InSb Hall Element

MW601 铟化铟霍尔元件

线性铟化铟霍尔元件

Linear InSb Hall Element

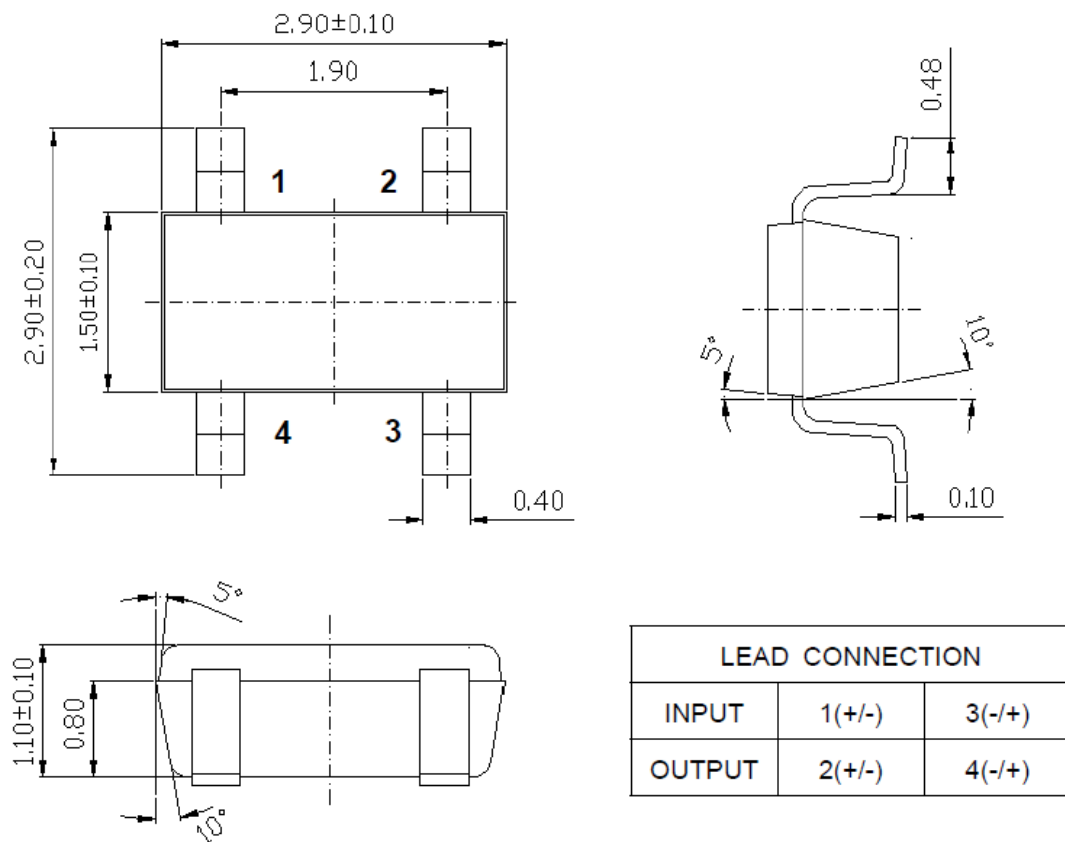
元件灵敏度等级高达 J 级

Extreme-sensitivity of InSb Hall Element reaches J-Rank

经典 SOT-4 类型封装

Classic SOT-4 Package

● 外形尺寸图 Dimensional Drawing (Unit MM)



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● 最大额定值 Absolute Maximum Rating

工作温度

Operating Temperature Range : -40°C ~ 110°C

存储温度

Storage Temperature Range : -40°C ~ 125°C

最大输入电流 I_{cmax} [mA]

Maximum Input Current I_{cmax} [mA] : 20mA

● 霍尔输出电压 Classification of Output Hall Voltage (V_H)

