

◆ General Description

The GH3562 is a Low-Voltage and Low-Power linear Hall effect sensor. The sensitivity can be adjusted in a small range according to customer requirements. It is widely used in the handle keys detection of 3D joystick such as cameras, drones, gaming consoles, household appliances.

The GH3562 can operate over the supply of 1.6V to 3.6V, and the quiescent output voltage is at half the supply voltage. The GH3562 have the ability to switch between Awake mode and Sleep mode timely by user, which greatly reduces the overall power consumption of the chip. It uses externally controlled ENABLE pin to control operating modes. During sleep mode, the output terminal is

in the high impedance, and the quiescent current of the chip drops to uA level.

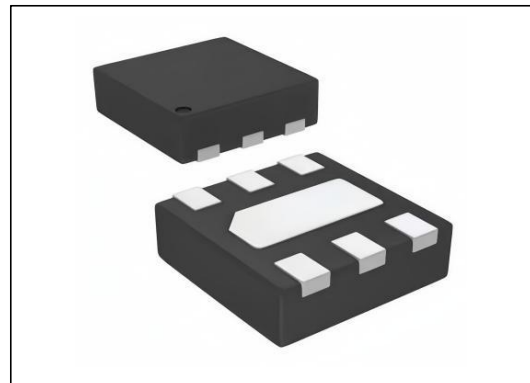


Figure 1. Package Type of GH3562

◆ Features

- Operating voltage range: 1.6~3.6V DC
- Low-Power: 1.8V 1.15mA, 3.3V 2.55mA
- Sensitivity: 1.8V 2.05mV/GS, 3.3V 4.5mV/GS
- Power consumption in sleep mode: 60uA
- Linearity error: $\pm 1.2\%$

◆ Applications

- Joysticks of game console control handle
- Selfie stick angle detection
- Door, lid and pallet position detection accurately
- Liquid level detection
- Medical equipment

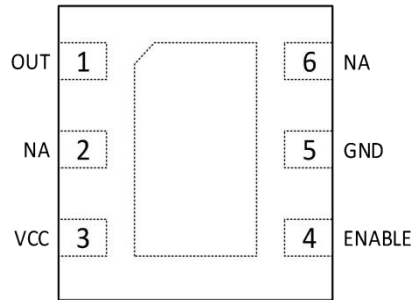
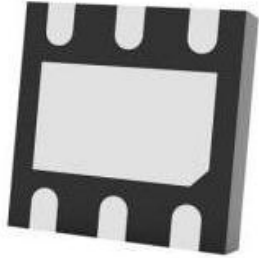
◆ Product Selection

Product	Operating voltage	Operating Power (VCC=1.8V)	Sleeping Power	Operating Temperature	Sensitivity (VCC=1.8V)	Linearity error	Package	Packing Type	Quantity
GH3562	1.6~3.6V	1.15mA	60uA	-20~85°C	2.05mV/GS	$\pm 1.2\%$	DFN2020-6L/ DFN1616-6L	Tape and reel	3000

◆ Order Information

Product	Model	Package
GH3562	GH3562DA6	DFN2.0*2.0*6L
	GH3562DB6T	DFN1.6*1.6*6L
	GH3562DB3T	DFN1.6*1.6*3L

◆ Pin Configuration



Pin Number	Pin Name	Function
1	OUT	Output
2	NA	Null
3	VCC	Supply Voltage
4	ENABLE	Awake/Sleep
5	GND	Ground
6	NA	Null

