

# HG-106A

- High-stability GaAs Hall element.
- Ultra mini-mold SMT package.
- Shipped in packet-tape reel (4000pcs per reel).

Note : It is requested to read and accept "IMPORTANT NOTICE".

Please be aware that AKE products are not intended for use in life support equipment, devices, or systems. Use of AKE products in such applications requires the advance written approval of the appropriate AKE officer.

Certain applications using semiconductor devices may involve potential risks of personal injury, property damage, or loss of life. In order to minimize these risks, adequate design and operating safeguards should be provided by the customer to minimize inherent or procedural hazards. Inclusion of AKE products in such applications is understood to be fully at the risk of the customer using AKE devices or systems.

## •Absolute Maximum Ratings

Item	Symbol	Limit	Unit
Max. Input Voltage	V <sub>in</sub>	8	V
Max. Power Dissipation	P <sub>D</sub>	150	mW
Operating Temp. Range	T <sub>opr.</sub>	-40 to +125	°C
Storage Temp. Range	T <sub>stg.</sub>	-40 to +150	°C



## •Electrical Characteristics(T<sub>a</sub>=25°C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Hall Voltage	V <sub>H</sub>	B=0.1T, V <sub>C</sub> =6V	150		190	mV
Input Resistance	R <sub>in</sub>	B=0T, I <sub>C</sub> =0.1mA	450		750	Ω
Output Resistance	R <sub>out</sub>	B=0T, I <sub>C</sub> =0.1mA	1,000		2,000	Ω
Offset Voltage	V <sub>os</sub>	B=0T, V <sub>C</sub> =6V	-16		+16	mV
Temp. Coefficient of V <sub>H</sub>	αV <sub>H</sub>	25°C to 125°C			-0.06	%/°C
Temp. Coefficient of R <sub>in</sub>	αR <sub>in</sub>	B=0T, I <sub>C</sub> =0.1mA			0.3	%/°C
Linearity of output Hall voltage	ΔK	B=0.1/0.5T, I <sub>C</sub> =0.5mA			2	%

Notes : 1. V<sub>H</sub> = V<sub>HM</sub> - V<sub>os</sub> (V<sub>HM</sub>:meter indication)

$$2. \alpha V_H = \frac{1}{V_H(T_1)} \times \frac{V_H(T_2) - V_H(T_1)}{(T_2 - T_1)} \times 100$$

$$3. \alpha R_{in} = \frac{1}{R_{in}(T_1)} \times \frac{R_{in}(T_2) - R_{in}(T_1)}{(T_2 - T_1)} \times 100$$

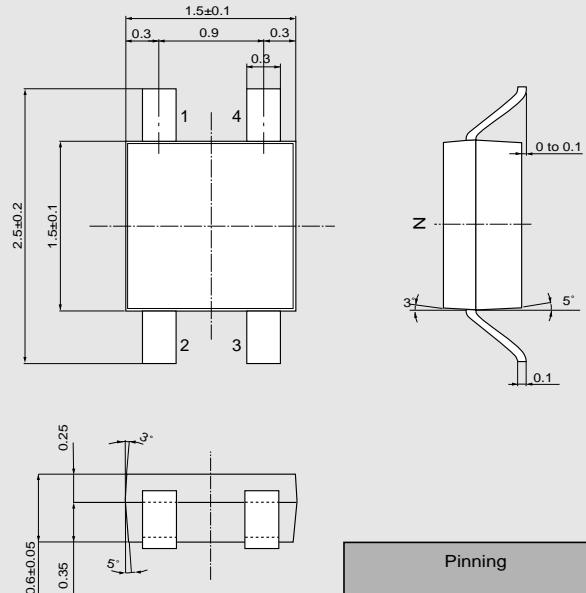
$$4. \Delta K = \frac{K(B_1) - K(B_2)}{[K(B_1) + K(B_2)]/2} \times 100$$

$$T_1 = 25^\circ\text{C}, T_2 = 125^\circ\text{C}$$

$$K = \frac{V_H}{I_C \cdot B}$$

$$B_1 = 0.5T, B_2 = 0.1T$$

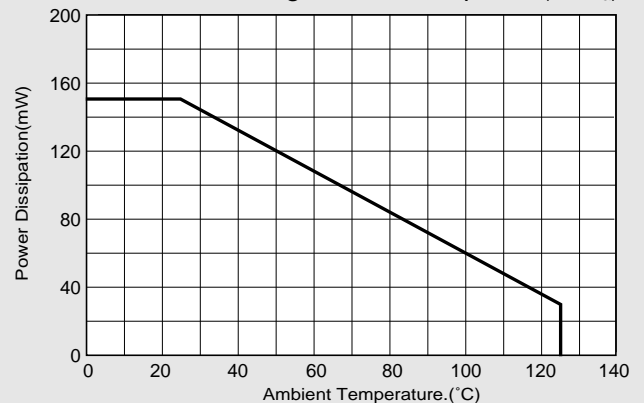
## •Dimensional Drawing (mm)

