TOSHIBA HALL SENSOR GaAs ION IMPLANTED PLANAR TYPE

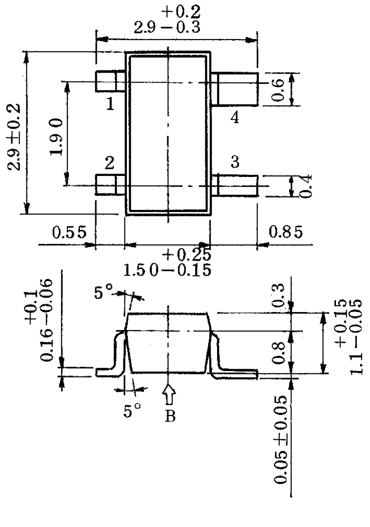
THS128

HIGH STABILITY MOTOR CONTROL.

DIGITAL TACHOMETER.

- High Internal Resistance. : R_d = 2kΩ (Typ.)
- Excellent Temperature Characteristics.
- Wide Operating Temperature Range. (; −55~125°C)
- Excellent Output Voltage Linearity.

Unit in mm



JEDEC	―
EIAJ	―
TOSHIBA	10-3C1A

Weight : 0.013g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RAITING	UNIT
Control Voltage	V_C	6	V
Power Dissipation	P_D	150	mW
Operating Temperature Range	T_{opr}	−55~125	°C
Storage Temperature Range	T_{stg}	−55~150	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Internal Resistance (Input)	R_d	I_C = 1mA	1.6	2.0	2.4	kΩ
Residual Voltage Ratio	V_{HO}/V_H	V_C = 5V, B = 0 / B = 0.1T	―	―	±10	%
Hall Voltage (Note 1)	V_H	V_C = 5V, B = 0.1T	130	150	170	mV
Temperature Coefficient (Note 2)	V_{HT}	I_C = 1mA, 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 = 0.5mA	4.2	6.0	7.8	kΩ

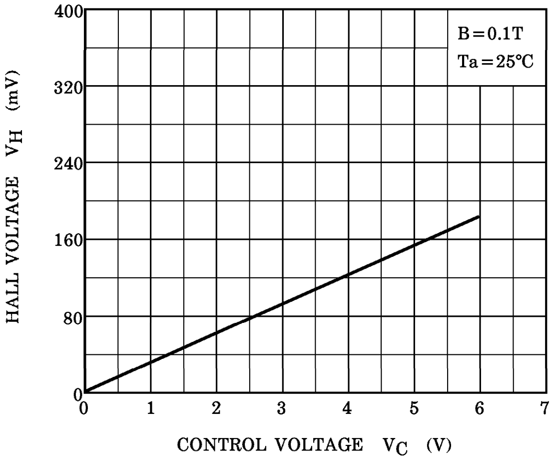
Note 1 : $V_H = V_{HM} - V_{HO}$ (V_{HM} is meter indication)

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

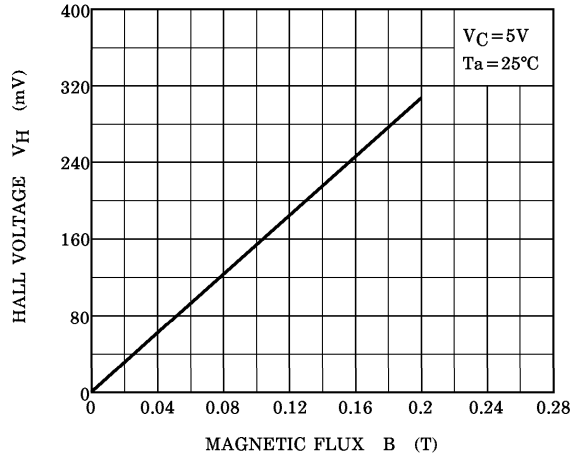
Note 3 : $\Delta K_H = \frac{K_{H(B2)} - K_{H(B1)}}{1/2\{K_{H(B1)} + K_{H(B2)}\}} \times 100$ (%) , $K_H = \frac{V_H}{I_C \cdot B}$ K_H : Product Sensitivity

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

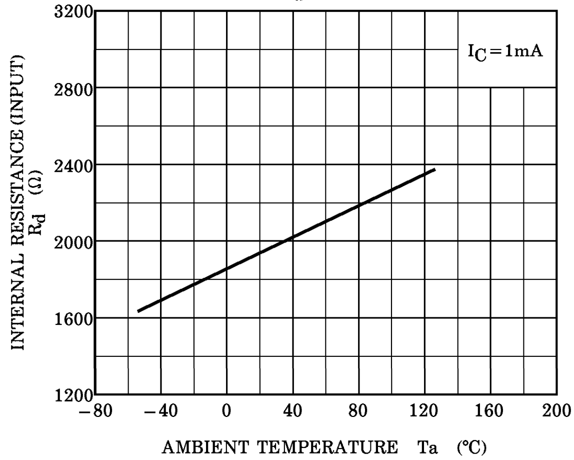
$V_H - V_C$



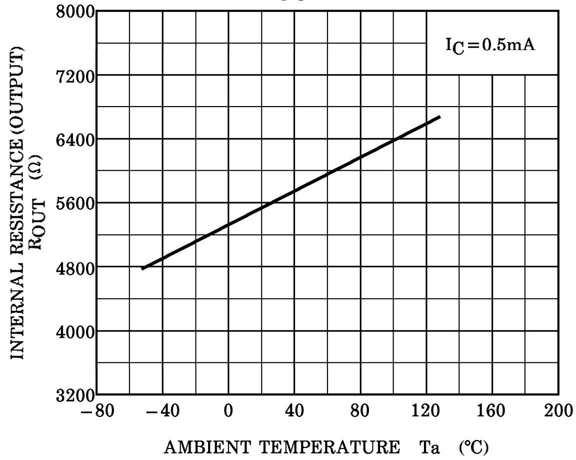
$V_H - B$



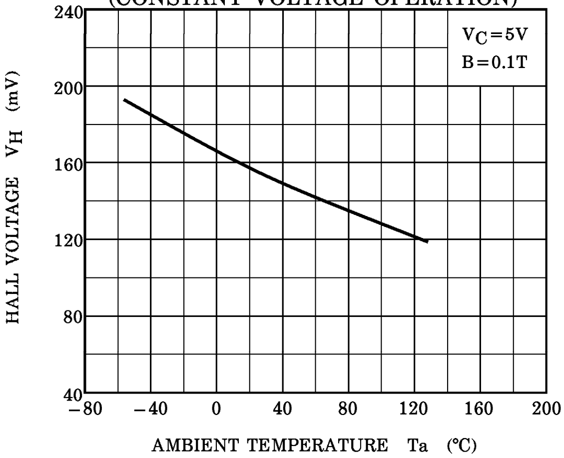
$R_d - Ta$



$R_{OUT} - Ta$



$V_H - Ta$
(CONSTANT VOLTAGE OPERATION)



RESTRICTIONS ON PRODUCT USE

000707EAA

- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
  In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..
- The TOSHIBA products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These TOSHIBA products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of TOSHIBA products listed in this document shall be made at the customer's own risk.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.