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DN6853

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

■ Overview

The DN6853 is an integrated circuit making use of Hall effects. It is designed particularly for operating at a low supply voltage with the alternating field. It is suitable for various sensors and contactless switches.

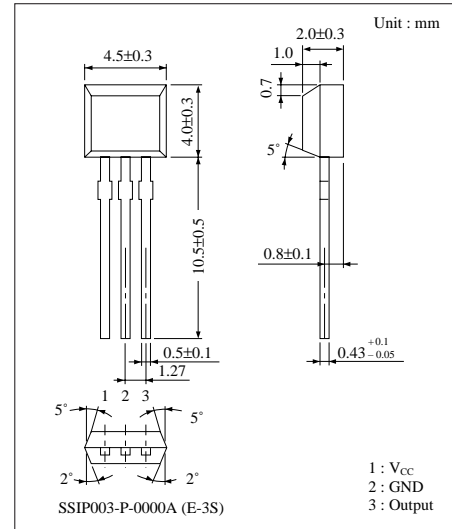
■ Features

- 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
- 3-pin SIL plastic package (3-SIP)
- Open collector

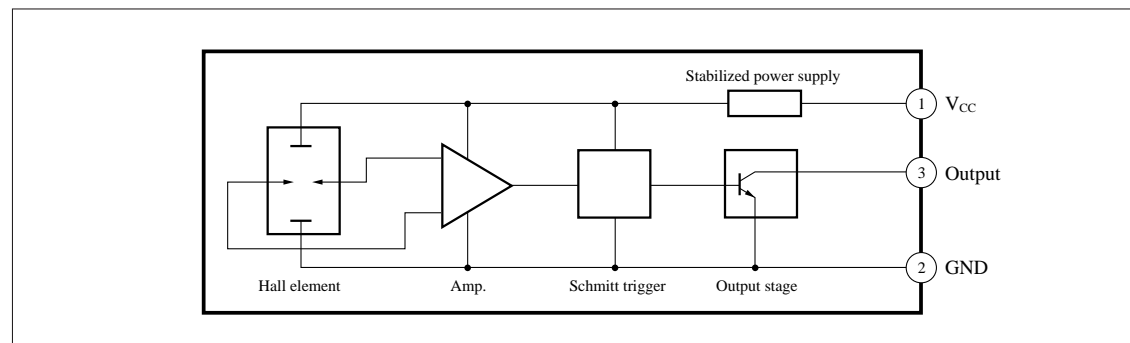
■ Applications

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

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



■ Block Diagram



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

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	$^\circ\text{C}$

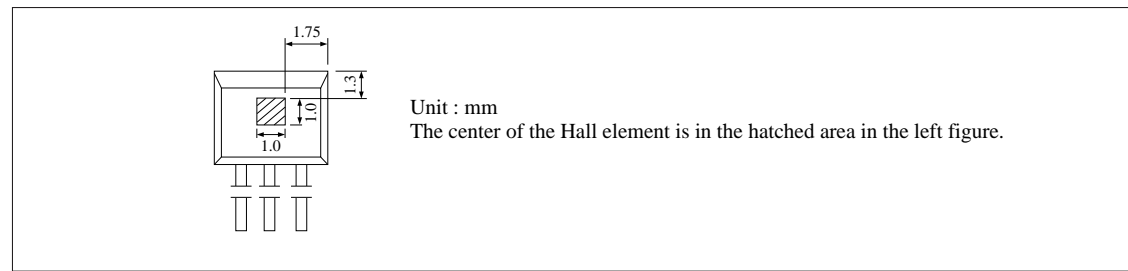
■ Electrical Characteristics (Ta=25°C)

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 current	I _{OH}	V _{CC} =16V, V _O =18V, B=-30mT	—	—	10	μA
		V _{CC} =3.6V, V _O =18V, B=-30mT	—	—	10	μA
Supply current	I _{CC}	V _{CC} =16V	—	—	6	mA
		V _{CC} =3.6V	—	—	5.5	mA

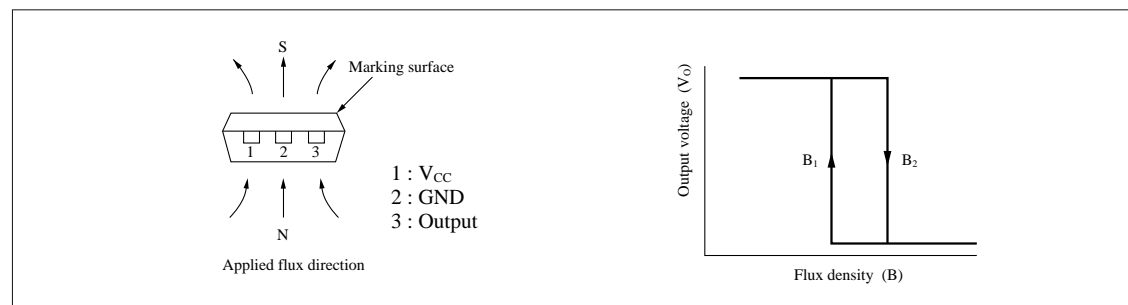
Note 1) Operating supply voltage range V_{CC} (opr)= 3.6 to 16V

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

■ Hall Element Position



■ Flux-Voltage Conversion Characteristics



■ Precaution on Use

- 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)
- Change from "H" to "L" level increases the supply current by approx. 1mA.