

# LT251A

## ■ Features

- Operation by small magnet due to high sensitivity operating point < 30mT
- Combining a GaAs Hall device and an IC in a compact package (2.9 X 1.5 X 1.1mm)
- Wide operation temperature range obtained by GaAs Hall device (-20 to +125°C)
- Long life time due to noncontact-type

## ■ Applications

- FDD
- HDD
- Water meter
- Car stereo
- Micro switch, etc.

## ■ Absolute Maximum Ratings

(T<sub>a</sub>=25°C)

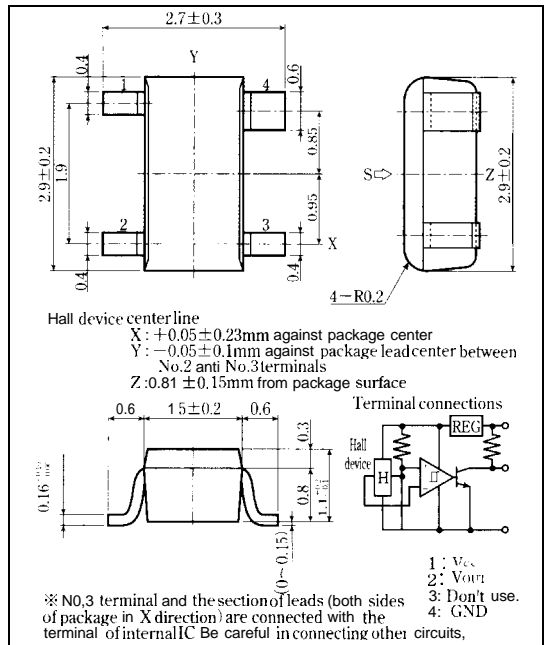
Parameter	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	18	v
Output voltage	V <sub>OUT</sub>	18	V
Output current	I <sub>O</sub>	5	mA
Power dissipation	P <sub>D</sub>	100	mW
Operating temperature	T <sub>opr</sub>	-20 to +125	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C
Soldering temperature*1	T <sub>sol</sub>	260	°C

\*1 Soldering time within 10 seconds

## GaAs Hall IC for Noncontact Switch (Unidirectional magnetic field-type)

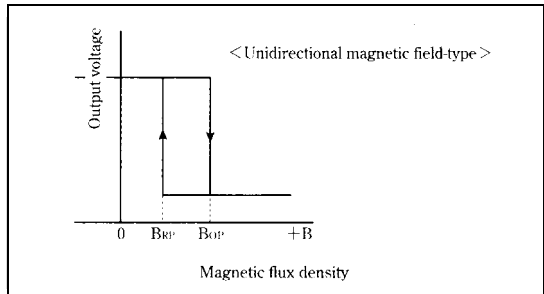
### ■ Outline Dimensions

(Unit : mm)



As for dimensions of tape-packaged products, refer to page 44.

### ■ Operating Explanation



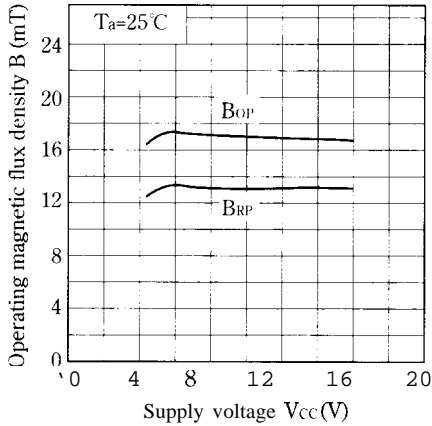
### ■ Electrical Characteristics

(T<sub>a</sub>=25°C)

