

TOSHIBA HALL SENSOR GaAs ION IMPLANTED PLANAR TYPE

# THS130

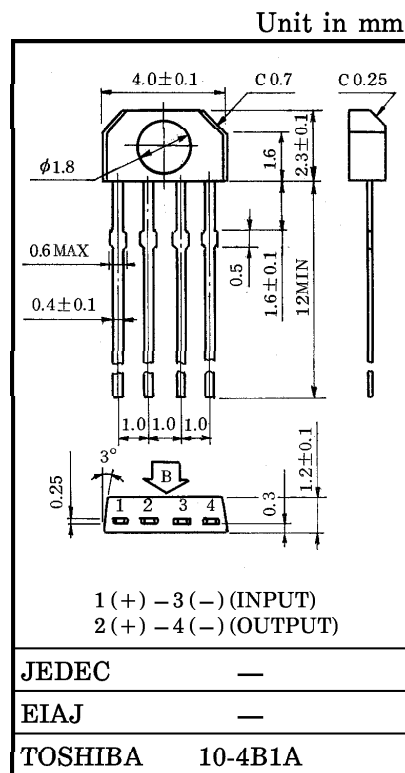
HIGH STABILITY MOTOR CONTROL.

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	RATING	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 : 0.06g

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	$V_{HO} / V_H$	$V_C = 5\text{V}, B = 0 / B = 0.1\text{T}$	—	—	$\pm 10$	%
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)	$\Delta K_H$	$V_C = 5\text{V}, B_1 = 0.05\text{T}, B_2 = 0.1\text{T}$	—	—	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)	$R_{OUT}$	$I_C = 0.5\text{mA}$	4.2	6.0	7.8	$k\Omega$

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

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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