◆ Functional Block Diagram

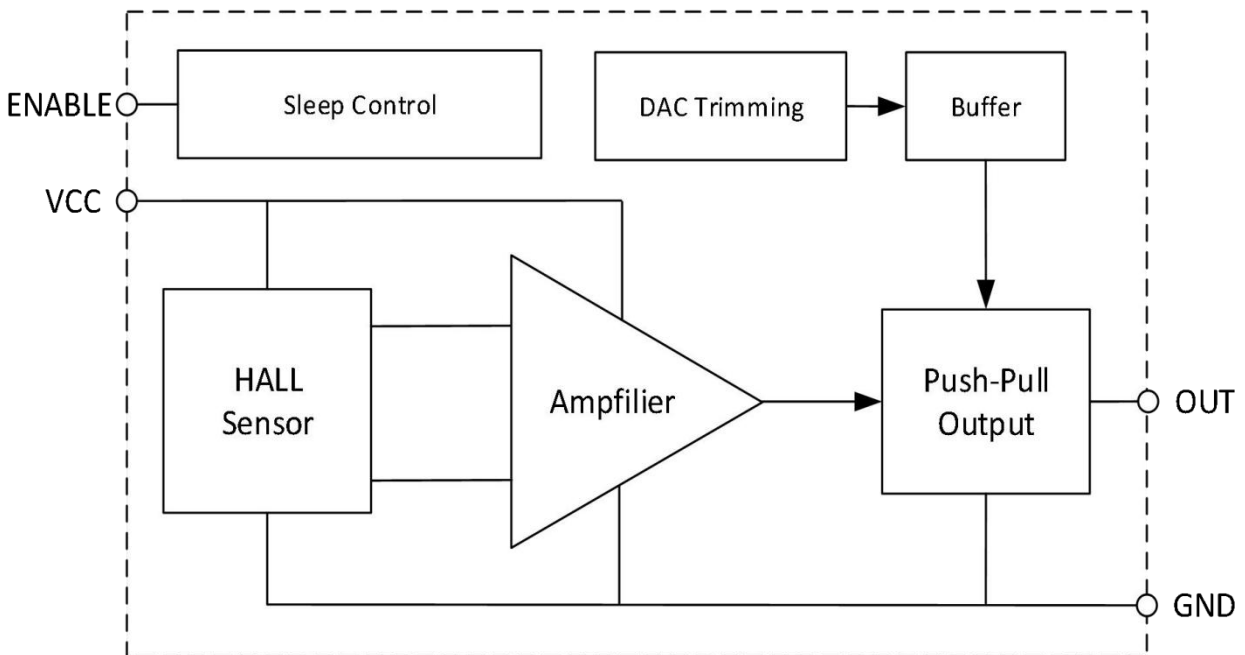


Figure 2 Block Diagram of GH3562

◆ Absolute Maximum Ratings (Note)

Parameter	Symbol	Value	Unit
Supply voltage	V_{CC}	5	V
ENABLE voltage	V_{EN}	5	V
Output low level current	$I_{OUT(SINK)}$	8	mA
Operation temperature	T_{OP}	-20~+85	°C
Storage temperature	T_{ST}	-40~+150	°C

Note:

- 1) If any one of the maximum rating is exceeded, the device may be damaged.
- 2) The maximum power supply voltage that can work normally must be adjusted according to the constraints of junction temperature and power consumption.

◆ Electrical Characteristics (Enable = High, $T_A=25^\circ\text{C}$)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Supply voltage	V_{CC}	Operating	1.60	--	3.60	V
Output voltage	V_{OUT}	$V_{CC}=3.3\text{V}, B=0\text{GS}$	1.49	1.65	1.82	V
		$V_{CC}=1.8\text{V}, B=0\text{GS}$	0.80	0.90	1.00	V
Supply current	I_{CC}	$V_{CC}=3.3\text{V}$	2.35	2.55	2.75	mA
		$V_{CC}=1.8\text{V}$	1.05	1.15	1.30	mA
Sensitivity	Sens	$V_{CC}=3.3\text{V}$	3.80	4.15	4.50	mV/GS
		$V_{CC}=1.8\text{V}$	1.70	1.90	2.10	mV/GS
Max Output Voltage	V_H	$R_L \geq 4.7\text{k}\Omega$	--	--	$V_{CC}-0.1$	V
Min Output Voltage	V_L	$R_L \geq 4.7\text{k}\Omega$	0.1	--	--	V
Output Resistance	R_L		4.7	--	--	k Ω
The magnetic flux shifts with temperature	ST	Temp=-20°C to 85°C B=0 TO +1000GS	--	--	12	%
Supply Current in Sleep Mode	I_{sleep}	$V_{CC} = 1.6\text{V to } 3.6\text{V}$ Enable = GND	40	--	70	uA
Linearity Error	Lin		-1.2	--	1.2	%

