LT202A

GaAs Hall IC for Fan Motor

■ Features

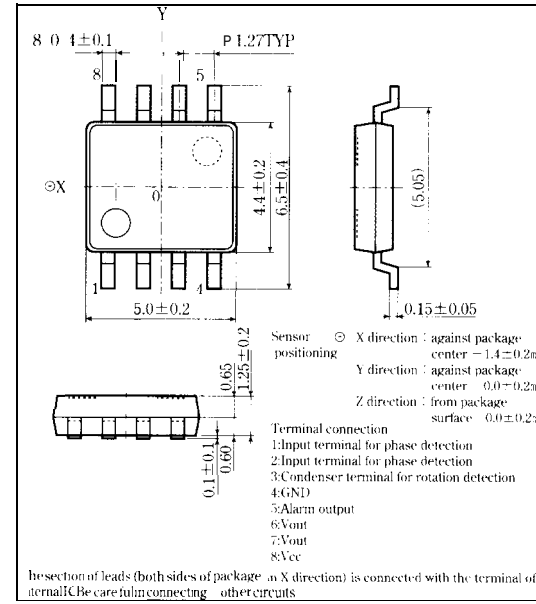
- Increasing the efficiency of motor rotation due to cutting the electric current which doesn't contributing to rotation
- Combining a GaAs Hall device and a driver IC in a compact 8-pin SOP package
- operation in low magnetic flux density (10mT) due to applied high sensitive Hall device
- Built-in protection circuit, alarm output and automatic restart circuit

■ Applications

. Brushless fan motors

1. Cooling fan motors for personal computers, word processors, etc.
2. Directly cooling fan motors for cooling fin, PCB, etc.
3. Fan motors for air circulation of temperature sensor in air conditioner

■ Outline Dimensions (Unit : mm)



■ Absolute Maximum Ratings

(T_a=25℃)

Parameter	Symbol	Conditions	Rating	Unit
Supply voltage	V_{CC}		30	v'
output voltage	V()		55	V
Output current (peak)	I_{OMAX}	V_{CC}−12V	750	mA
		V_{CC}=24V	450	mA
Output current (continuous)	I_O	V_{CC}=12V	250	mA
		V_{CC}=24V	150	mA
Coil input voltage	V_{IN}		−0.2 to 0.2	V
Alarm output sink current	I_{SINK}		5	mA
Power dissipation	P_D		400"	mW
Oparating temperature	T_{opr}		−20 to +80	C
Storage temperature	T_{stg}		−55 to +150	C
Soldering temperature"'	T_{sol}		260	°C

※ 1 Soldering time : within 10 seconds

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

■ Electrical Characteristics

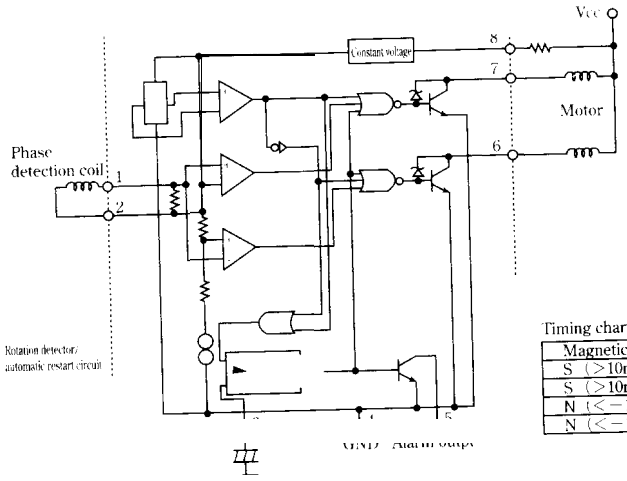
(T_a=25℃)

Parameter	Symbol	Conditions	MIN	TYP.	MAX.	Unit
Output saturation voltage	V(I1 ")	I_O=250mA, V_{CC} = 12V	−		1,5	v
Output cut-off current	I_{OC}	V0= 55V	−	−	30	μA
Operating supply voltage	V_{CC}	※	8	−	28	V
Supply current	I_{CC}	At no-load	−	−	13	mA
Operating magnetic flux density	B_1		−1 o	−	−	m 1
	B_2			−	10	mT
Coil input sensitivity	V_{IN}		15	−	−	mV
Alarm output saturation voltage	V_{SAT}	I_{SINK}=4mA	−		0.5	V
Alarm output leakage current	I_{LEAK}	V=28V	−	−	15	μA

(Note) Unspecified condition is Vcc=24V.

※ In case of oscillating from power supply due to wiring, connect a condenser between 8-pin (Vcc) and 4-pin (GND).

