

# HW-104A

- High-sensitivity InSb Hall element.
- SMT package with inserting pin.
- Shipped in bulk(500pcs per pack).

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

## •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 $B=50\text{mT}$ , $V_C=IV$	196			mV
Input Resistance	$R_{in}$	$B=0\text{mT}$ , $I_C=0.1\text{mA}$	240		550	$\Omega$
Output Resistance	$R_{out}$	$B=0\text{mT}$ , $I_C=0.1\text{mA}$	240		550	$\Omega$
Offset Voltage	$V_{os}$	$B=0\text{mT}$ , $V_C=IV$	-7		+7	mV
Temp. Coefficient of $V_H$	$\alpha V_H$	$B=50\text{mT}$ , $I_C=5\text{mA}$		-1.8		%/°C
Temp. Coefficient of $R_{in}$	$\alpha R_{in}$	$B=0\text{mT}$ , $I_C=0.1\text{mA}$		-1.8		%/°C
Dielectric Strength		100V D.C	1.0			M $\Omega$

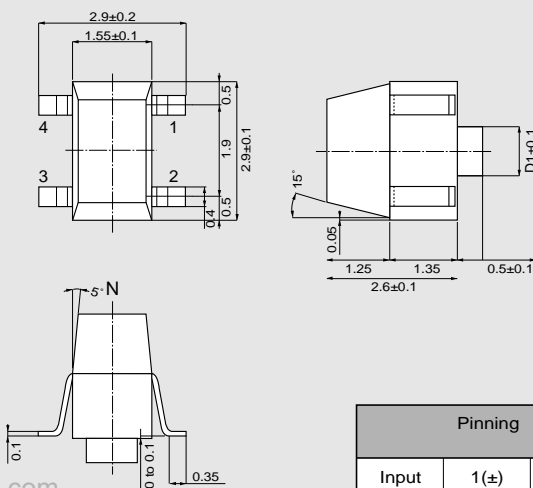
Notes : 1.  $V_H = V_{HM} - V_{os}$  (VHM: meter indication)

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

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

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

## •Dimensional Drawing (mm)

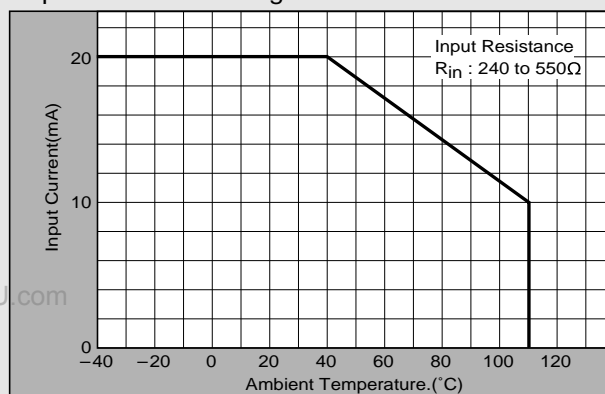


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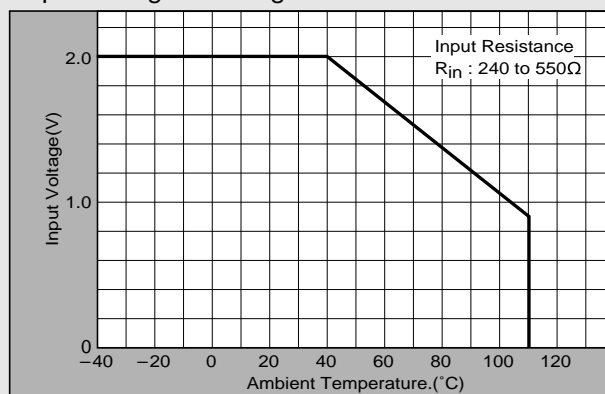


