

TOSHIBA HALL SENSOR GaAs ION IMPLANTED PLANAR TYPE

# THS125

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

Unit in mm

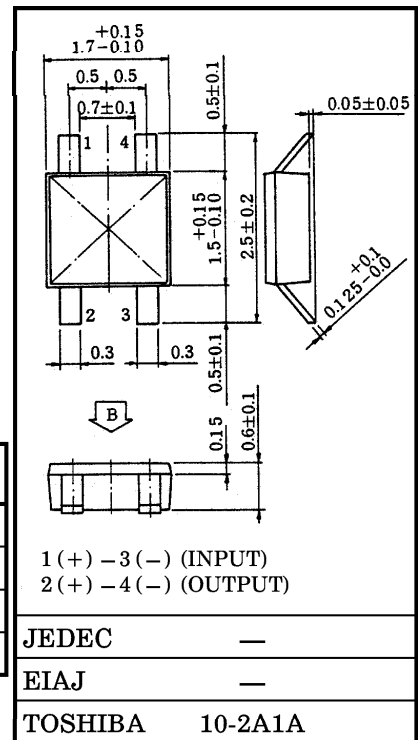
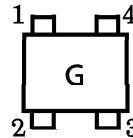
- Super Small Package.
- Excellent Temperature Characteristics.
- Wide Operating Temperature Range. ( ;  $-55\sim 125^{\circ}\text{C}$ )
- Excellent Output Voltage Linearity.
- High Internal Resistance. :  $R_d=1000\Omega$  (Min.)
- Low Residual Voltage Ratio. :  $V_{HO}/V_H = \pm 5\%$  (Max.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Control Voltage	$V_C$	12**	V
Power Dissipation	$P_D$	150**	mW
Operating Temperature Range	$T_{opr}$	$-55\sim 125$	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	$-55\sim 150$	$^{\circ}\text{C}$

\*\* Mounted on a printed circuit board.

Marking



Weight : 0.0047g

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Internal Resistance (Input)	$R_d$	$I_C=1\text{mA}$	1000	1250	1500	$\Omega$
Residual Voltage Ratio	$V_{HO}/V_H$	$V_C=5\text{V}, B=0/B=0.1\text{T}$	—	—	$\pm 5$	%
Hall Voltage (Note 1)	$V_H$	$V_C=5\text{V}, B=0.1\text{T}$	130	150	170	mV
Temperature Coefficient (Note 2)	$V_{HT}$	$I_C=5\text{mA}, B=0.1\text{T}$ $T_1=25^{\circ}\text{C}, T_2=125^{\circ}\text{C}$	—	—	-0.06	$\%/^{\circ}\text{C}$
Linearity (Note 3)	$\Delta K_H$	$V_C=5\text{V}, B_1=0.05\text{T}, B_2=0.1\text{T}$	—	—	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)	$R_{OUT}$	$I_C=1\text{mA}$	1800	2375	3000	$\Omega$

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

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

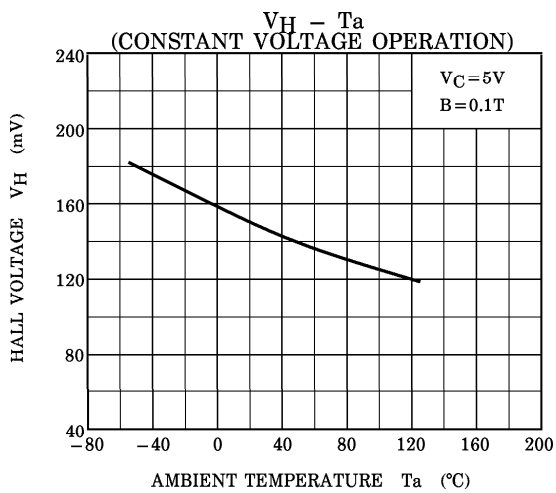
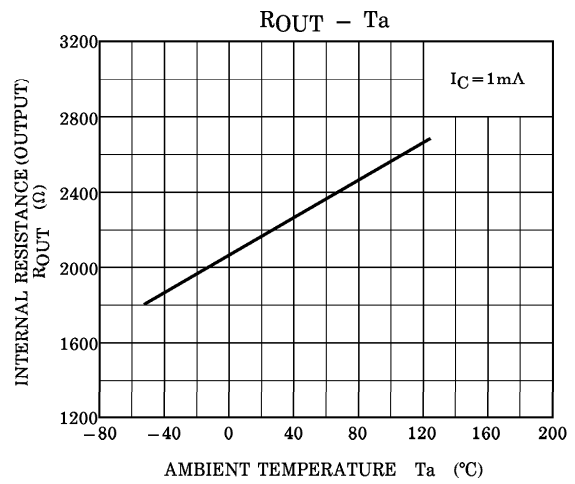
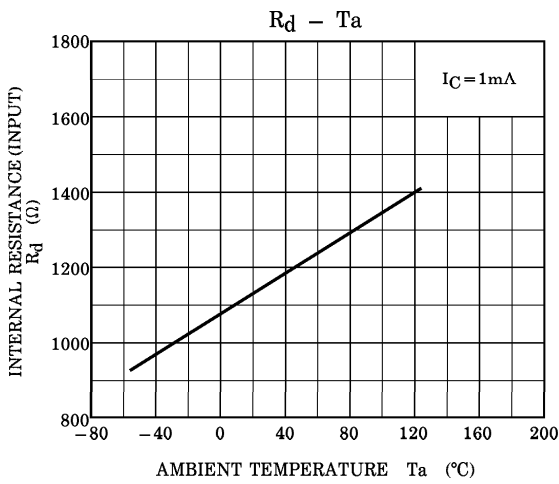
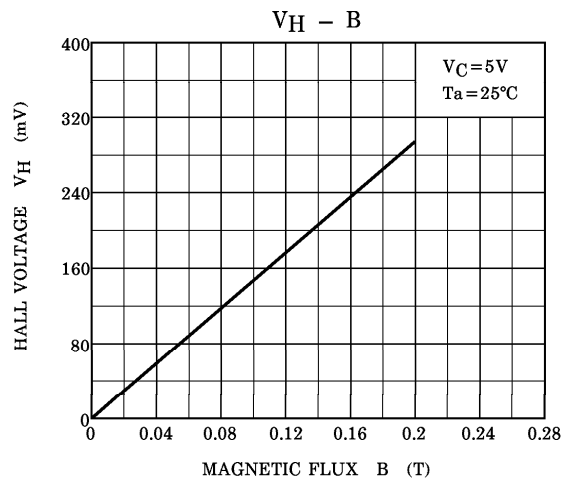
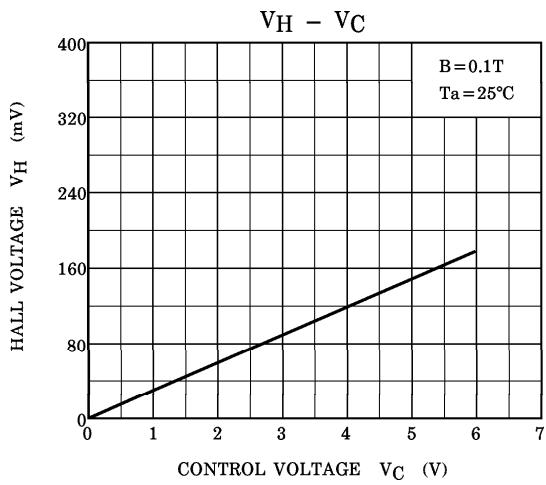
$V_{HO}$  : Residual Voltage

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

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

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