TOSHIBA HALL SENSOR GaAs ION IMPLANTED PLANAR TYPE

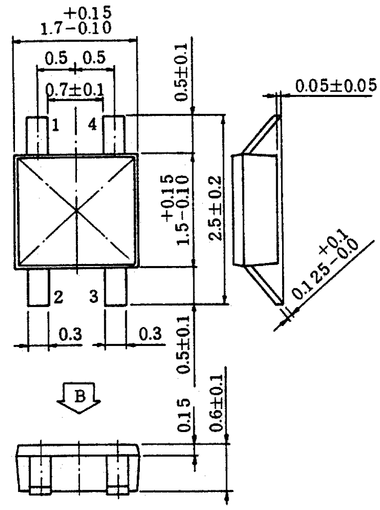
THS125

HIGH STABILITY MOTOR CONTROL. DIGITAL TACHOMETER.

CRANK SHAFT POSITION SENSOR.

- Super Small Package.
- Excellent Temperature Characteristics.
- Wide Operating Temperature Range. (; −55~125°C)
- Excellent Output Voltage Linearity.
- High Internal Resistance. : $R_d = 1000\Omega$ (Min.)
- Low Residual Voltage Ratio. : $V_{HO} / V_H = \pm 5\%$ (Max.)

Unit in mm



1 (+) −3 (−) (INPUT)
2 (+) −4 (−) (OUTPUT)

JEDEC	—
EIAJ	—
TOSHIBA	10-2A1A

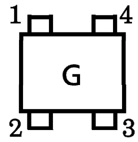
Weight : 0.0047g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Control Voltage	V_C	12**	V
Power Dissipation	P_D	150**	mW
Operating Temperature Range	T_{opr}	−55~125	°C
Storage Temperature Range	T_{stg}	−55~150	°C

** Mounted on a printed circuit board.

Marking



ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Internal Resistance (Input)	R_d	$I_C = 1mA$	1000	1250	1500	Ω
Residual Voltage Ratio	V_{HO} / V_H	$V_C = 5V$, $B = 0 / B = 0.1T$	—	—	±5	%
Hall Voltage (Note 1)	V_H	$V_C = 5V$, $B = 0.1T$	130	150	170	mV
Temperature Coefficient (Note 2)	V_{HT}	$I_C = 5mA$, $B = 0.1T$ $T1 = 25°C$, $T2 = 125°C$	—	—	−0.06	% / °C
Linearity (Note 3)	ΔK_H	$V_C = 5V$, $B1 = 0.05T$, $B2 = 0.1T$	—	—	2	%
Specific Sensitivity (Note 4)	K*	$V_C = 5V$, $B = 0.1T$	—	30	—	$\times 10^{-2} / T$
Internal Resistance (Output)	R_{OUT}	$I_C = 1mA$	1800	2375	3000	Ω

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

Note 2 : $V_{HT} = \frac{1}{V_{H(T1)}} \cdot \frac{V_{H(T2)} - V_{H(T1)}}{T2 - T1} \times 100 (\% / °C)$ 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 : $K^* = V_H / (R_d \times I_C \times B) = K_H / R_d$

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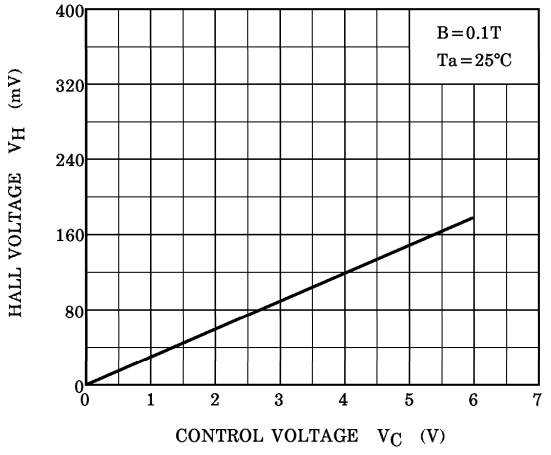
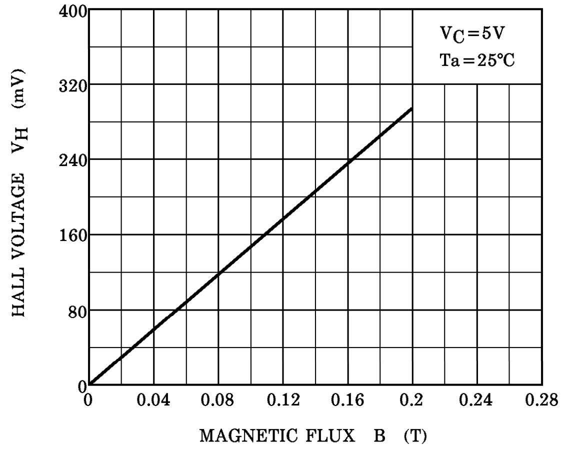
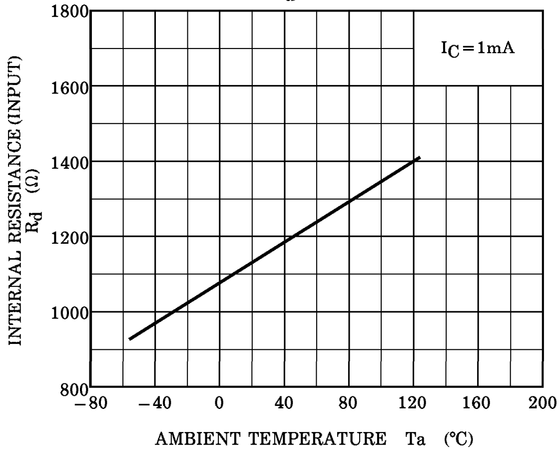
V_H – V_C



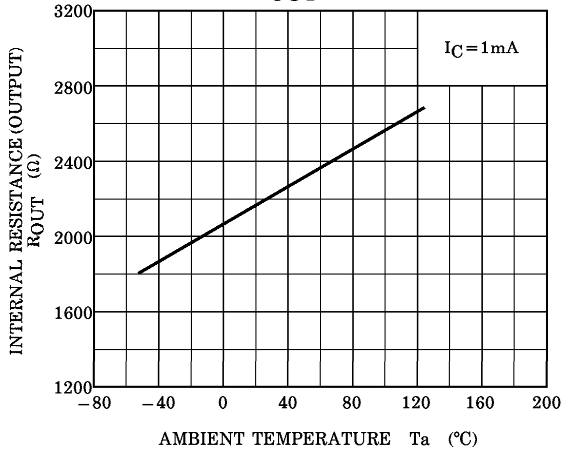
V_H – B



R_d – Ta



R_{OUT} – Ta



V_H – Ta
(CONSTANT VOLTAGE OPERATION)