Block Diagram and Timing



Timing chart

Magnetic pole	Coil input (1 : 2)	OUT 6	OUT 7
S (>10mT)	$V_1-V_2 \leqq 0$	OFF	ON
S (>10mT)	$V_1-V_2 > 15mV$	OFF	OFF
N (<−10mT)	$V_1-V_2 < -15mV$	OFF	OFF
N (<−10mT)	$V_1-V_2 \geqq 0$	ON	OFF

Fig. 1 Output Saturation Voltage vs. Ambient Temperature

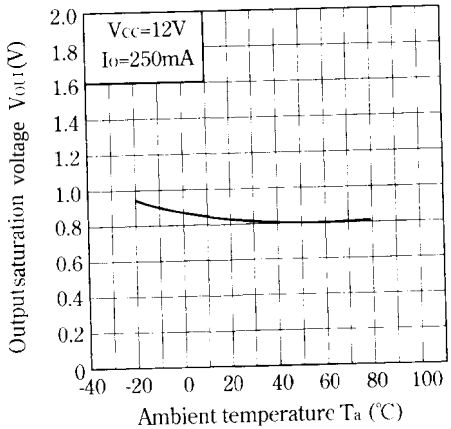


Fig 2 Output Saturation Voltage vs. Input Current (Continuous)

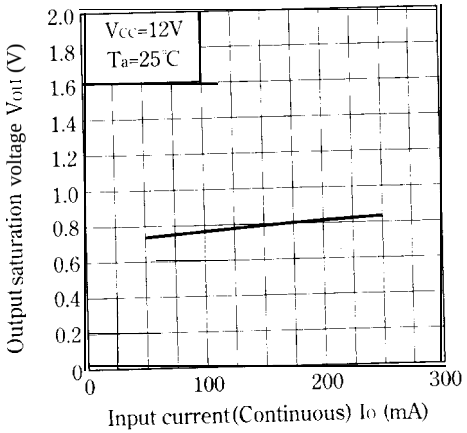


Fig. 3 Supply Current vs. Ambient Temperature

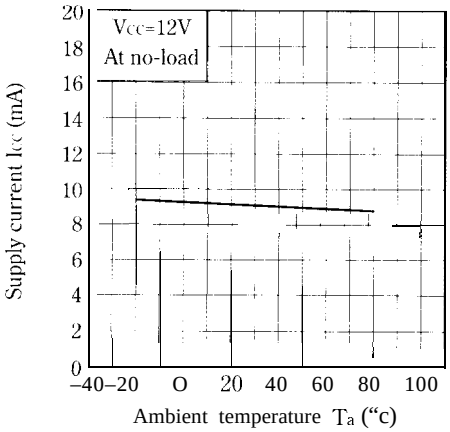


Fig. 4 Supply Current vs. Supply Voltage

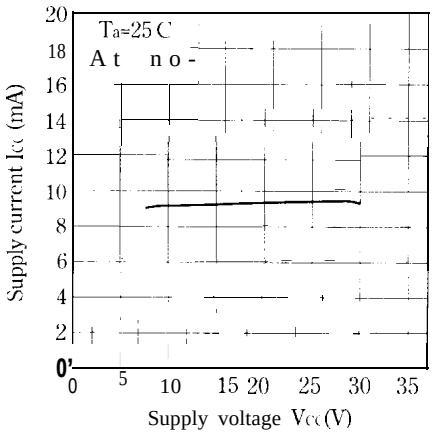


Fig. 5 Coil Input Sensitivity vs. Ambient Temperature

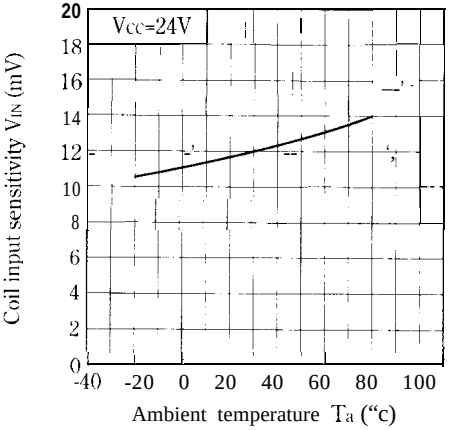


Fig. 6 Operating Magnetic Flux Density vs. Ambient Temperature

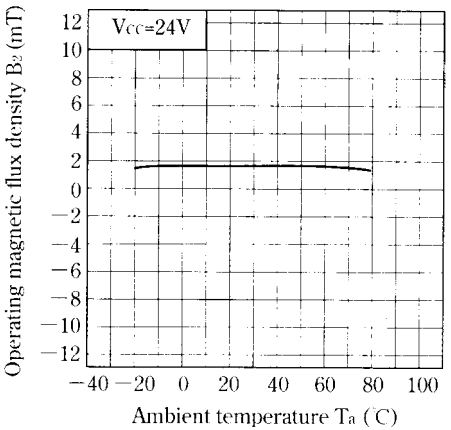


Fig. 7 Alarm Output Saturation Voltage vs. Ambient Temperature

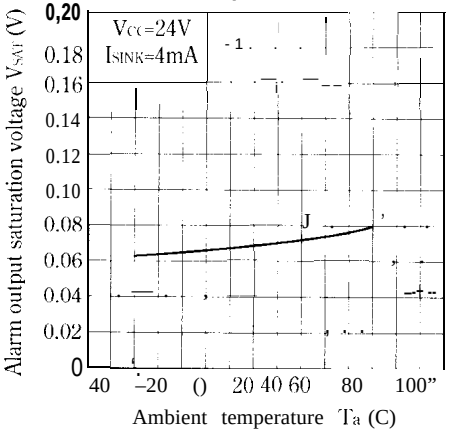


Fig. 8 Alarm Output Saturation Voltage vs. Alarm Output Sink Current