InSb Type Hall Element

NICERA

MODEL

NHE312

Features

- This is a high sensitivity type of Nicera Hall element using evaporated InSb film.
- It performs effectively in low magnetic fields due to the high sensitivity.
- The input and output resistance values are suitable for transistor circuits.
- SIP type package.

Applications

- Brushless motors
- Position sensors, rotation sensors, current sensors
- Non-contacting magnetic sensors
- Current sensors
- Magnetic flux sensors other than those above

Specification

◆ Halogen and Pb-free products ◆

Nicera is able to supply halogen and Pb-free products.

For these products, "HF" is put at the end of model names as below;

NHE312-HF

◆ Absolute Maximum Ratings ◆

Item	Symbol	Limit	Unit
Max. Input Current	Icmax	20(at25°C)	mA
Operating Temp. Range	Topr	−40～110	°C
Storage Temp. Range	Tstg	−40～125	°C

◆ Electrical Characteristics (T=25°C) ◆

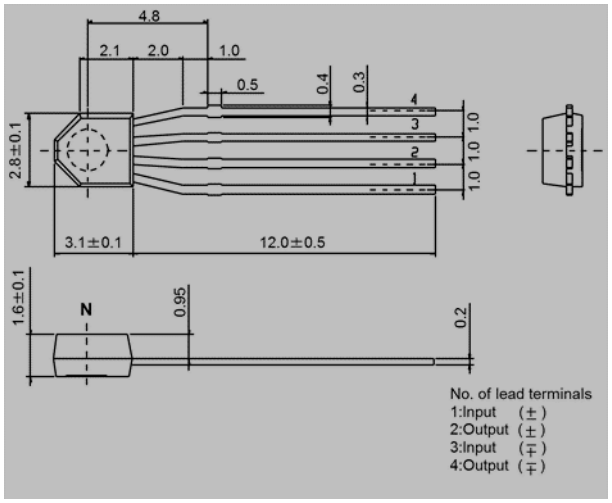
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	VH	Vc=1V B=50mT	196		370	mV
Offset Voltage	Vo	Vc=1V B=0mT	−7		7	mV
Input Resistance	Rin	I=1mA	240		550	Ω
Output Resistance	Rout	I=1mA	240		550	Ω
Temp. Coefficient of VH	※1 αHI	Standard 20°C Average 0～40°C B=50mT Ic=5mA		−1.8		%/°C
Temp. Coefficient of Rin	※2 αR	B=0mT Ic=0.1mA		−1.8		%/°C

※1 : αHI=[1/VH(T1)]×[[VH(T3)−VH(T2)]/(T3−T2)]×100

※2 : αR=[1/Rin(T1)]×[[Rin(T3)−Rin(T2)]/(T3−T2)]×100

T1=20°C,T2=0°C,T3=40°C

◆ Dimensional Drawing ◆ (UNIT: mm)



◆ Classification of Output Voltage ◆

Model	Rank	VH(mV)	Conditions
NHE312	5	196～236	Constant Voltage Drive
	6	228～274	VH=VHM−Vo
	7	266～320	VHM=Measured Hall Voltage
	8	310～370	(at 50mT)
			Vo=Offset Voltage(at 0 mT)

※ Please design with multiple ranks (three ranks or more).

◆ Packaging ◆

Model	Packaging	Bag Max. (pcs)	Carton Max. (pcs)
NHE312	Bulk	1,000	30,000

NIPPON CERAMIC CO., LTD.

2018. 4

◆ Characteristics Curve ◆