

CYTHS119 GaAs HALL-EFFECT ELEMENTS

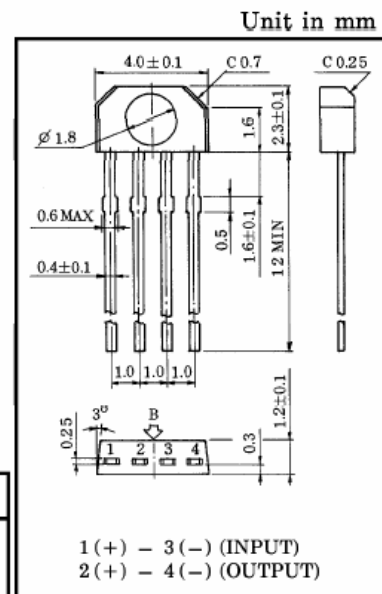
CYTHS119 Hall-effect element is a ion-implanted magnetic field sensor made of mono-crystal gallium arsenide (GaAs) semiconductor material group III-V using ion-implanted technology. It can convert a magnetic flux density signal linearly into voltage output.

HIGH STABILITY MOTOR CONTROL.
DIGITAL TACHOMETER.
CRANK SHAFT POSITION SENSOR.

- Excellent Temperature Characteristics.
- Wide Operating Temperature Range. (; -55~125°C)
- Excellent Output Voltage Linearity.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Control Current	DC	I _C	10	mA
	1s		15	
Power Dissipation		P _D	150	mW
Operating Temperature Range		T _{opr}	-55~125	°C
Storage Temperature Range		T _{stg}	-55~150	°C



Unit weight: 0.06g/pc

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Internal Resistance (Input)	R _d	I _C = 5mA	450	—	900	Ω
Residual Voltage Ratio	V _{HO} / V _H	I _C = 5mA, B = 0 / B = 0.1T	—	—	± 10	%
Hall Voltage (Note 1)	V _H	I _C = 5mA, B = 0.1T	55	—	140	mV
Temperature Coefficient (Note 2)	V _{HT}	I _C = 5mA, B = 0.1T T ₁ = 25°C, T _a = 125°C	—	—	-0.06	% / °C
Linearity (Note 3)	ΔK _H	I _C = 5mA, B ₁ = 0.1T, B ₂ = 0.5T	—	—	2	%
Specific Sensitivity (Note 4)	K*	I _C = 5mA, B = 0.1T	—	27	—	× 10 ⁻² / T
Internal Resistance (Output)	R _{OUT}	I _C = 5mA	580	—	1350	Ω

Note 1 : V_H = V_{HM} - V_{HO} (V_{HM} is meter indication)

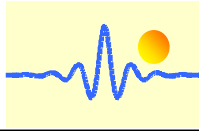
Note 2 : $V_{HT} = \frac{1}{V_{H(T1)}} \cdot \frac{V_{H(T2)} - V_{H(T1)}}{T2 - T1} \times 100 (\% / ^\circ C)$

V_{HO} : Residual Voltage

Note 3 : $\Delta K_H = \frac{K_H(B2) - K_H(B1)}{1/2 \{K_H(B1) + K_H(B2)\}} \times 100(\%)$, $K_H = \frac{V_H}{I_C \cdot B}$

K_H : Product Sensitivity

Note 4 : $K^* = V_H / (R_d \times I_C \times B) = K_H / R_d$



Characteristics Curves