## •Input Current Derating Curve



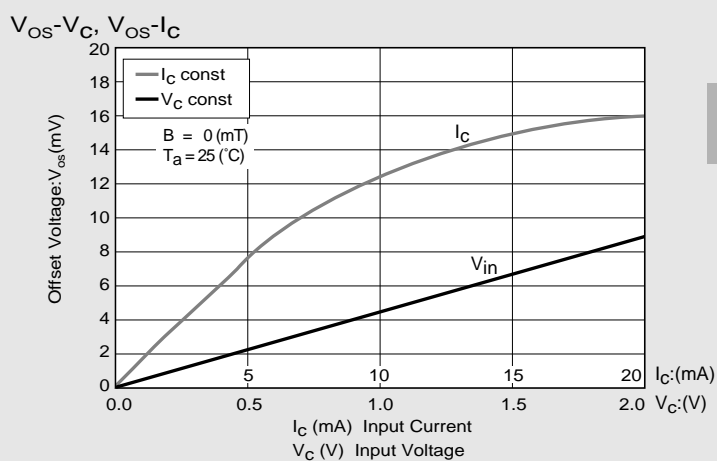
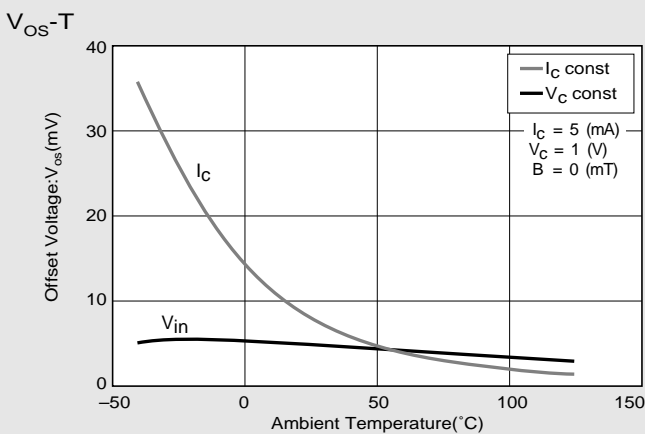
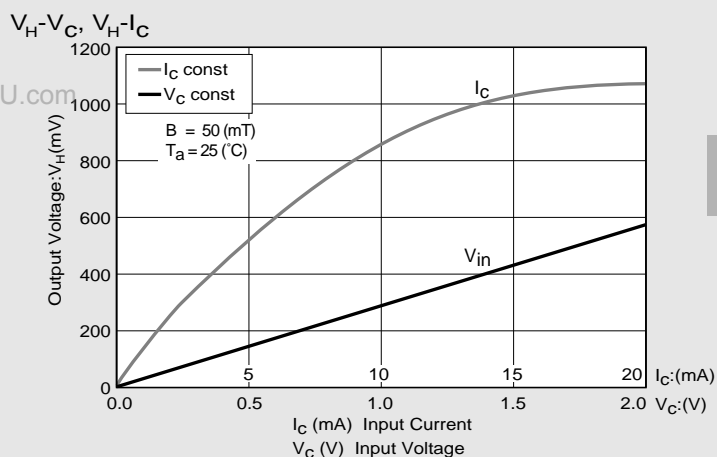
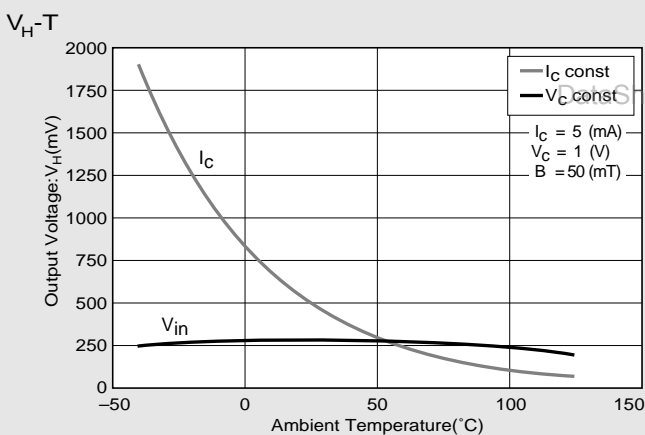
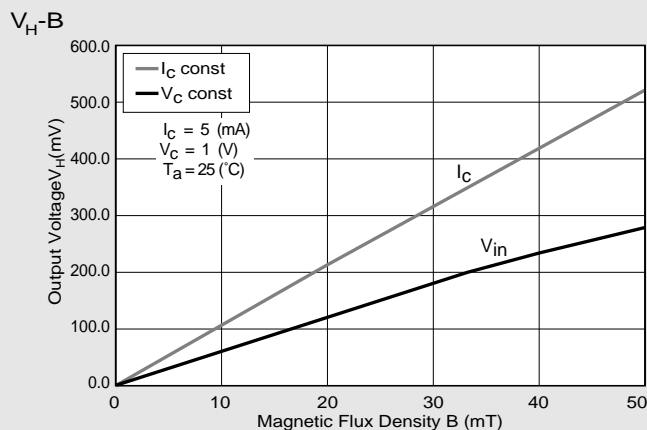
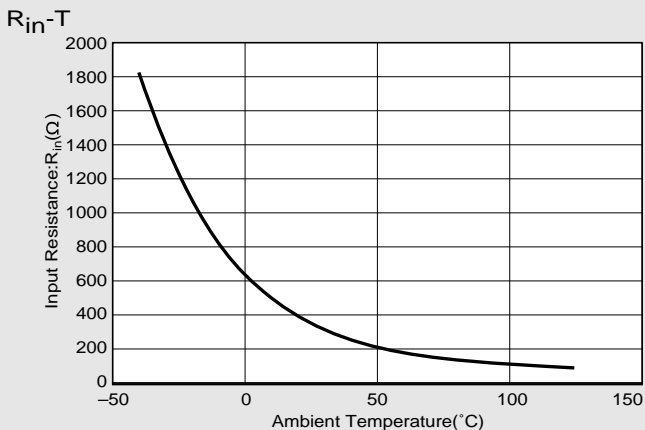
Note :  $R_{in}$  of Hall element decreases rapidly as ambient temperature increases. Ensure compliance with input current derating curve envelope, throughout the operating temperature range.

## •Input Voltage Derating Curve



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

•Characteristic Curves



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

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