HW-109A

- High-sensitivity InSb Hall element.
- SMT package with sensing area leaned 45˚.
- Shipped in packet-tape reel (5000pcs 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 Current	I_C	Const. Current Drive	20	mA
Operating Temp. Range	$T_{opr.}$		−40 to +110	˚C
Storage Temp. Range	$T_{stg.}$		−40 to +125	˚C

•Classification of Output Hall Voltage (V_H)

Rank	V_H [mV]		Conditions
A	122	to 150	
B	144	to 174	
C	168	to 204	B=50mT, V_C=IV
D	196	to 236	Constant Voltage Drive
E	228	to 274	
F	266	to 320	

Note : When ordering, specify 3-rank or wider range(e·g·,BCD).

•Electrical Characteristics(T_a=25˚C)

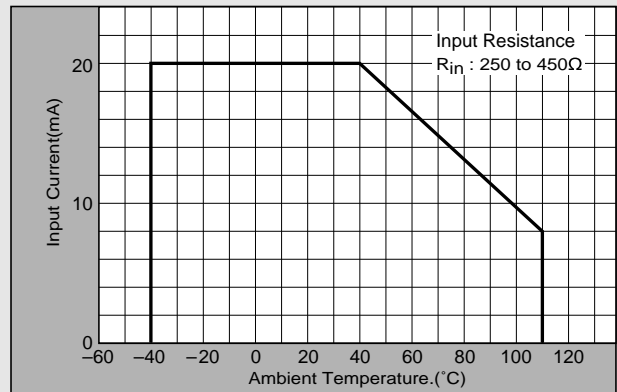| Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Hall Voltage	V_H	Const. Voltage Drive B=50mT, V_C=IV	122		320	mV
Input Resistance	R_{in}	B=0mT, I_C=0.1mA	250		450	Ω
Output Resistance	R_{out}	B=0mT, I_C=0.1mA	250		450	Ω
Offset Voltage	V_{os}	B=0mT, V_C=IV	−7		+7	mV
Temp. Coefficient of V_H	αV_H	B=50mT, I_C=5mA		−1.8		%/˚C
Temp. Coefficient of R_{in}	αR_{in}	B=0mT, I_C=0.1mA		−1.8		%/˚C
Dielectric Strength		100V D.C	1.0			MΩ

Notes : 1. $V_H = VHM − V_{os}$ (VHM:meter indication)

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

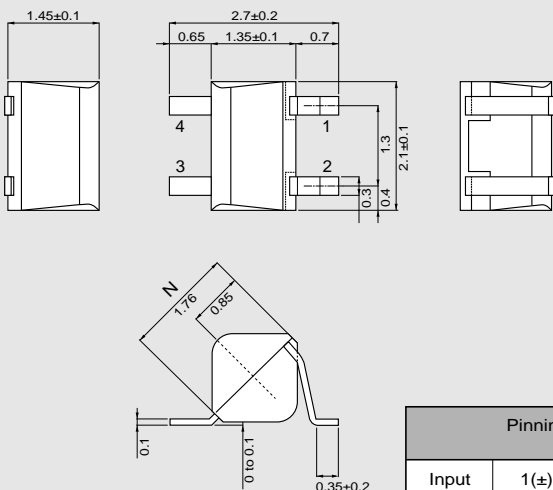3. $\alpha R_{in} = \frac{1}{R_{in}(T_1)} \times \frac{R_{in}(T_3) − R_{in}(T_2)}{(T_3 − T_2)} \times 100$