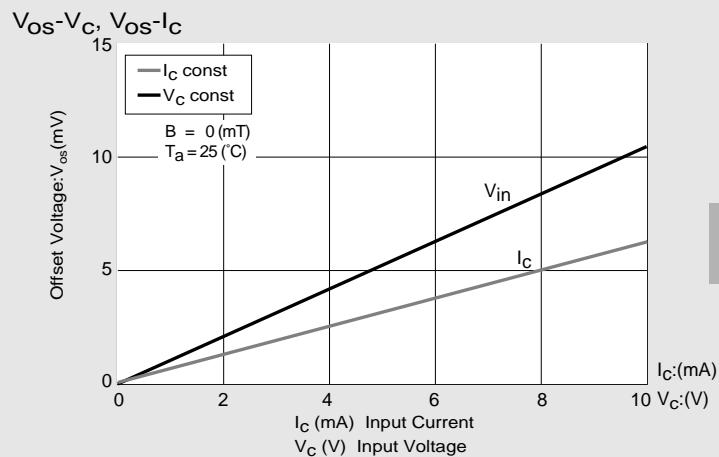
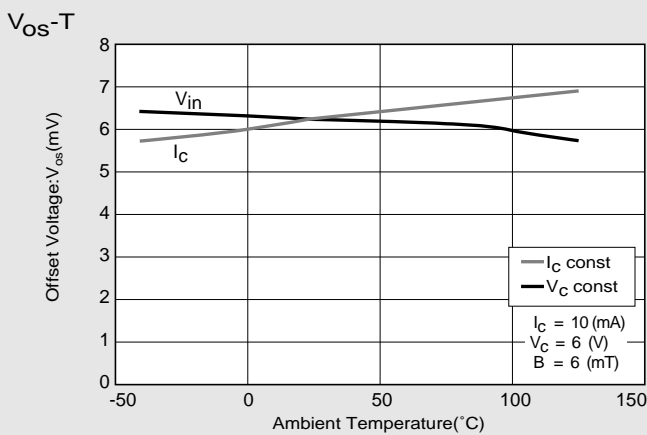
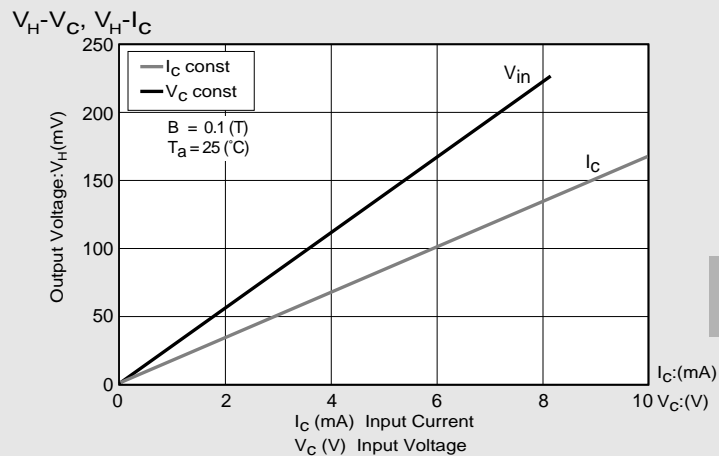
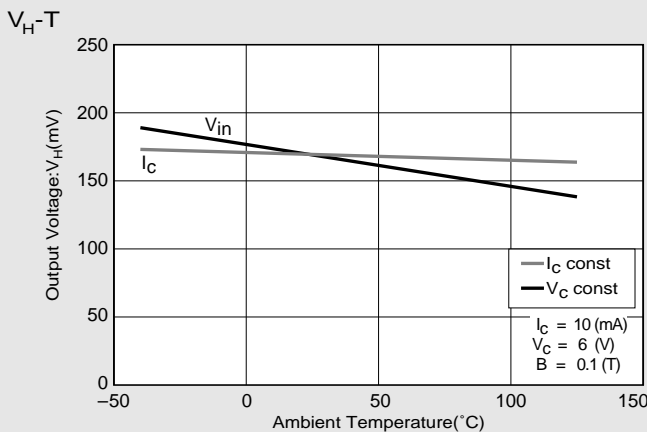
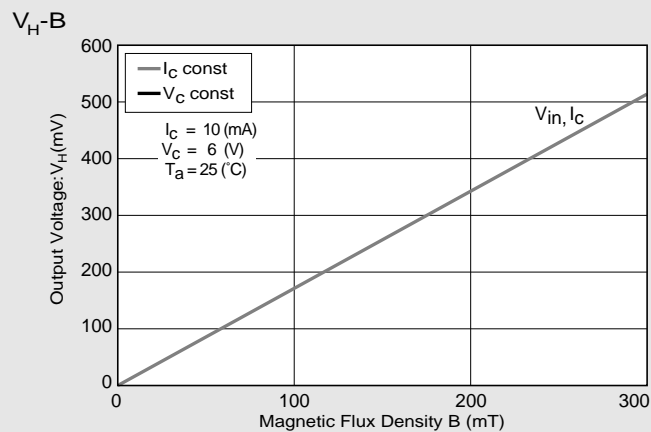
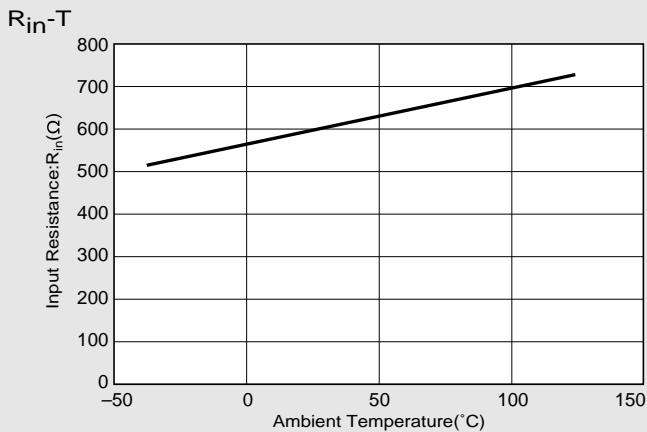


Pinning		
Input	1(±)	3(∓)
Output	2(±)	4(∓)

## •Characteristic Curves

Allowable Package Power Dissipation (P<sub>D</sub>-T<sub>a</sub>)





\*Magnetic Flux Density  
 1(mT)=10(G)

In This Example :  $R_{in}=600(\Omega)$ ,  $V_{OS}=6.3(mV)$ ,  $V_C=6(V)$