

LT253A

■ Features

- Operation by small magnet due to high sensitivity Operating point<30mT
- Combining a GaAs Hall device and an IC in a compact package (2.9X1.5X1.1mm)
- 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
- Microswitch, etc.

■ Absolute Maximum Ratings

(T_a=25°C)

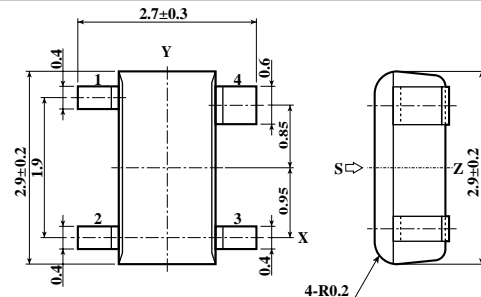
Parameter	Symbol	Rating	Unit
Supply voltage	V _{CC}	18	V
Output voltage	V _{OUT}	18	V
Output current	I _O	5	mA
Power dissipation	P _D	100	mW
Operating temperature	T _{opr}	-20 to +125	°C
Storage temperature	T _{stg}	-55 to +150	°C
Soldering temperature*1	T _{sol}	260	°C

*1 Soldering time : within 10 seconds

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

■ Outline Dimensions

(Unit : mm)

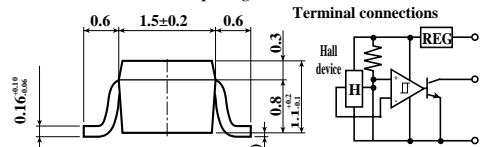


Hall device center line

X : +0.05±0.23mm against package center

Y : -0.05±0.1mm against package lead center between No.2 and No.3 terminals

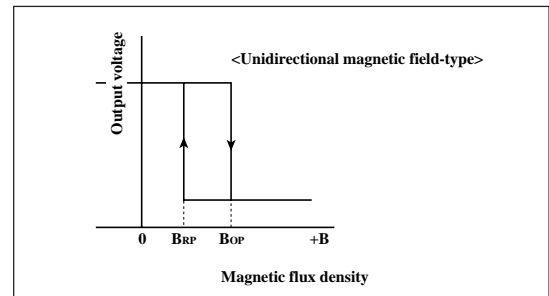
Z : 0.81±0.15mm from package surface



*No.3 terminal and the section of leads(both sides of package in X direction) are connected with the terminal of internal IC. Be careful in connecting other circuits.

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

■ Operating Explanation



■ Electrical Characteristics

(T_a=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Operating magnetic flux density	B _{OP}	V _{CC} =16V	-	18	30	mT
	B _{RP}	V _{OO} =16V	10	16	-	mT
Hysteresis breadth	B _H	R _L =10kΩ	-	2	5	mT
Operating voltage	V _{CC}		4.5	-	16	V
Supply current	I _{CC}	V _{CC} =16V, B=<<10mT	-	-	10.5	mA
Low level output voltage	V _{OL}	I _O =4mA, B>=30mT	-	-	0.4	V
Output leakage current	I _{OH}	V _{CC} =16V, B=<10mT, V _{OO} =16V	-	-	10	μA
Operating point temperature drift	ΔB _{OP}	V _{CC} =16V, T _a =-5°C to+60°C	-	2.0	4.5	mT
		V _{CC} =16V, T _a =-20°C to+80°C	-	2.5	8.0	mT

SHARP

In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.

Fig. 1 Operating Magnetic Flux Density vs. Supply Voltage

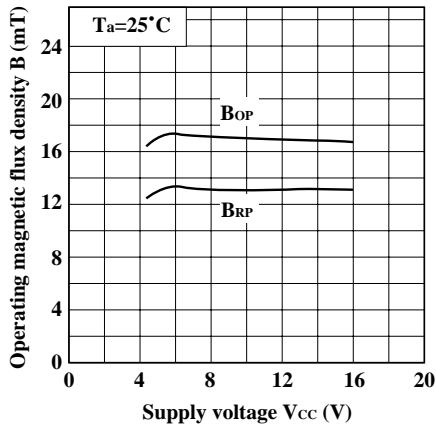


Fig. 2 Operating Magnetic Flux Density vs. Ambient Temperature

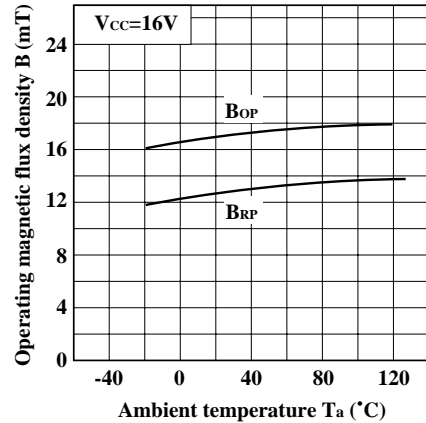


Fig. 3 Supply Current vs. Supply Voltage

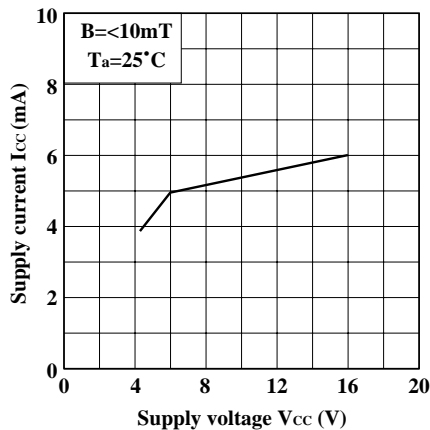


Fig. 4 Supply Current vs. Ambient Temperature

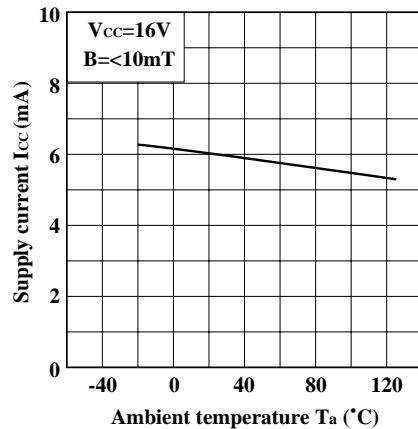


Fig. 5 Low Level Output Voltage vs. Output Current

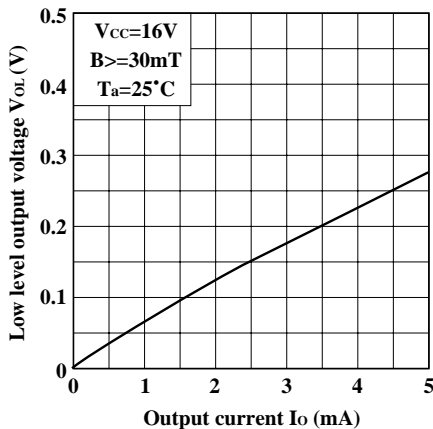


Fig. 6 Low Level Output Voltage vs. Ambient Temperature

