

TOSHIBA HALL SENSOR GaAs ION IMPLANTED PLANAR TYPE

# THS124

HIGH STABILITY MOTOR CONTROL.

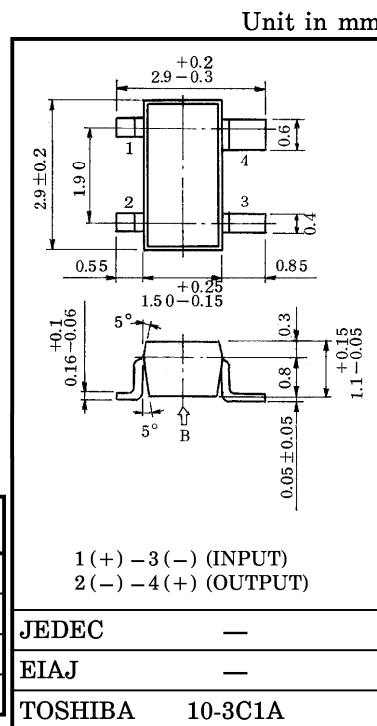
DIGITAL TACHOMETER.

CRANK SHAFT POSITION SENSOR.

- 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.)

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



Weight : 0.013g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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

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

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