◆ Functional Description

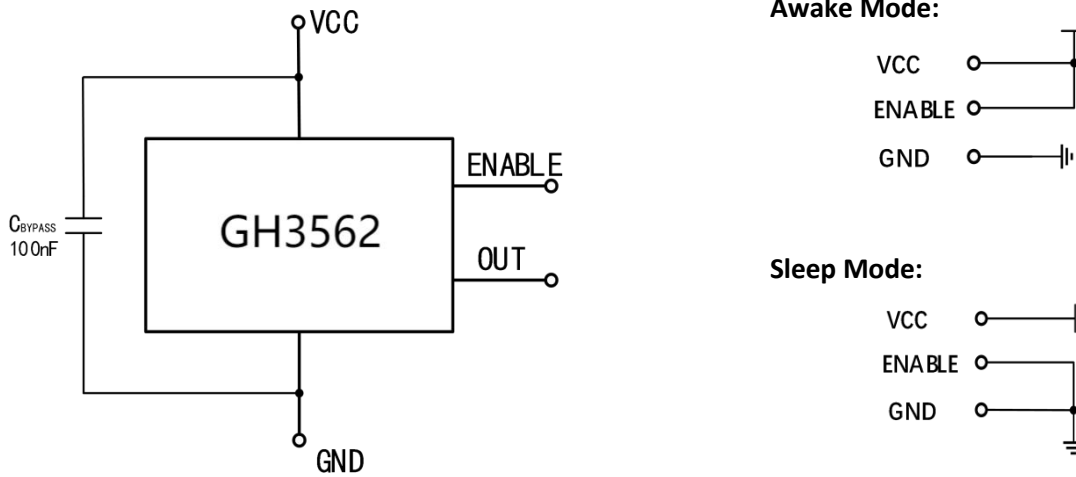
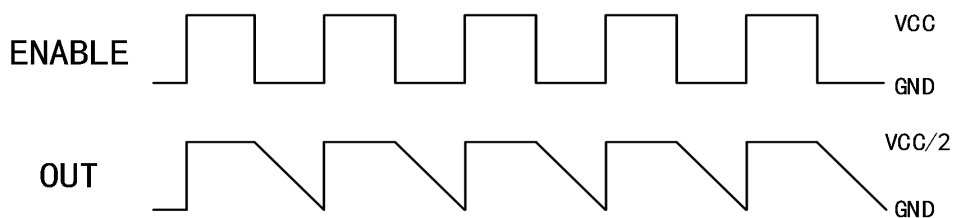


Figure 3 Application of GH3562

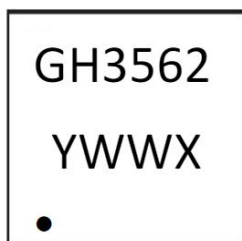
Note:

3) C_{BYPASS} is used to stabilize the power and improve noise resistance. The recommended value is 100nF; When the ENABLE Pin is not applicable, the default mode is Sleeping. During Awake mode, it is recommended that the maximum voltage of ENABLE pin is supply voltage VCC.

Awake/Sleep Modes Switch:



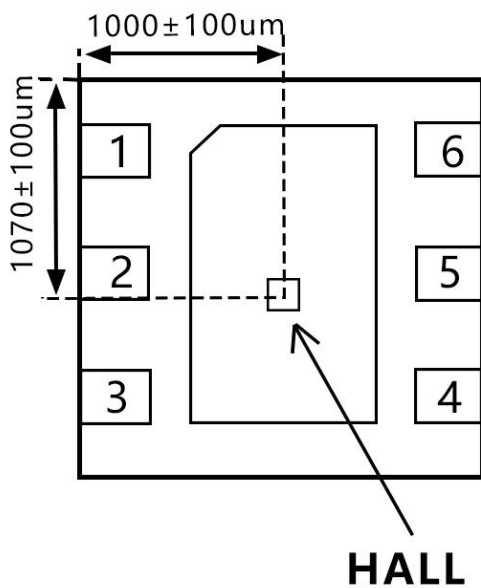
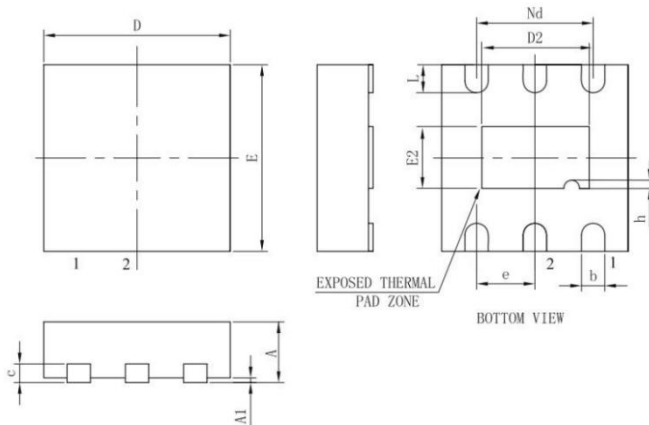
◆ Marking Information