级别	霍尔输出电压	测试条件
Rank	VH/mV	Conditions
C	168 ~ 204	$B = 50mT, V_C=1V$
D	196 ~ 236	
E	228 ~ 274	
F	266 ~ 320	
G	310 ~ 370	
H	360 ~ 415	
I	405 ~ 465	
J	454 ~ 516	

● 电气特性 (测量温度 25°C) Electrical Characteristic (RT=25°C)

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表 1. MW601电气特性

Table 1. Electrical Characteristics of MW601

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 = 50mT, V _C =1V T _a = RT	168		516	mV
输入电阻 Input Resistance	R _{in}	B = 0mT, I _C = 0.1mA T _a = RT	240		550	Ω
输出电阻 Output Resistance	R _{out}	B = 0mT, I _C = 0.1mA T _a = RT	240		550	Ω
非平衡电压 Offset Voltage	V _{os}	B = 0mT, V _C = 1V T _a = RT	-5		+5	mV
输出电压温度系数 Temp. Coeffi. of V _H	αV _H	Average On T _a = 0°C ~ 40°C B = 50mT, I _C = 5mA,		-1.8		%/°C
输入电阻温度系数 Temp. Coeffi. of R _{in}	αR _{in}	Average On T _a = 0°C ~ 40°C B = 0mT, I _C = 0.1mA		-1.8		%/°C
介电强度 Dielectric strength		100V D.C	1.0			MΩ

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.

$$\alpha V_H = \frac{1}{V_H(T_1)} \times \frac{V_H(T_3) - V_H(T_2)}{(T_3 - T_2)} \times 100$$

$$\alpha R_m = \frac{1}{R_m(T_1)} \times \frac{R_m(T_3) - R_m(T_2)}{(T_3 - T_2)} \times 100$$

$$T_1 = 20^\circ\text{C}, T_2 = 0^\circ\text{C}, T_3 = 40^\circ\text{C}$$

● 特征曲线图 Characteristic Curves

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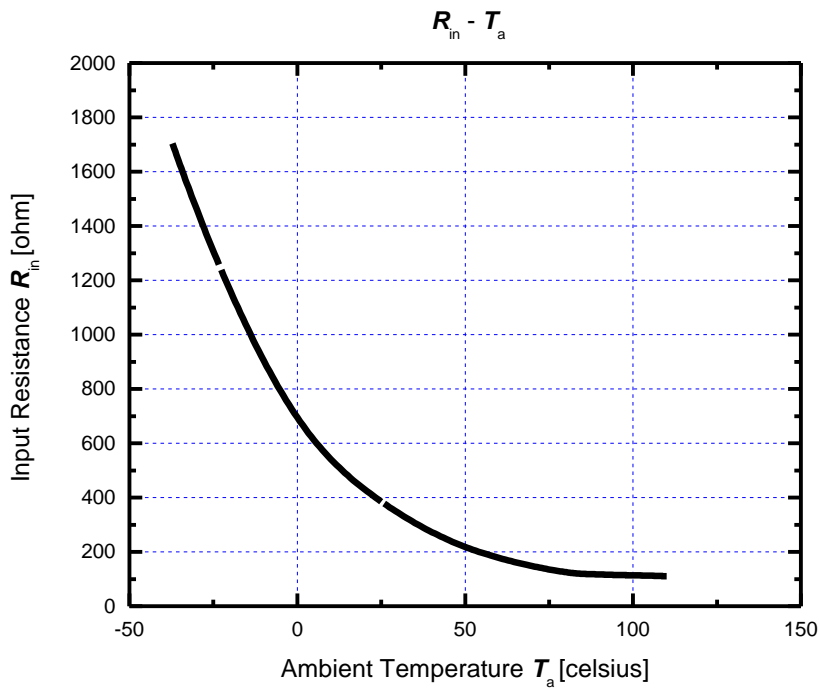


Figure 1. Input resistance R_{in} as a function of ambient temperature T_a .

