

DN6851

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

Overview

The DN6851 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.

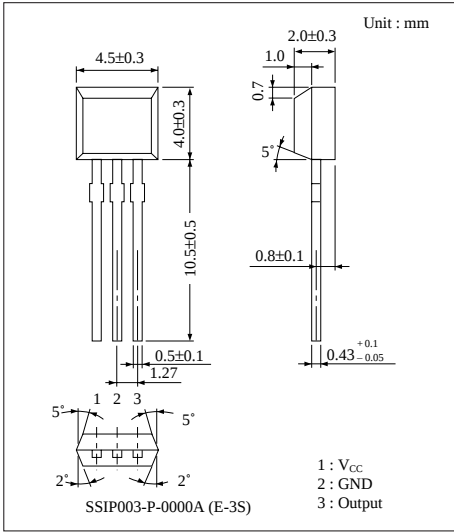
Features

- Wide range of supply ; 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
- 3-pin SIL plastic package (3-SIP)

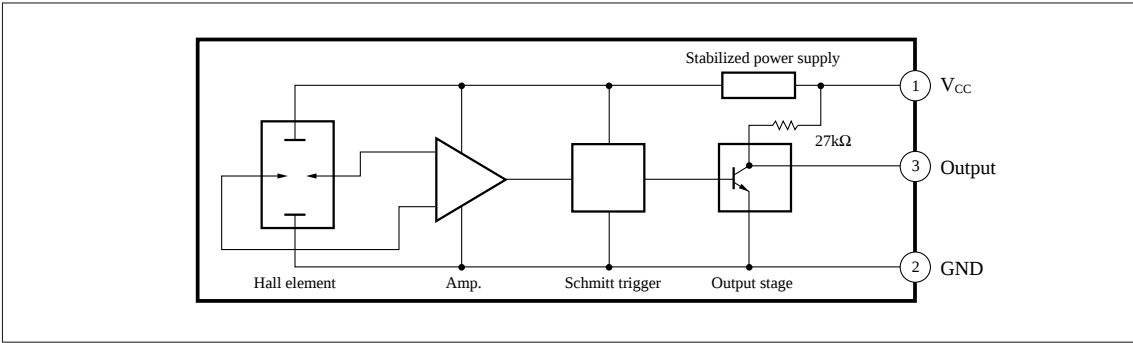
Applications

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

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



Block Diagram



Absolute Maximum Ratings (Ta=25°C)

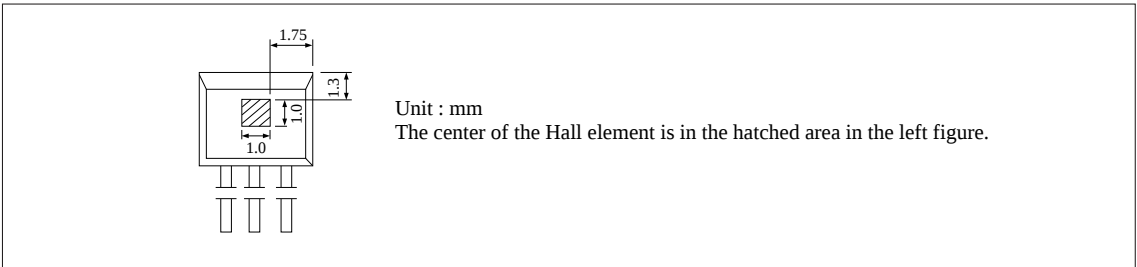
Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	18	V
Supply current	I_{CC}	8	mA
Circuit current	I_O	20	mA
Power dissipation	P_D	100	mW
Operating ambient temperature	T_{opr}	-40 to +85	°C
Storage temperature	T_{stg}	-55 to +125	°C

Electrical Characteristics (Ta=25°C)

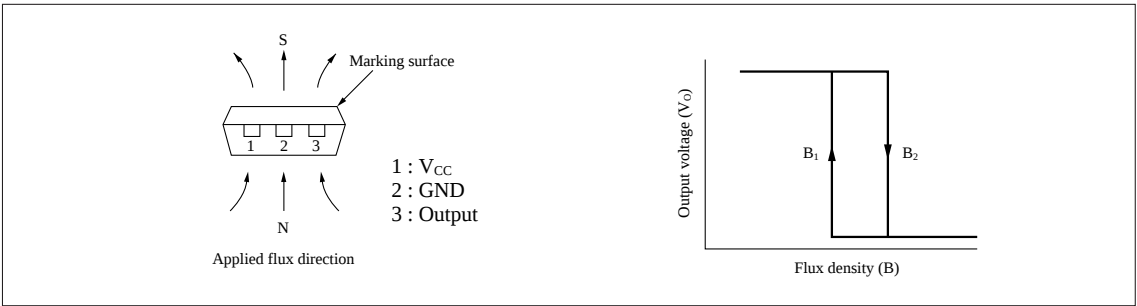
Parameter	Symbol	Condition	min	typ	max	Unit
Operating flux density	B ₁ (L to H)	V _{CC} =12V	-30	—	—	mT
	B ₂ (H to L)	V _{CC} =12V	—	—	30	mT
Low output voltage	V _{OL}	V _{CC} =16V, I _O =12mA, B=30mT	—	—	0.4	V
		V _{CC} =3.6V, I _O =12mA, B=30mT	—	—	0.4	V
High output voltage	V _{OH}	V _{CC} =16V, I _O =-30μA, B=-30mT	14.6	—	—	V
		V _{CC} =3.6V, I _O =-30μA, B=-30mT	2.2	—	—	V
Output short-circuit current	-I _{OS}	V _{CC} =16V, V _O =0V, B=-30mT	0.4	—	0.9	mA
Supply current	I _{CC}	V _{CC} =16V	—	—	6	mA
		V _{CC} =3.6V	—	—	5.5	mA

Note 1) Operating supply voltage range V_{CC} (opr)= 3.6 to 16V
Note 2) For the operating flux density, ±20 gauss 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.