

# HW-101A

- High-sensitivity InSb Hall element.
- Mini-mold SMT package (fits SOT143 land pattern).
- Shipped in packet-tape reel (3000pcs per reel).

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

### •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



### •Electrical Characteristics( $T_a=25^\circ\text{C}$ )

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Hall Voltage	$V_H$	Const. Voltage Drive B=50mT, $V_C=IV$	122		370	mV
Input Resistance	$R_{in}$	B=0mT, $I_C=0.1\text{mA}$	240		550	$\Omega$
Output Resistance	$R_{out}$	B=0mT, $I_C=0.1\text{mA}$	240		550	$\Omega$
Offset Voltage	$V_{os}$	B=0mT, $V_C=IV$	-7		+7	mV
Temp. Coefficient of $V_H$	$\alpha V_H$	B=50mT, $I_C=5\text{mA}$		-1.8		%/°C
Temp. Coefficient of $R_{in}$	$\alpha R_{in}$	B=0mT, $I_C=0.1\text{mA}$		-1.8		%/°C
Dielectric Strength		100V D.C	1.0			M $\Omega$

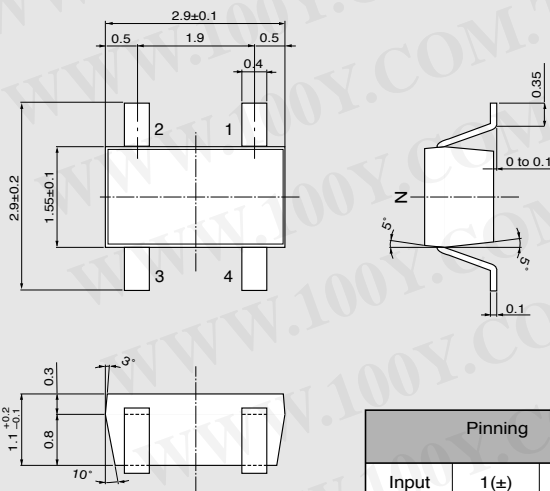
Notes : 1.  $V_H = V_{HM} - V_{os}$  (VHM: meter indication)

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

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

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

### •Dimensional Drawing (mm)

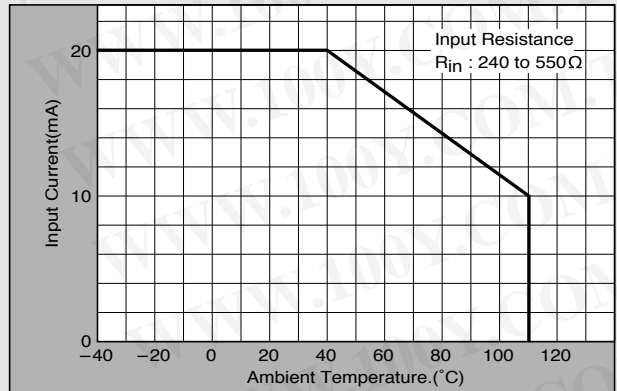


### •Classification of Output Hall Voltage ( $V_H$ )

Rank	$V_H$ [ mV ]	Conditions
A	122 to 150	B=50mT, $V_C=IV$ Constant Voltage Drive
B	144 to 174	
C	168 to 204	
D	196 to 236	
E	228 to 274	
F	266 to 320	
G	310 to 370	

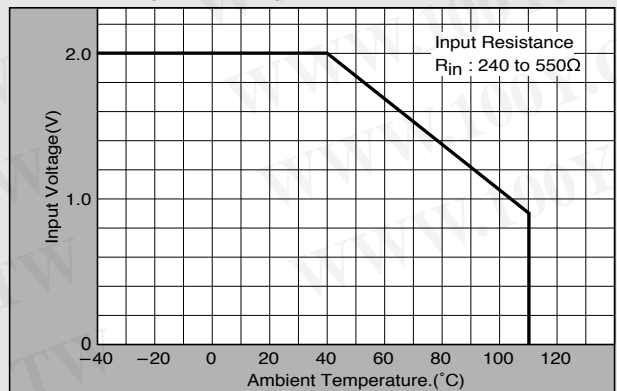
Note : When ordering, specify 3-rank or wider range(e.g.,BCD).

