

TOSHIBA HALL SENSOR GaAs ION IMPLANTED PLANAR TYPE

THS128

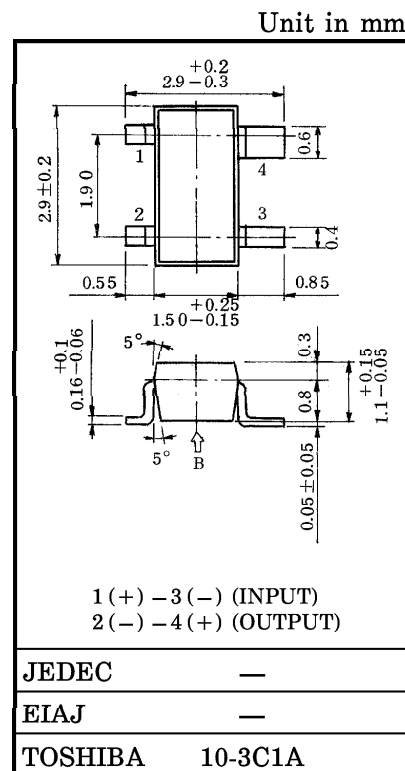
HIGH STABILITY MOTOR CONTROL.

DIGITAL TACHOMETER.

- High Internal Resistance. : $R_d = 2k\Omega$ (Typ.)
- Excellent Temperature Characteristics.
- Wide Operating Temperature Range. (; $-55 \sim 125^\circ\text{C}$)
- Excellent Output Voltage Linearity.

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RAITING	UNIT
Control Voltage	V_C	6	V
Power Dissipation	P_D	150	mW
Operating Temperature Range	T_{opr}	$-55 \sim 125$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ\text{C}$



Weight : 0.013g

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Internal Resistance (Input)	R_d	$I_C = 1\text{mA}$	1.6	2.0	2.4	$k\Omega$
Residual Voltage Ratio	V_{HO} / V_H	$V_C = 5\text{V}$, $B = 0 / B = 0.1\text{T}$	—	—	± 10	%
Hall Voltage (Note 1)	V_H	$V_C = 5\text{V}$, $B = 0.1\text{T}$	130	150	170	mV
Temperature Coefficient (Note 2)	V_{HT}	$I_C = 1\text{mA}$, $B = 0.1\text{T}$, $T_1 = 25^\circ\text{C}$ $T_2 = 125^\circ\text{C}$	—	—	-0.06	% / $^\circ\text{C}$
Linearity (Note 3)	ΔK_H	$V_C = 5\text{V}$, $B_1 = 0.05\text{T}$, $B_2 = 0.1\text{T}$	—	—	2	%
Specific Sensitivity (Note 4)	K^*	$V_C = 5\text{V}$, $B = 0.1\text{T}$	—	30	—	$\times 10^{-2} / \text{T}$
Internal Resistance (Output)	R_{OUT}	$I_C = 0.5\text{mA}$	4.2	6.0	7.8	$k\Omega$

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

$$\text{Note 2 : } V_{HT} = \frac{1}{V_H(T_1)} \cdot \frac{V_H(T_2) - V_H(T_1)}{T_2 - T_1} \times 100 (\% / ^\circ\text{C})$$

