

General Description

The GH266 is an integrated Hall sensor with output driver designed for electronic commutation of brushless DC motor applications. The device includes an on-chip Hall sensor for magnetic sensing, an amplifier that amplifies the Hall voltage, a Schmitt trigger to provide switching hysteresis for noise rejection and two complementary open-collector drivers for sinking large load current. It also includes an internal band-gap regulator which is used to provide bias voltage for internal circuits and allows a wide operating supply voltage ranges.

Placing the device in a variable magnetic field, if the magnetic flux density is larger than threshold B_{OP} the pin DO will be turned low (on) and pin DOB will be turned high (off). This output state is held until the magnetic flux density reverses and falls below B_{RP} , then causes DO to be turned high (off) and DOB turned low (on).

GH266 is available in TO-94 (SIP-4L) package.

Features

- On-chip hall sensor
- Operating from 4V to 30V supply voltage
- 400mA (avg) output sink current
- Build in protection diode for reverse power supply fault
- -20°C to 85°C operating temperature
- Low profile TO-94 (SIP-4L) package

Applications

- 12V/24V dual-coil brushless DC motor/fan
- Power supply and switchboard
- Communications facilities
- Industrial equipment

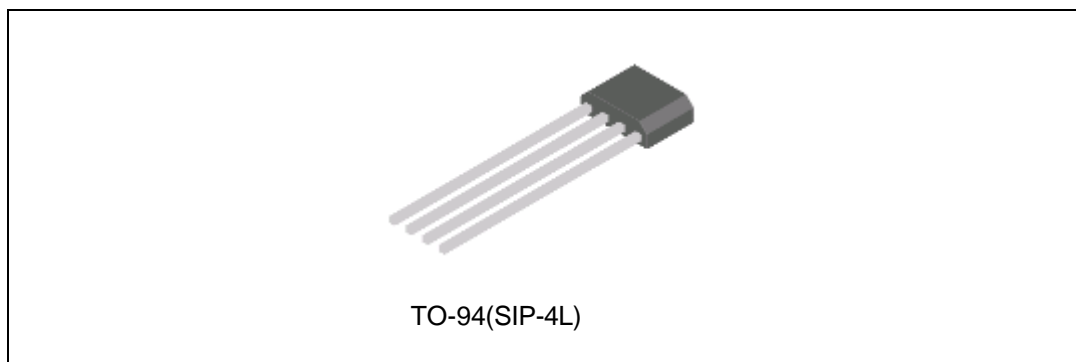


Figure 1. Package Type of GH266

Ordering Information

Package	Temperature Range	Part Number	Marking ID	Packing Type
TO-94(SIP-4L)	-20 to 85 °C	GH266EUB	G266	Bulk

◀ Pin Configuration

TO-94 (SIP-4L)

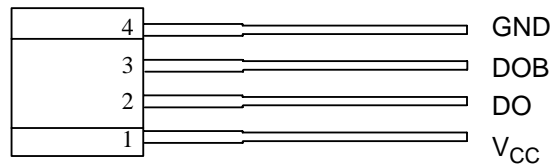


Figure 2. Pin Configuration of GH266 (Front View)

◀ Pin Description

Pin Number	Pin Name	Function
1	V _{CC}	Supply voltage
2	DO	Output 1
3	DOB	Output 2
4	GND	Ground