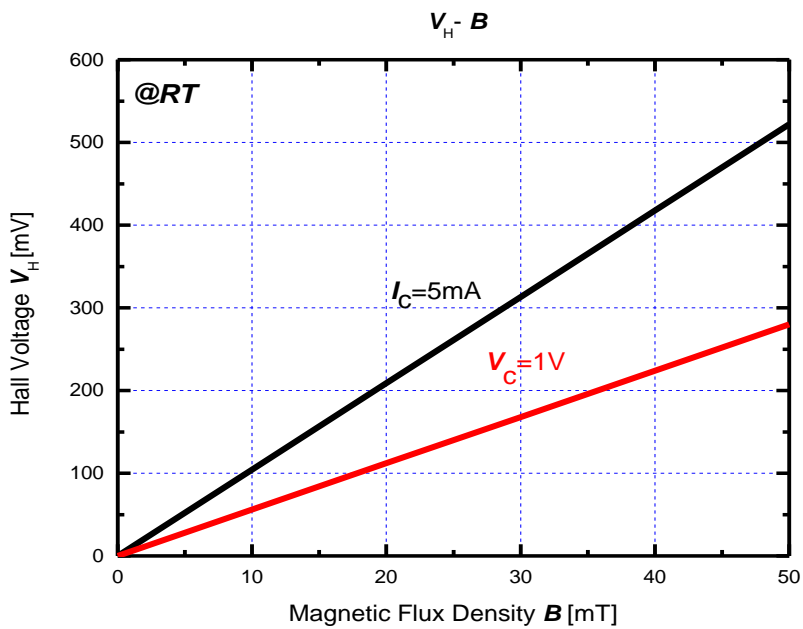


Figure 2. Hall voltage V_H as a function of magnetic flux density B .

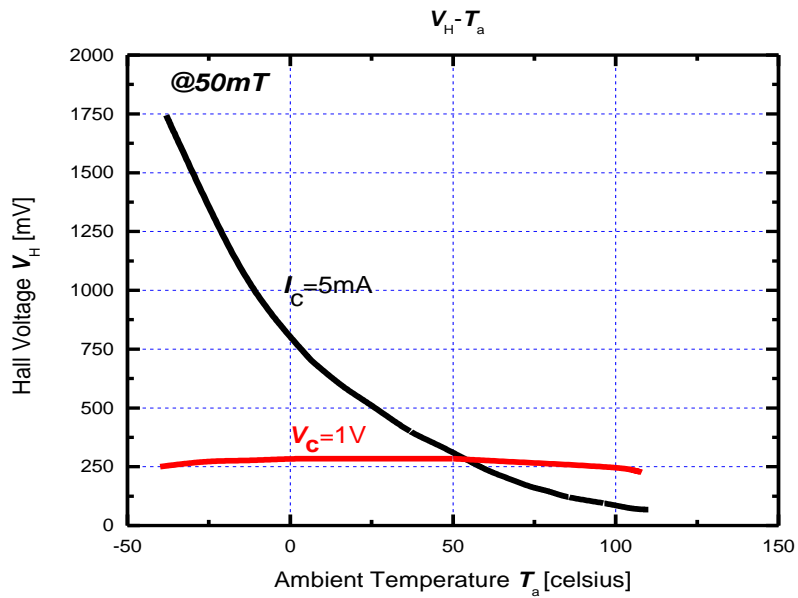


Figure 3. Hall voltage V_H as a function of ambient temperature T_a .