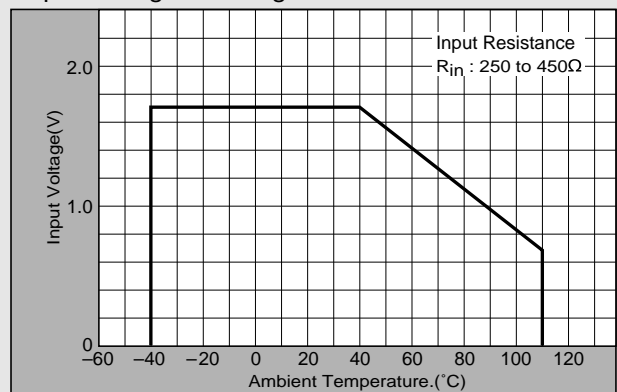$T_1 = 20˚C, T_2 = 0˚C, T_3 = 40˚C$

•Input Current Derating Curve

Note : R_{in} of Hall element decreases rapidly as ambient temperature increases. Ensure compliance with input current derating curve envelope, throughout the operating temperature range.
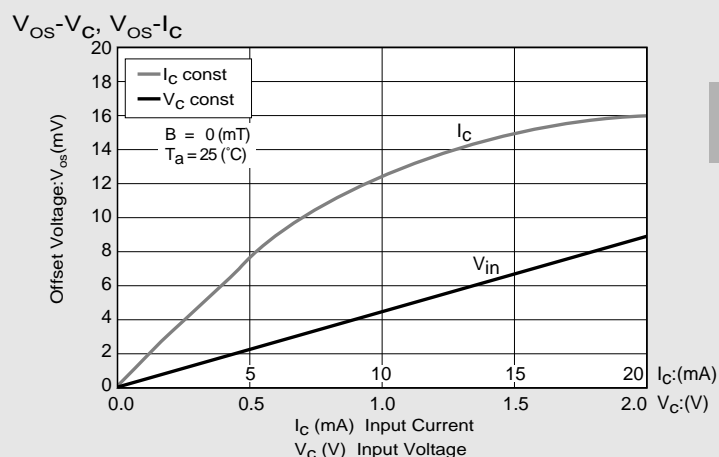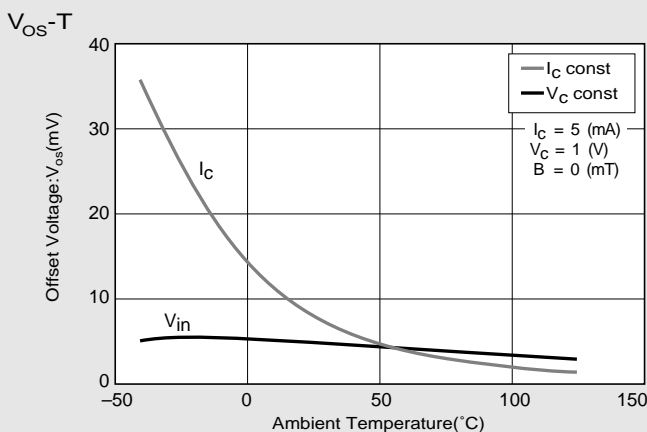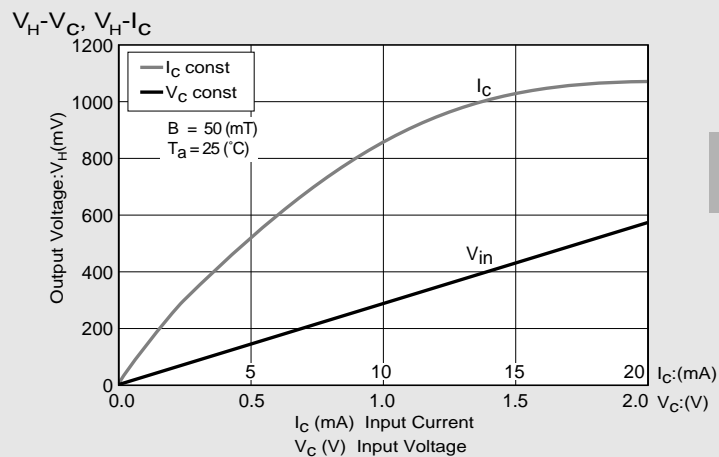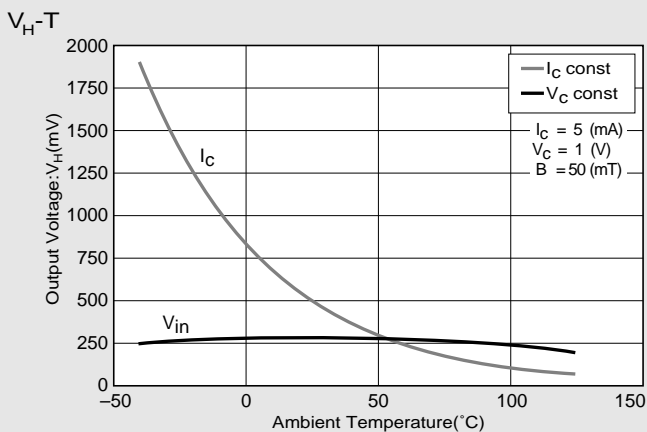
•Dimensional Drawing (mm)
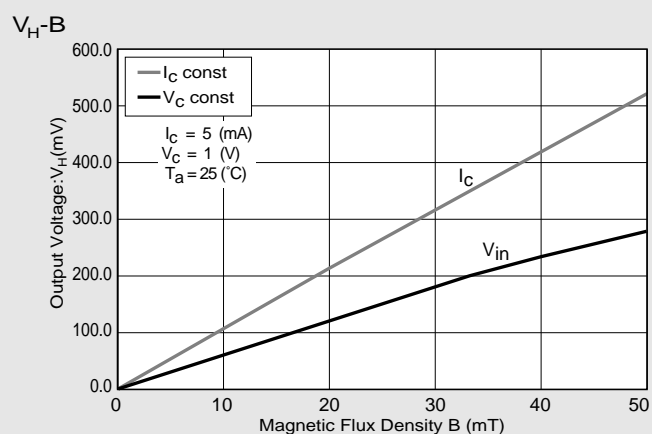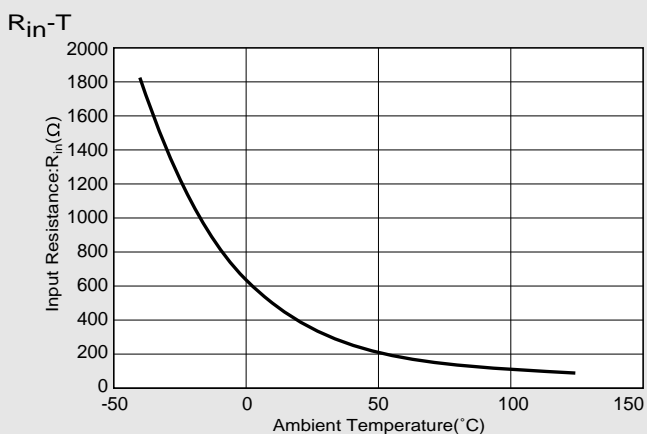

Pinning		
Input	1(±)	3(∓)
Output	2(∓)	4(±)

•Input Voltage Derating Curve

Note : For constant-voltage drive, stay within this input voltage derating curve envelope.

•Characteristic Curves

R_{in}-T

V_H-B

V_H-T

V_H-V_C, V_H-I_C

V_{OS}-T

V_{OS}-V_C, V_{OS}-I_C

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

In This Example : R_{in}=350(Ω), V_{os}=4.7(mV), V_C=1(V)