

DN6844S

Hall IC (Operating Supply Voltage Range $V_{CC}=3.6$ to 16V, Operating in Alternative Magnetic Field)

Overview

The DN6844S is an integrated circuit making use of Hall effects. It is designed particularly for operating at a low supply voltage in alternative magnetic field. It is suitable for various sensors and contactless switches.

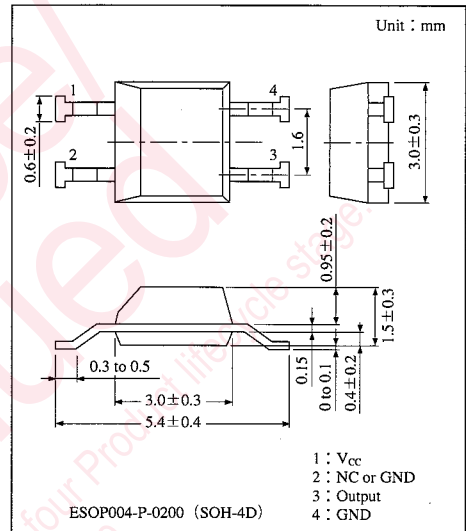
Features

- Wide range of supply voltage : 3.6 to 16V
- Operating in alternative magnetic field
- TTL and MOS ICs directly drivable by output
- Semipermanent service life because of no contact parts
- Drivable with a small magnet
- 4-pin PANAFLAT package (SOH-4D)

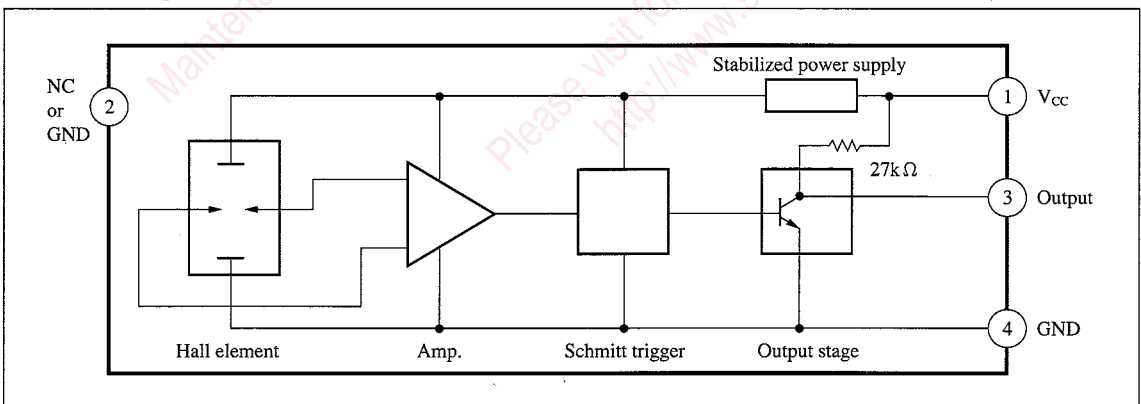
Applications

- Speed sensors
- Position sensors
- Rotation sensors
- Keyboard switches
- Microswitches

Note) This IC is not suitable for car electrical equipment.



Block Diagram



■ Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

| Parameter | Symbol | Rating | Unit |
|-------------------------------|-----------|-------------|------------------|
| Supply voltage | V_{CC} | 18 | V |
| Supply current | I_{CC} | 8 | mA |
| Circuit current | I_O | 20 | mA |
| Power dissipation | P_D | 100 | mW |
| Operating ambient temperature | T_{opr} | -40 to +85 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +125 | $^\circ\text{C}$ |

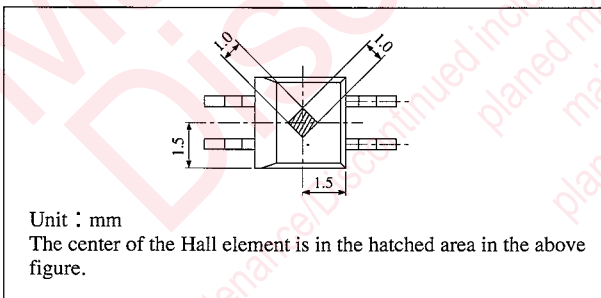
■ Electrical Characteristics ($T_a=25^\circ\text{C}$)

| Parameter | Symbol | Condition | min | typ | max | Unit |
|------------------------------|----------------|---|------|-----|-----|------|
| Operating flux density | B_1 (L to H) | $V_{CC}=12\text{V}$ | -30 | — | — | mT |
| | B_2 (H to L) | $V_{CC}=12\text{V}$ | — | — | 30 | mT |
| Low output voltage | V_{OL} | $V_{CC}=16\text{V}$, $I_O=12\text{mA}$, $B=30\text{mT}$ | — | — | 0.4 | V |
| | | $V_{CC}=3.6\text{V}$, $I_O=12\text{mA}$, $B=30\text{mT}$ | — | — | 0.4 | V |
| High output voltage | V_{OH} | $V_{CC}=16\text{V}$, $I_O=-30\mu\text{A}$, $B=-30\text{mT}$ | 14.6 | — | — | V |
| | | $V_{CC}=3.6\text{V}$, $I_O=-30\mu\text{A}$, $B=-30\text{mT}$ | 2.2 | — | — | V |
| Output short-circuit current | $-I_{OS}$ | $V_{CC}=16\text{V}$, $V_O=0\text{V}$, $B=-30\text{mT}$ | 0.4 | — | 0.9 | mA |
| Supply current | I_{CC} | $V_{CC}=16\text{V}$ | — | — | 6 | mA |
| | | $V_{CC}=3.6\text{V}$ | — | — | 5.5 | mA |

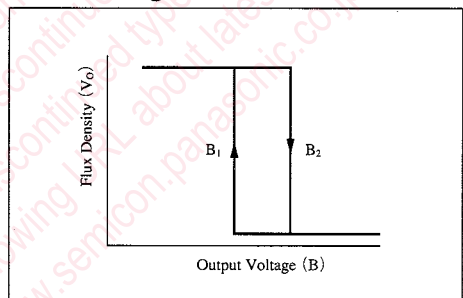
Note 1) Operating supply voltage range $V_{CC}(\text{opr})=3.6$ to 16V

Note 2) For the operating flux density, ± 200 mT is also available as Rank A.

■ Hall Element Position



■ Flux-Voltage Conversion Characteristics



■ Precaution on Use

1. Change of the operation magnetic flux density dose not depend on the supply voltage, because the stabilization power supply is built-in.
(only for the range; $V_{CC}=4.5$ to 16V)
2. Change from "H" to "L" level increases the supply current by approx. 1mA.

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