

CYTY101A (InSb) HALL-EFFECT ELEMENTS

CYTY series Hall-effect elements are made of compound semiconductor material indium stibnite (InSb), which utilizes the Hall-effect principle. It can convert a magnetic flux density signal linearly into voltage output.

FEATURES

- High Magnetic Sensitivity
- Low Offset Voltage
- Miniature Package

TYPICAL APPLICATION

- Magnetic Field Measurement
- Current Sensor
- Detection of Speed
- DC Brushless Motor
- Position Control

Types are Different According to The Hall Output Voltage V_H (mV)

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Input Current	I_i	20 ($T_A=40^\circ\text{C}$)	mA
Input Voltage	V_i	2 ($T_A=40^\circ\text{C}$)	V
Operating Temperature Range	T_A	-40~110	$^\circ\text{C}$
Storage Temperature Range	T_S	-40~120	$^\circ\text{C}$

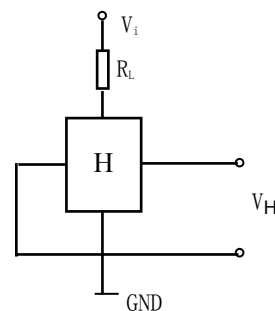
Label	Hall Output Voltage
Q	45~60
R	55~75
D	195~230
E	225~275
F	270~320
G	315~370

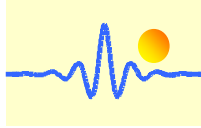
ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Value	
			Min	Max
Hall output voltage	V_H (mV)	Constant voltage driven $V_i=1\text{V}$ $B=50\text{mT}$	195	370
Offset voltage	V_o (mV)	$B=0$ $V_i=1\text{V}$	-7	+7
Input resistance	R_i (Ω)	$B=0$ $I_i=0.1\text{mA}$	240	550
Output resistance	R_o (Ω)	$B=0$ $I_i=0.1\text{mA}$	240	550
Output voltage temperature coefficient	αV_H ($\%/^\circ\text{C}$)	$B=50\text{mT}$ $I_i=5\text{mA}$		-2
Input and output resistance temperature coefficient	ΔR_i ($\%/^\circ\text{C}$)	$B=0$ $I_i=0.1\text{mA}$		
Isolation resistance	($\text{M}\Omega$)	100V DC		>1.0

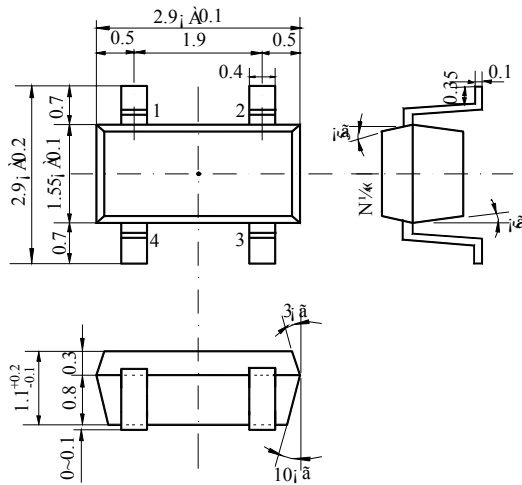
- Note: 1. The Hall output voltage V_H =the effective voltage- V_o
2. The types are different according to the Hall output voltage V_H (mV)

FUNCTIONAL BLOCK DIAGRAM





Package Outline Drawing (Unit: mm)



CYTY101A (SOT-143)

Pin Notes

- 1、 3 Output
- 2、 4 Output

CHARACTERISTICS CURVE

