InSb Hall Element

● Absolute Maximum Ratings

Item	Symbol	Conditions	Limit	Unit
Max. Input Voltage	V_C	Ta=25℃	5	V
Max.Input Power	P_D		25	mW
Operating Temp. Range	Topr		-40~110	℃
Storage Temp. Range	T_{STG}		-40~125	℃

● Electrical Characteristics(Ta=25℃)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Hall Voltage	V_H ※	B=50mT,V_C=1V	196		370	mV
Input Resistance	Rin	B=0mT, I_C=0.1mA	240		550	Ω
Output Resistance	R_{OUT}	B=0mT, I_C=0.1mA	240		550	Ω
Offset Voltage	V_{OS}(Vu)	B=0mT, V_C=1V	−7		+7	mV
Temp. Coefficient of V_H	αV_H ※	B=50mT, I_C=1mA Ta=0 ~40 ℃		1.8		%/℃
Temp. Coefficient of Rin	αRin ※	B=50mT, I_C=5mA Ta=0 ~40 ℃		-1.8		%/℃
Linearity	ΔK ※	B=0.1/0.5T, I_C=5mA			0.5	%

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

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

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

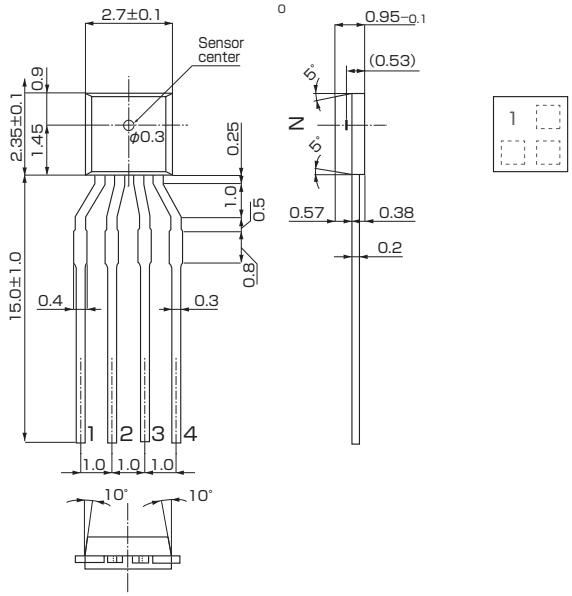
4. $\Delta K = \frac{K(B_1) - K(B_2)}{[K(B_1) + K(B_2)] / 2} \times 100$

$T_1 = 20^\circ C$, $T_2 = 40^\circ C$

$K = \frac{V_H}{I_C \cdot B}$

$B_1 = 0.5T$, $B_2 = 0.1T$

● Dimensional Drawing (Unit : mm)



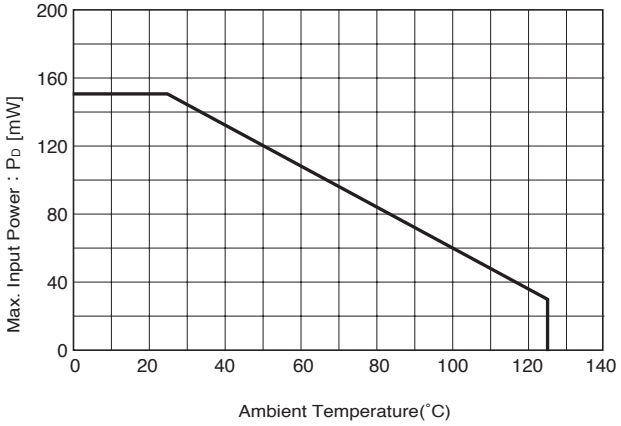
Pinning

1 (+) - 3 (-) (Input)

2 (+) - 4 (-) (Output)

