

# HW-209A

Shipped in packet-tape reel(5,000pcs per reel)

Notice : It is requested to read and accept "IMPORTANT NOTICE" written on the back of the front cover of this catalogue.

### ●Absolute Maximum Ratings

Item	Symbol		Limit	Unit
Max. Input Current	$I_c$	Const. Current Drive	20	mA
Operating Temp. Range	Topr.		-40 ~ +110	°C
Storage Temp. Range	Tstg.		-40 ~ +125	°C

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

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

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Hall Voltage	$V_H$	Const. Voltage Drive B=50mT, V <sub>C</sub> =1V	168		320	mV
Input Resistance	R <sub>in</sub>	B=0mT, I <sub>C</sub> =0.1mA	250		450	Ω
Output Resistance	R <sub>out</sub>	B=0mT, I <sub>C</sub> =0.1mA	250		450	Ω
Offset Voltage	V <sub>os(Vu)</sub>	B=0mT, V <sub>C</sub> =1V	-7		+7	mV
Temp. Coefficient of V <sub>H</sub>	$\alpha V_H$	Average on 0~40°C B=50mT, I <sub>C</sub> =5mA		-1.8		%/°C
Temp. Coefficient of R <sub>in</sub>	$\alpha R_{in}$	Average on 0~40°C B=0mT, I <sub>C</sub> =0.1mA		-1.8		%/°C
Dielectric Strength		100V D.C	1.0			MΩ

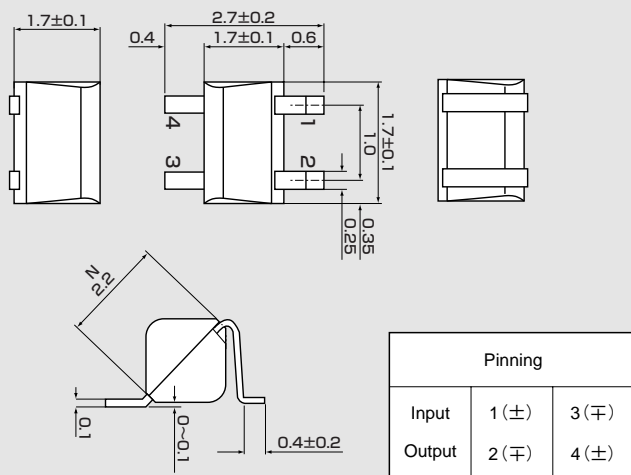
Notes : 1. V<sub>H</sub> = VHM - V<sub>os(Vu)</sub> (VHM:meter indication)

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

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

T<sub>1</sub> = 20°C, T<sub>2</sub> = 0°C, T<sub>3</sub> = 40°C

### ●Dimensional Drawing(Unit : mm)

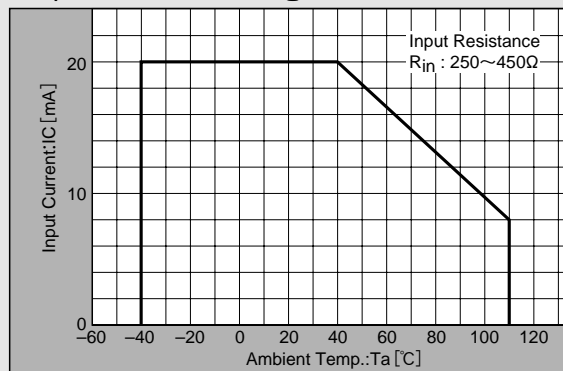


### ●Classification of Output Hall Voltage (V<sub>H</sub>)

Rank	V <sub>H</sub> [ mV ]	Conditions
C	168 ~ 204	B=50mT, V <sub>C</sub> =1V Constant Voltage Drive
D	196 ~ 236	
E	228 ~ 274	
F	266 ~ 320	

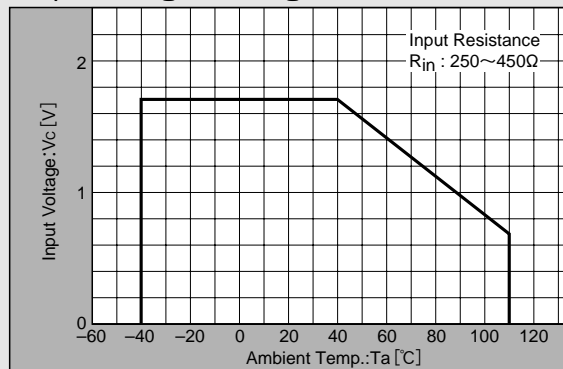
Note : When ordering, specify 3-rank or wider range(e.g.,C,D,E).

### ●Input Current Derating Curve



Note : R<sub>in</sub> of Hall element decreases rapidly as ambient temperature increases. Ensure compliance with input current derating curve envelope, throughout the operating temperature range.

