Ordering number: EN 2635

Monolithic Digital IC

SANYO No.2635

LB9051

Switching Type Hall IC

The LB9051 is a Hall IC that is operated in the presence of an alternating magnetic field and produces a digital output. The LB9051 contains a silicon Hall generator, an amplifier, a Schmitt trigger circuit on chip and especially suited for detection of magnetism (ex. detection of the rotation of a small magnet-used substance).

Applications

- Detection of magnetism
- Contactless switch
- Detection of the rotation, position of a magnetic substance

Features

- Operated in the presence of an alternating magnetic field
- Wide operating voltage range (3.6 to 16V)
- Output capable of direct driving a TTL, MOS IC
- High sensitivity (sensitive to low magnetism)

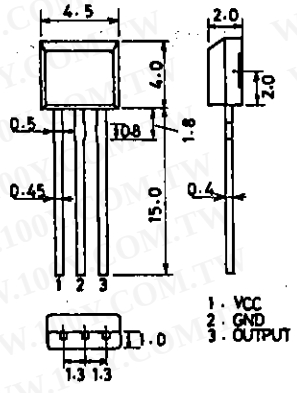
Absolute Maximum Ratings at Ta=25°C

				unit
Maximum Supply Voltage	V_{CC}max		18	V
Maximum Supply Current	I_{CC}max		8	mA
Maximum Output Current	Iomax		20	mA
Allowable Power Dissipation	Pdmax	Ta=80°C	100	mW
Operating Temperature	Topr		-40 to +85	°C
Storage Temperature	Tstg		-55 to +125	°C

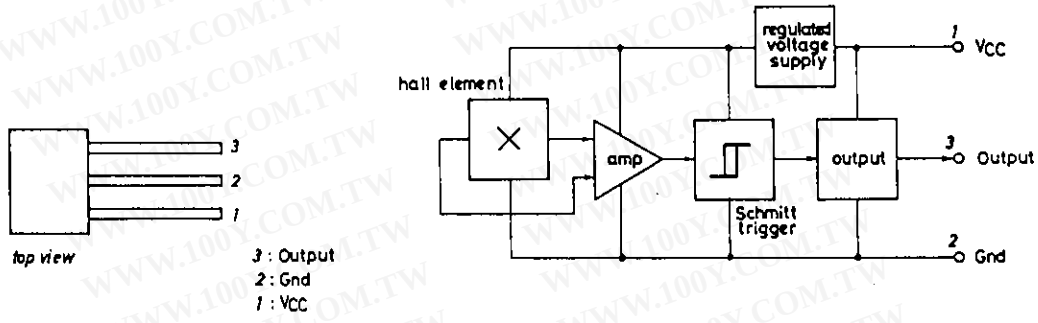
Electrical Characteristics at Ta=25°C

			min	typ	max	unit
Release Point	B_{LH}	V_{CC}=12V, Vo: L→H	-300			Gauss
Operate Point	B_{HL}	V_{CC}=12V, Vo: H→L			300	Gauss
Output 'L'-Level Voltage	V_{OL1}	V_{CC}=16V, Io=12mA, B=300Gauss			0.4	V
	V_{OL2}	V_{CC}=3.6V, Io=12mA, B=300Gauss			0.4	V
Output 'H'-Level Voltage	V_{OH1}	V_{CC}=16V, Io=-30μA, B=-300Gauss	14.6			V
	V_{OH2}	V_{CC}=3.6V, Io=-30μA, B=-300Gauss	2.2			V
Output Short Current	$-I_{OS}$	V_{CC}=16V, Vo=0V, B=-300Gauss	0.4		0.9	mA
Supply Current	I_{CC1}	V_{CC}=16V			6	mA
	I_{CC2}	V_{CC}=3.6V			5.5	mA

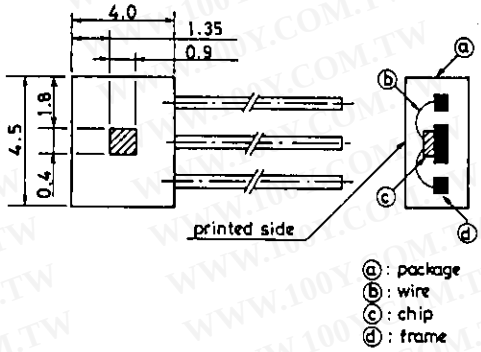
Package Dimensions
(unit: mm)
3105



Pin Assignment and Block Diagram



Location of the Hall Generator and Cross-sectional View of the Hall IC



The Hall generator is located in the dashed area.

Magnetic Flux to Electric Voltage Transduce Characteristic