◀ Functional Block Diagram

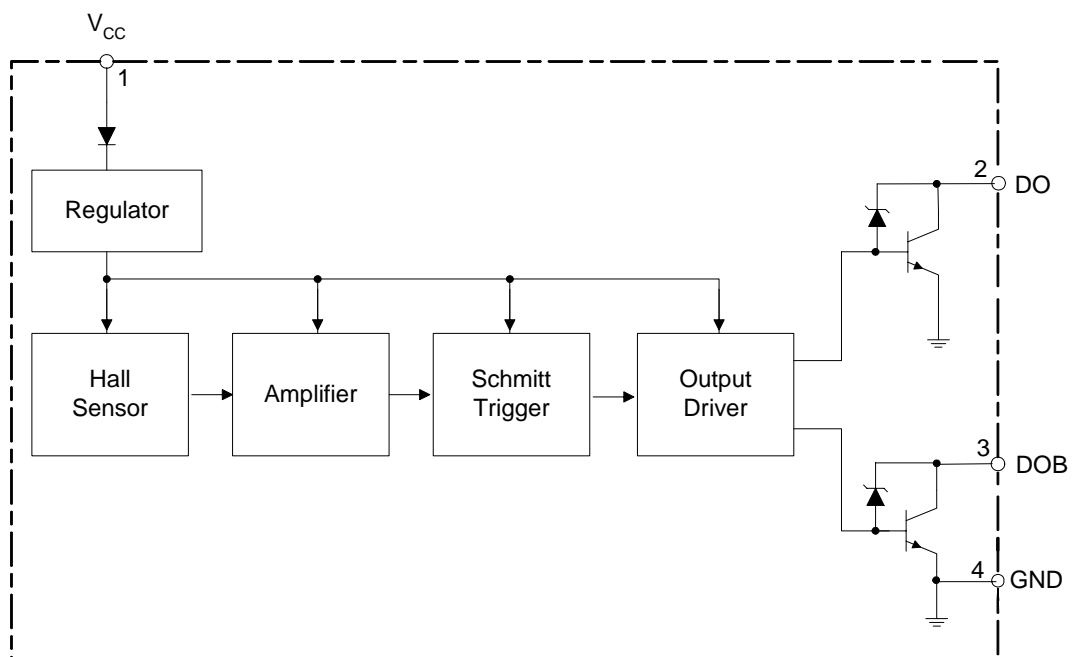


Figure 3. Functional Block Diagram of GH266

◁ Absolute Maximum Ratings (Note 1)

($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	30	V
Reverse Protection Voltage	V_{RCC}	-30	V
Magnetic Flux Density	B	Unlimited	Gauss
Output Current	Continuous	I_O	400 (Note 2)
	Hold		600
	Peak (start up)		800
Power Dissipation	P_D	550	mW
Thermal Resistance	Die to atmosphere	θ_{JA}	227
	Die to package case	θ_{JC}	49
Storage Temperature	T_{STG}	-50 to 150	$^{\circ}\text{C}$

Note 1: Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "Recommended Operating Conditions" is not implied. "Absolute Maximum Ratings" for extended period may affect device reliability.

Note 2: Continuous output current is 300mA at 85 $^{\circ}\text{C}$.

◁ Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
Supply Voltage	V_{CC}	4	28	V
Operating Ambient Temperature	T_A	-20	85	$^{\circ}\text{C}$

Electrical Characteristics

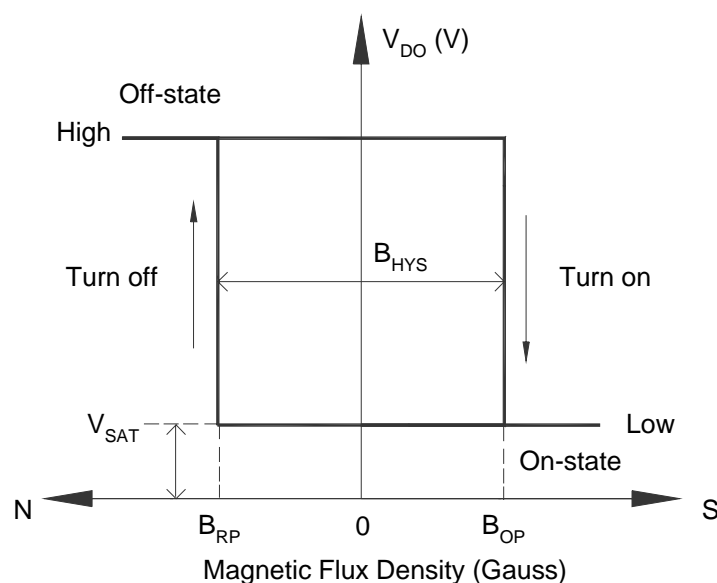
($T_A=25^{\circ}\text{C}$, $V_{CC}=24\text{V}$, unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Low Supply Voltage	V_{CE}	$V_{CC}=5\text{V}$, $I_O=100\text{mA}$		0.1	0.3	V
Output Saturation Voltage	V_{SAT1}	$I_O=400\text{mA}$		0.4	0.6	V
Output Saturation Voltage	V_{SAT2}	$I_O=500\text{mA}$		0.6	0.8	V
Output Leakage Current	I_{OL}	$V_{DO}, V_{DOB}=24\text{V}$		0.1	10.0	μA
Supply Current	I_{CC}	$V_{CC}=24\text{V}$, Output Open		10.0	16.0	mA
Output Rise Time	t_r	$R_L=820\Omega$, $C_L=20\text{pF}$		3.0	10.0	μs
Output Fall Time	t_f	$R_L=820\Omega$, $C_L=20\text{pF}$		0.3	1.5	μs
Switch Time Differential	Δt	$R_L=820\Omega$, $C_L=20\text{pF}$		3.0	10.0	μs
Output Zener Breakdown Voltage	V_{ZO}			50		V