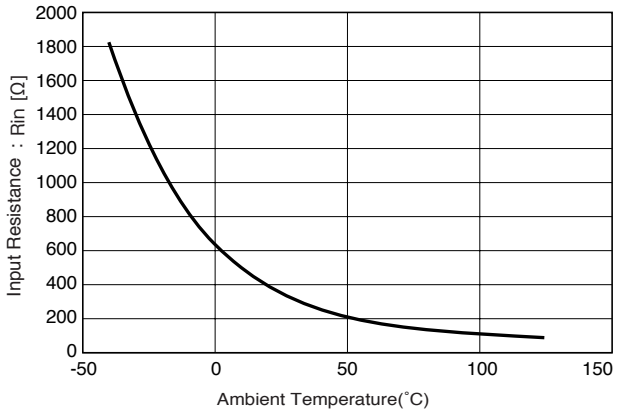
● Characteristic Curves

Allowable Package Power Dissipation

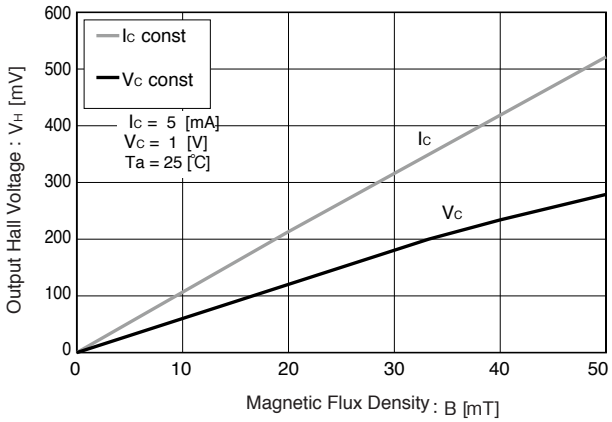


● Characteristic Curves

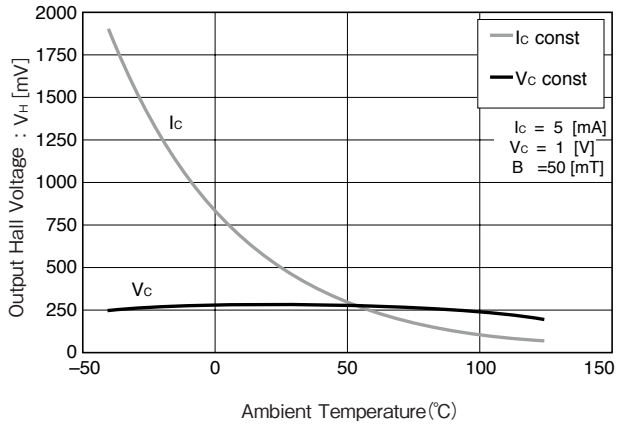
Rin-T



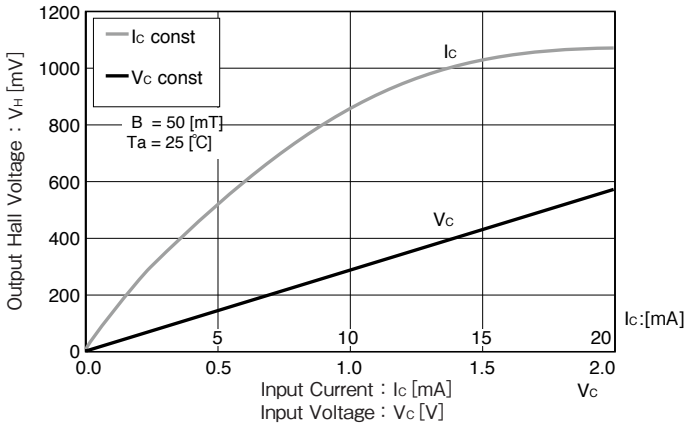
V_H-B



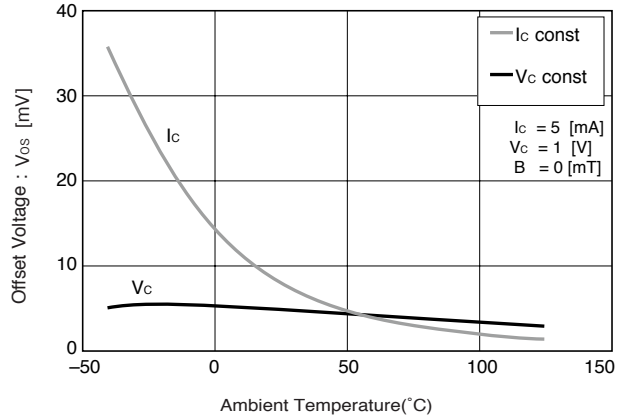
V_H-T



V_H-V_C, V_H-I_C



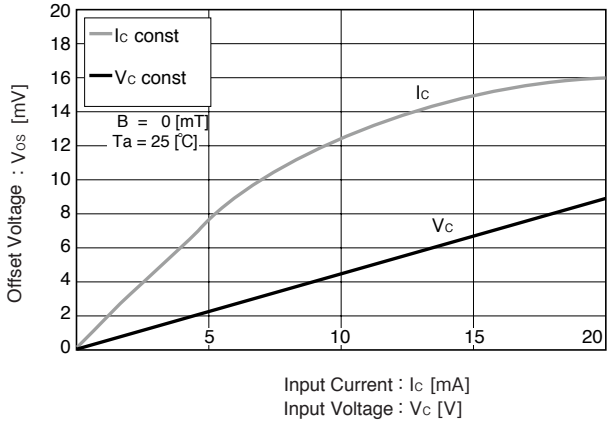
V_{OS} (Vu)-T



※Magnetic Flux Density

1[mT]=10 [G]

V_{OS} (Vu)-V_C, V_{OS} (Vu)-I_C



Rin=750〔Ω〕、V_{OS}=0.6〔mV〕〔V_C=6〔V〕

In This Example : Rin=750〔Ω〕, V_{OS}=0.6〔mV〕, 〔V_C=6〔V〕〕