### ●Input Voltage Derating Curve

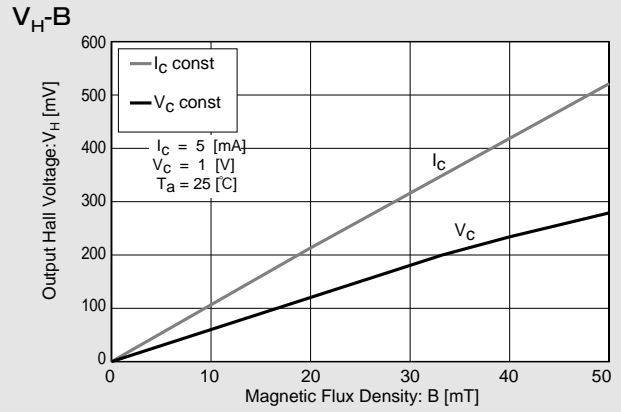
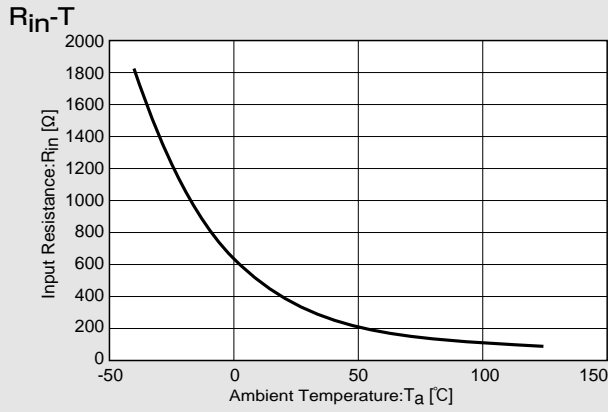


Note : For constant-voltage drive, stay within this input voltage derating curve envelope.

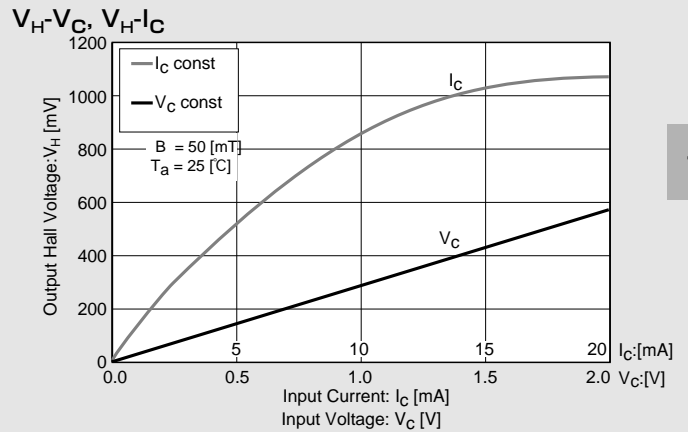
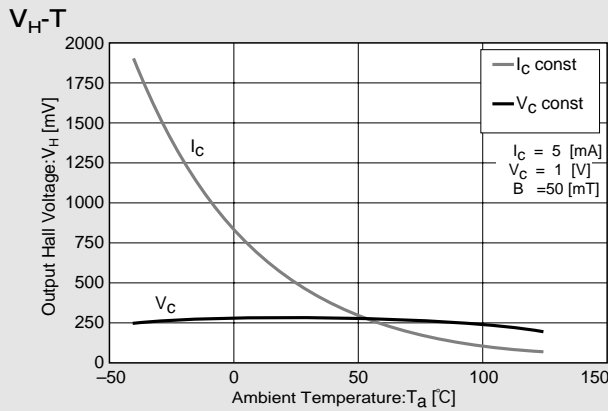
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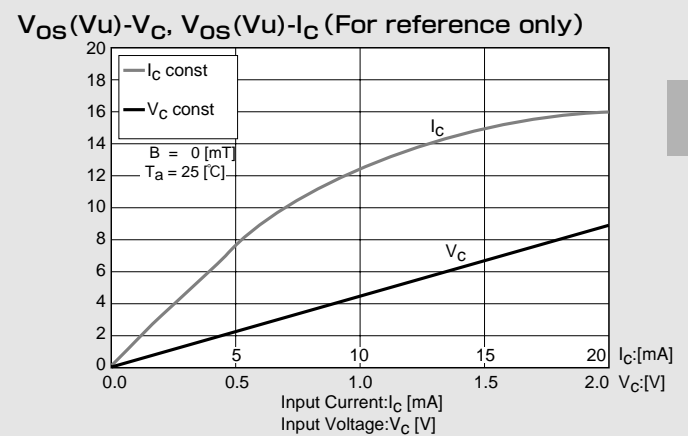
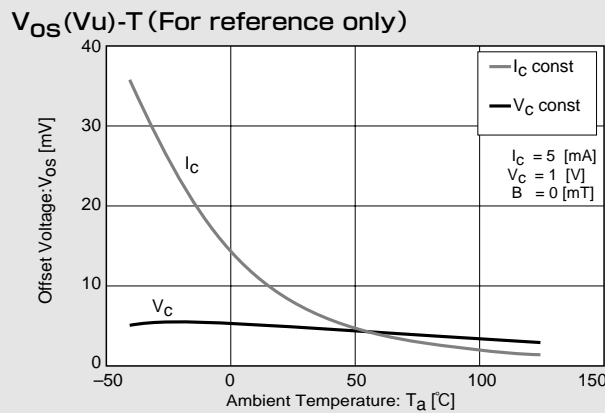
●Characteristic Curves



c



f



j

※Magnetic Flux Density  
 1[mT]=10[G]

In This Example :  $R_{in}=350$  [ $\Omega$ ],  $V_{OS}=4.7$  [mV],  $[V_C=1$  [V]]

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