Magnetic Characteristics

($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Grade	Min	Typ	Max	Unit
Operating Point	B_{OP}	A	10		70	Gauss
		B			100	Gauss
Releasing Point	B_{RP}	A	-70		-10	Gauss
		B	-100			Gauss
Hysteresis	B_{HYS}			70		Gauss



◀ **Magnetic Characteristics**

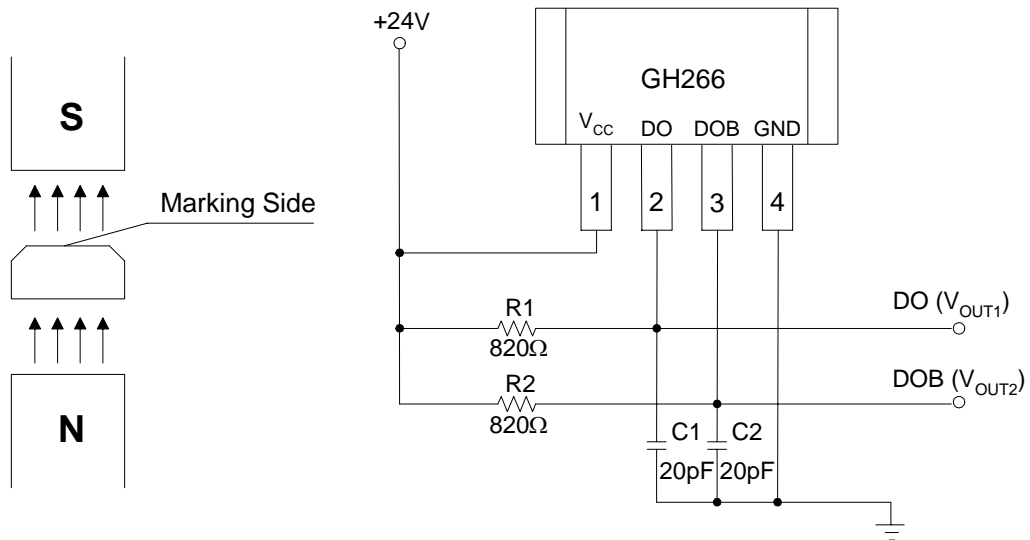
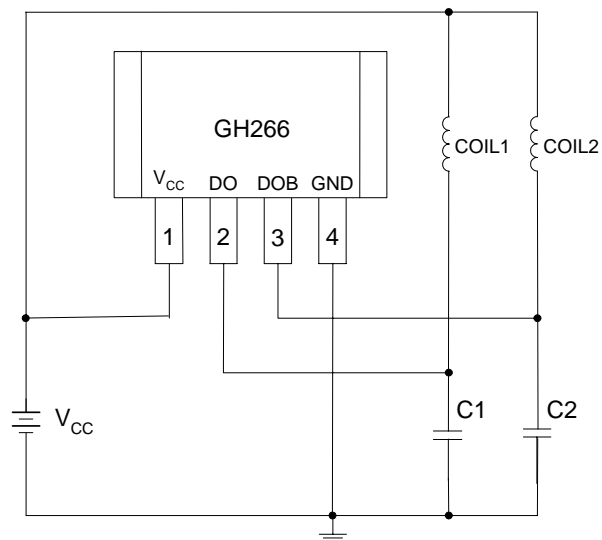


Figure 4. Basic Test Circuit

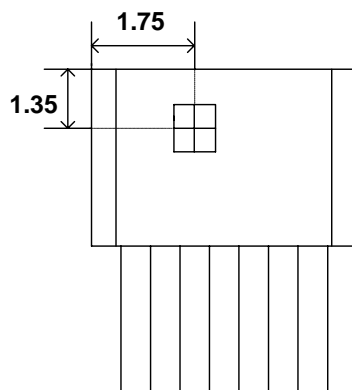
◀ **Typical Applications**



Remark: C1,C2: capacitor 2.2uF~4.7uF(optional)

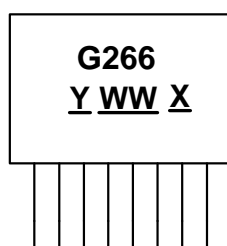
Figure 5. Typical Application Circuit

◁ Package Location (Unit:mm)



◁ Making Information

(Top View)



Y : Year : 0~9, "7"=2017
WW : Nth Weeks (01~52)
X : Internal Code

◀ Mechanical Dimensions

TO-94(SIP-4L)

Unit: mm(inch)