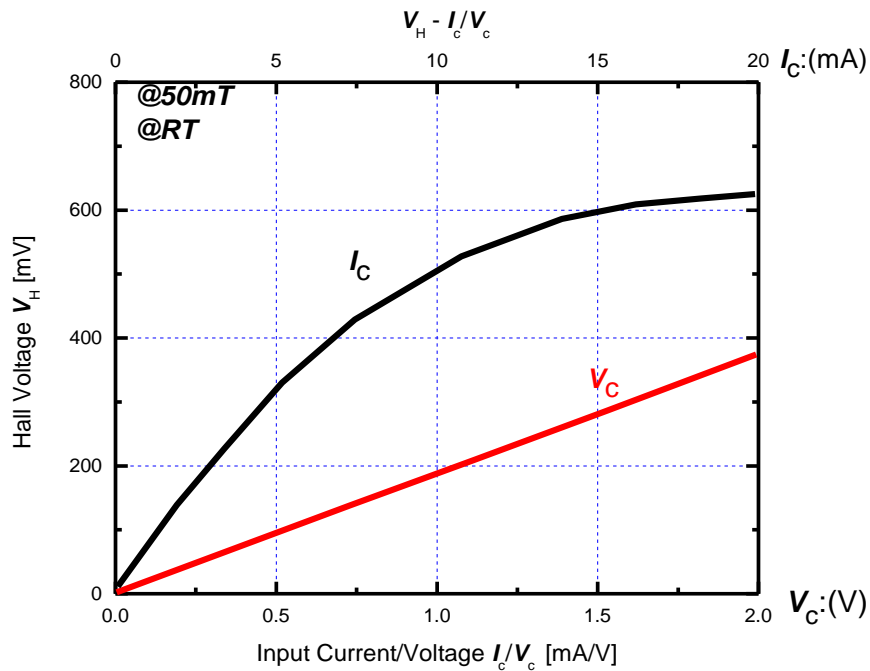


Figure 4. Hall voltage V_H as a function of electrical stimuli I_c/V_c .

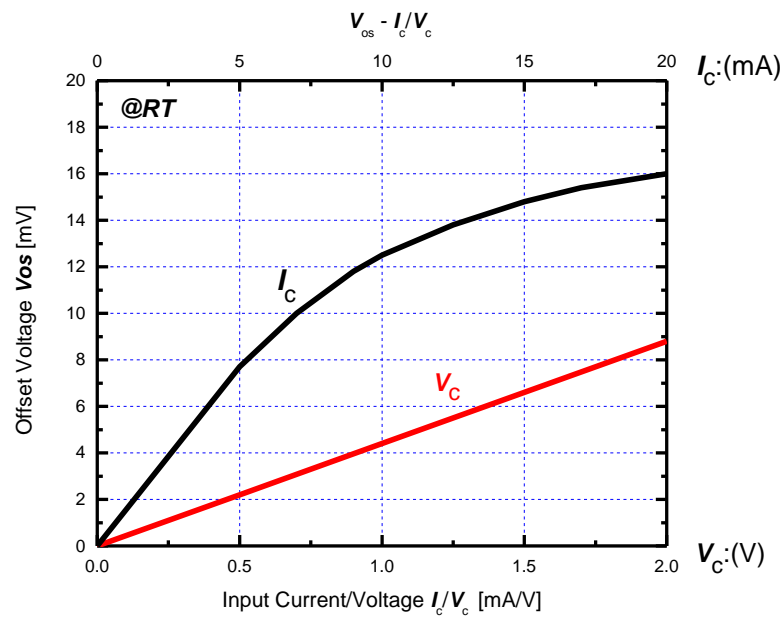


Figure 5. Offset voltage V_{os} as a function of electrical stimuli I_c/V_c .

● 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。

● 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.

● 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，产品须远离氯气及其他腐蚀性气体。

- 长期储存

本产品用 MBB 密封，在开封 MBB 后应立即检查湿度指示器。如果湿度指示器显示内部水分高于 50% RH，请联系当地经销商。

- 超过 2 年的储存

建议在 MBB 密封条件下在氮气环境中储存。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。

● 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. Keep products away from chlorine and corrosive gas.

- Long-term storage

Products are sealed in MBB with a moisture indicator. The moisture indicator should be checked right after the unsealing of MBB. If the moisture indicator reveals the internal moisture is above 50% RH, please contact the local distributor.

- 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.

- 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 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.