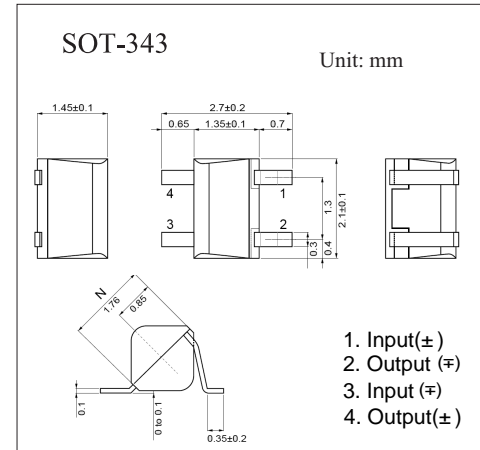


High-sensitivity InSb Hall element HW109A

■ Features

- High-sensitivity InSb Hall element
- SMT package with sensing area leaned 45°



■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Input Current	I _c	20	mA
Operating Temp. Range	T _{opr}	-40 to +110	°C
Storage Temp. Range	T _{stg}	-40 to +125	°C

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test 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	V
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 = V_{HM} - V_{os} (V_{HM}:meter indication)

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

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

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

HW109A

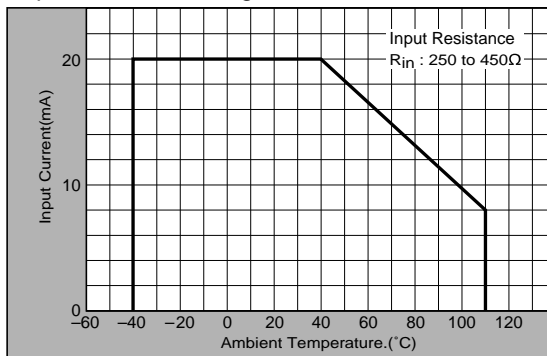
Classification of Output Hall Voltage (V_H)

Rank	V _H [mV]	Conditions
A	122 to 150	B=50mT, V _C =1V Constant Voltage Drive
B	144 to 174	
C	168 to 204	
D	196 to 236	
E	228 to 274	
F	266 to 320	

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

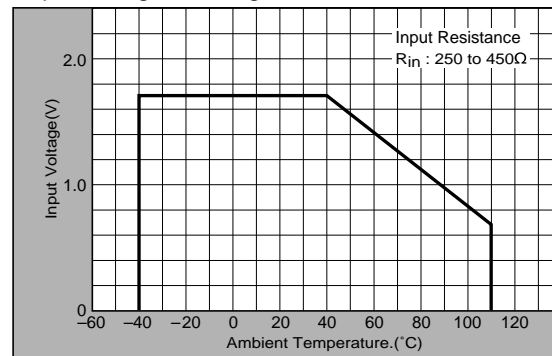
Typical Characteristics

•Input Current Derating Curve

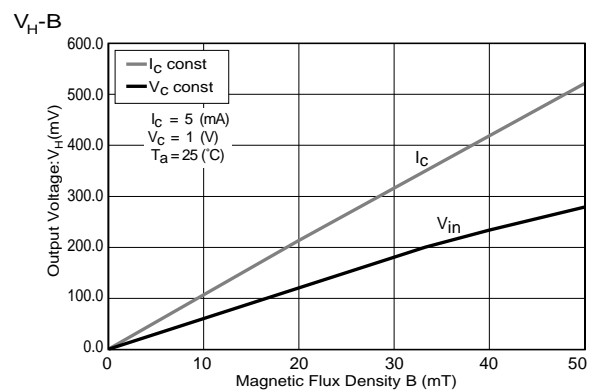
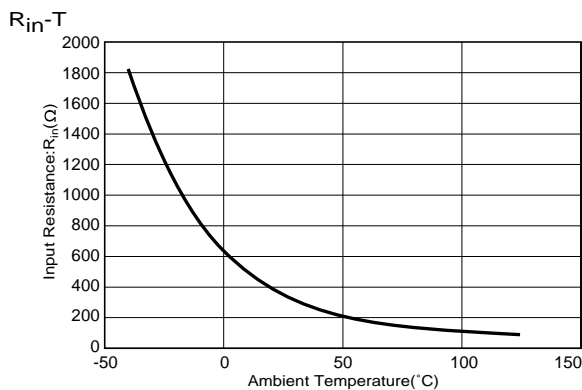


Note : R_{in} of Hall element decreases rapidly as ambient temperature increases. Ensure compliance with input current derating curve envelope, throughout the operating temperature range.