### •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.

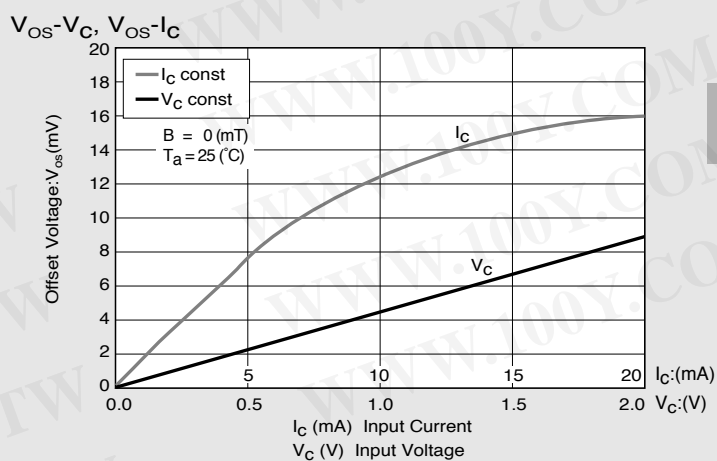
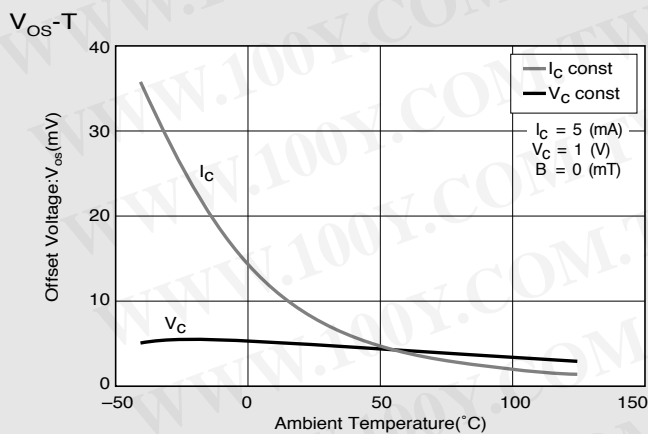
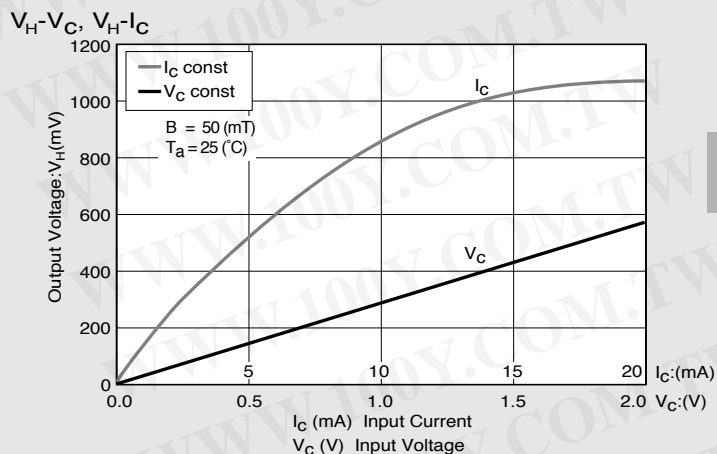
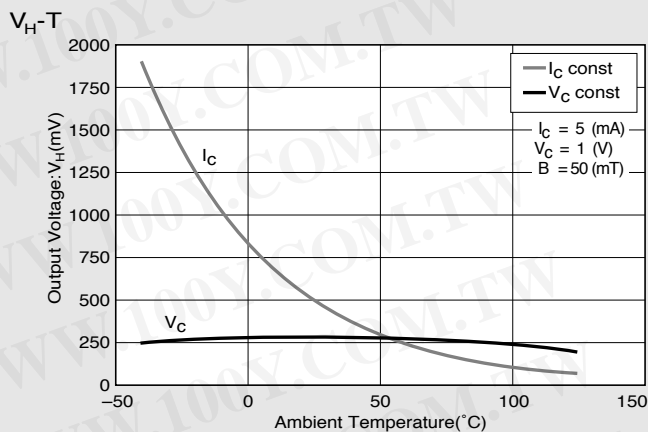
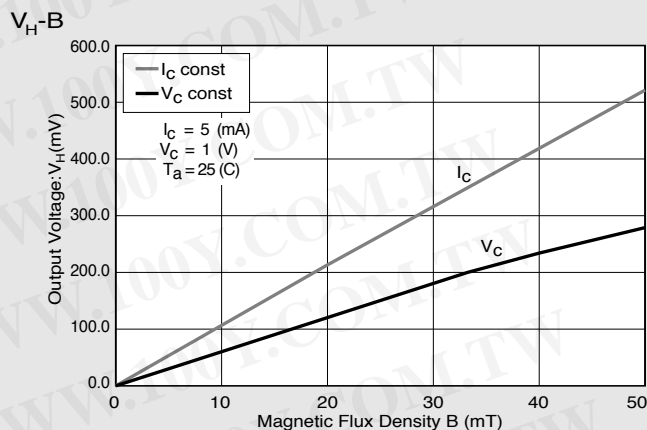
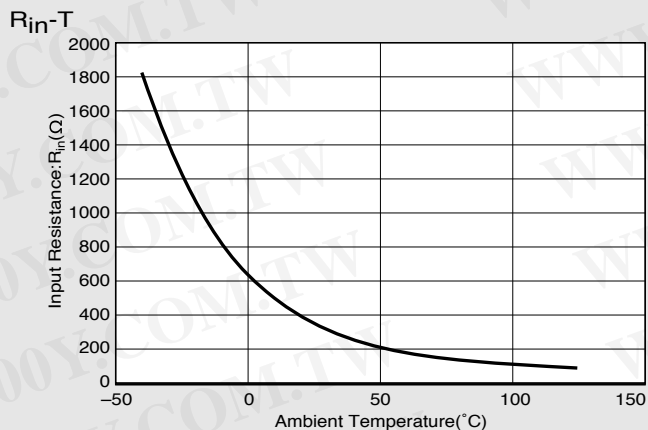
### •Input Voltage Derating Curve



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

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•Characteristic Curves



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

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