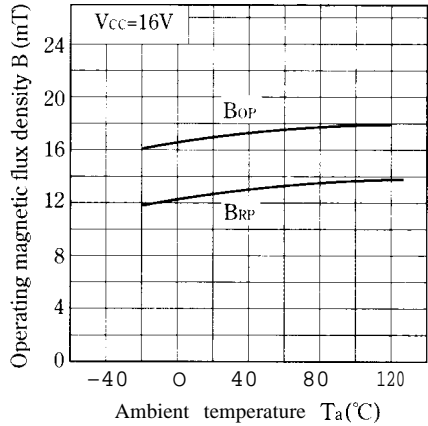
Parameter	Symbol	Conditions	MIN.	m'	MAX.	Unit
Operating magnetic flux density	B <sub>OP</sub>	V <sub>CC</sub> = 16V	11	—	30	mT
	B <sub>RP</sub>		10	—	29	mT
Hysteresis breadth	B <sub>H</sub>		1	—	5	mT
operating voltage	V <sub>CC</sub>		4.5	—	16	v
Supply current	I <sub>CC</sub>	V <sub>CC</sub> = 16V, B ≤ 10mT	—	—	10.5	mA
Low level output voltage	V <sub>l</sub>	V <sub>CC</sub> = 16V, I <sub>O</sub> = 4mA, B ≥ 30mT	—	—	0.4	v
High level output voltage	V <sub>OH</sub>	V <sub>CC</sub> = 16V, I <sub>O</sub> = -100 μA, B ≤ 10mT	13.9	—	—	v
Output short circuit current	I <sub>OS</sub>	V <sub>CC</sub> = 16V	-1.55	—	-0.80	mA
Operating point temperature drift	ΔB <sub>OP</sub>	V <sub>CC</sub> = 16V, T <sub>a</sub> = -5°C to +60°C	—	2.0	4.5	mT
		V <sub>CC</sub> = 16V, T <sub>a</sub> = -20°C to +80°C	—	2.5	8.0	mT

**SHARP**

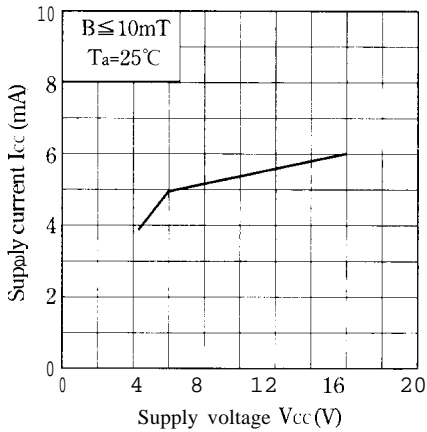
**Fig. 1 Operating Magnetic Flux Density vs. Supply Voltage**



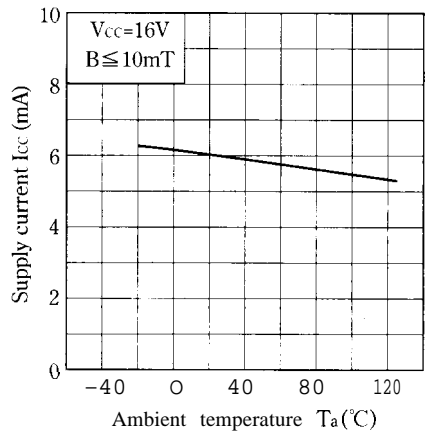
**Fig. 2 Operating Magnetic Flux Density vs. Ambient Temperature**



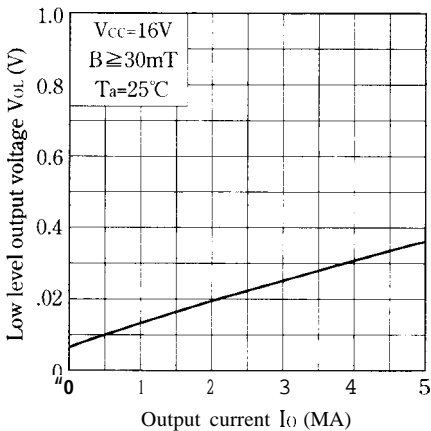
**Fig. 3 Supply Current vs. Supply Voltage**



**Fig. 4 Supply Current vs. Ambient Temperature**



**Fig. 5 Low Level Output Voltage vs. Output Current**



**Fig. 6 Low Level Output Voltage vs. Ambient Temperature**