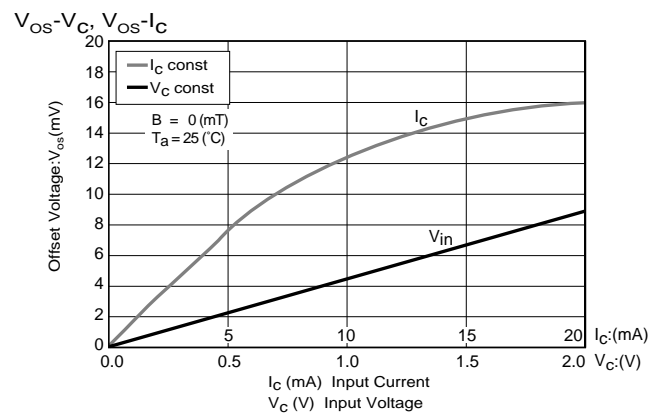
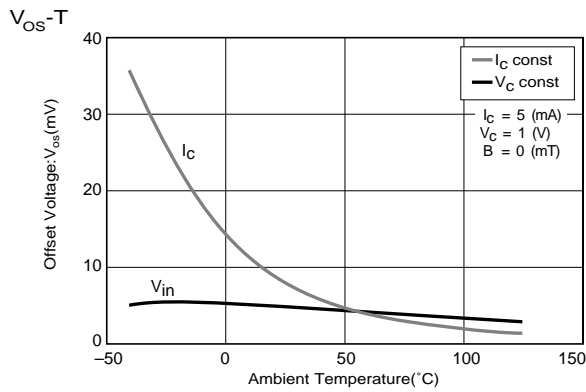
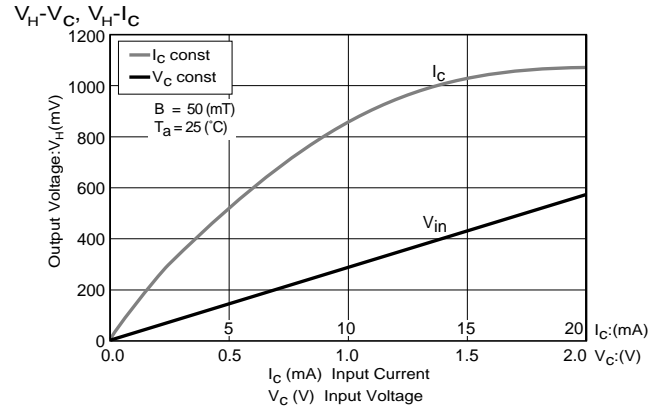
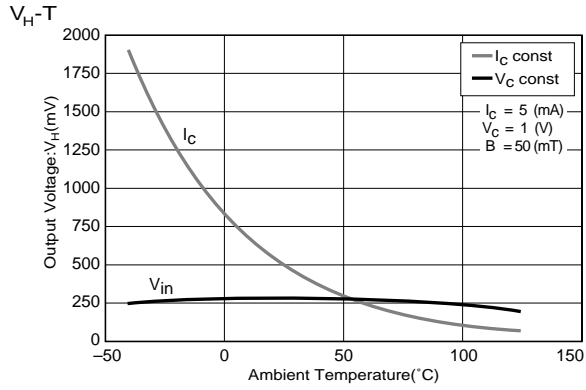
•Input Voltage Derating Curve



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



HW109A



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

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