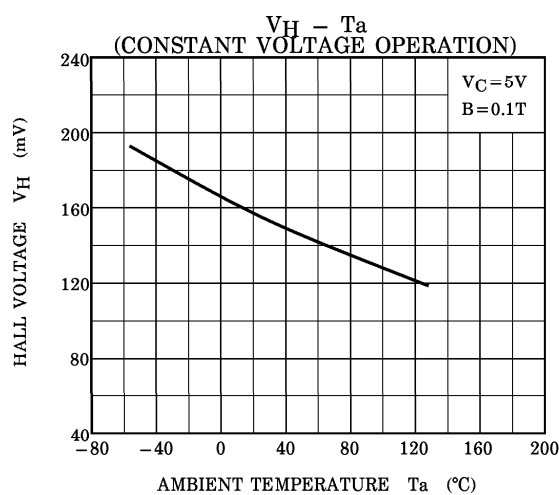
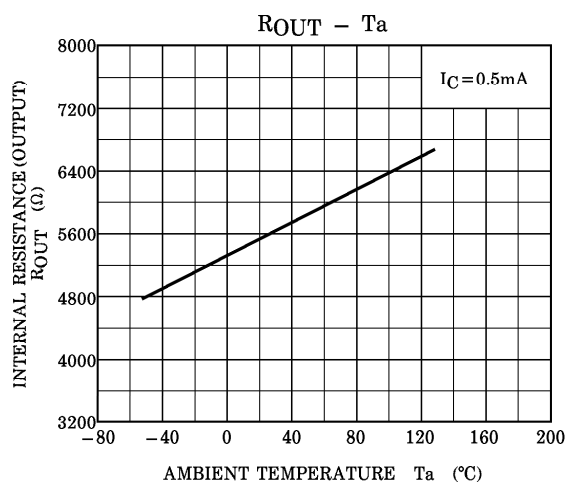
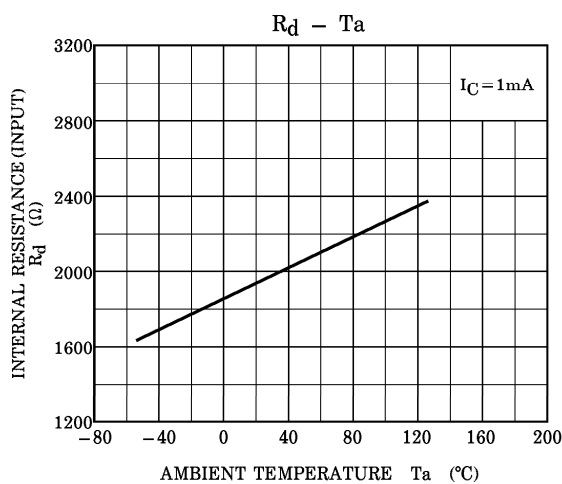
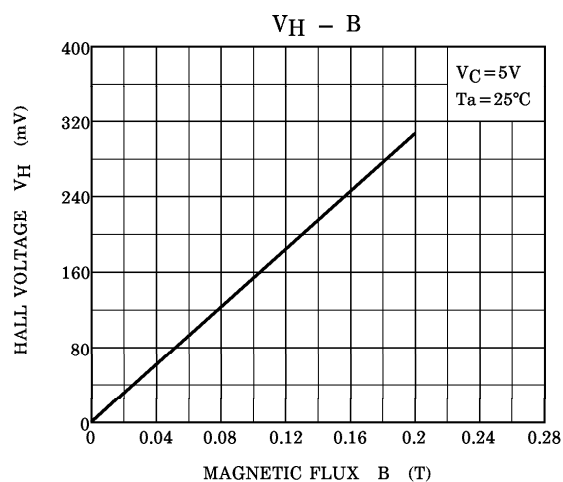
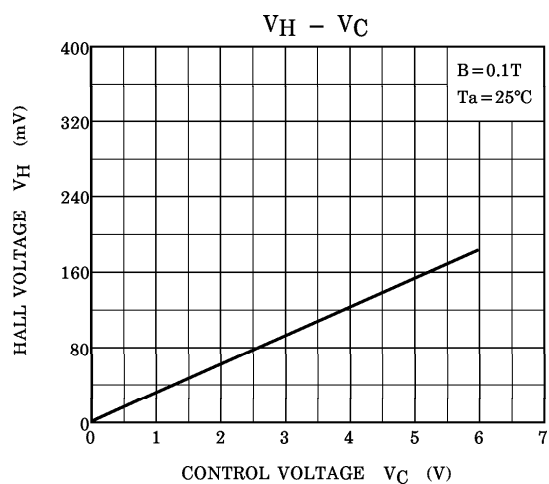
 V_{HO} : Residual Voltage

$$\text{Note 3 : } \Delta K_H = \frac{K_H(B_2) - K_H(B_1)}{1/2 \{K_H(B_1) + K_H(B_2)\}} \times 100 (\%) , K_H = \frac{V_H}{I_C \cdot B} \quad K_H : \text{Product Sensitivity}$$

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

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