Part No., Fixed
 Y: Year, 0~9, "3"=2023
 WW: Nth week, 01~52
 X: Internal Code, Refer to PO.

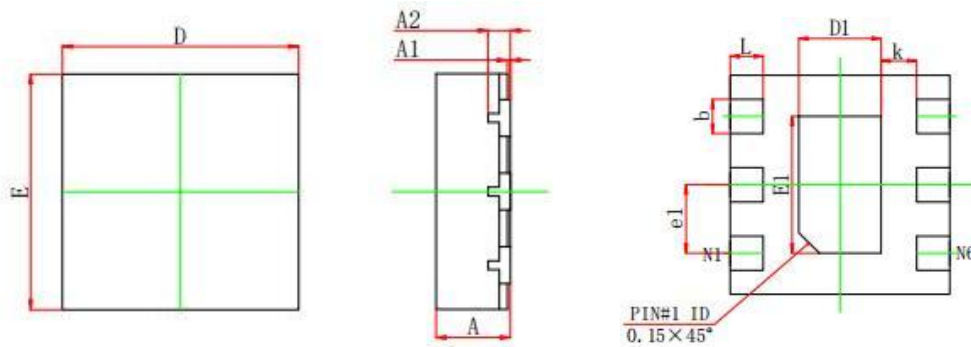
◆ Package Information

① DFN2020-6L(mm)



STMBOL	MILLIMETER		
	MIN	MID	MAX
A	0.70	0.75	0.80
A1	-	0.02	0.025
b	0.02	0.025	0.30
c	0.18	0.20	0.25
D	1.95	2.00	0.25
D2	1.10	1.20	1.30
e	0.65BSC		
Nd	1.30BSC		
E	1.95	2.00	2.05
E2	0.80	0.70	0.80
L	0.25	0.30	0.40
h	0.05	0.10	0.15
载体尺寸 (all)	63*39		

② DFN1616-6L(mm)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.000	0.050	0.000	0.002
A2	0.150REF.		0.006REF.	
D	1.550	1.650	0.061	0.065
E	1.550	1.650	0.061	0.065
D1	0.500	0.700	0.020	0.028
E1	0.900	1.100	0.035	0.043
b	0.200	0.300	0.008	0.012
e1	0.500BSC		0.020BSC	
k	0.260REF		0.010REF	
L	0.190	0.290	0.007	0.011

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GoChip Microelectronics is a Chinese high-tech company, dedicating in the R&D, sales, and technical services of sensor chips. It was founded in 2010 and Headquarter in Shanghai, China. Now we have two R&D centers in both Shanghai and Hangzhou city, as well as marketing service networks throughout the country.

Taking the core concept of "Enhance oneself and Surpass expectations", and with more than a decade of persistent technological innovation and high-quality services, GoChip has gradually established a business mode with automotive electronics as the main track and continuously developing in the fields of new energy, industrial automation, consumer electronics. In automotive electronics, we are committed to providing customers with high-performance and reliable sensor chip solutions. Our products are widely used in automotive chassis control systems, engine power systems, and intelligent cabin electric systems. GoChip will continue to increase investment in technological R&D, actively explore the development and promotion of new products, and strive to make greater contributions to China Chip.

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