

■ GENERAL DESCRIPTION

The FSH41 is an integrated Hall effect latched sensor designed for electronic commutation of brush-less DC motor applications. The device includes an on-chip Hall voltage generator for magnetic sensing, a comparator that amplifies the Hall voltage, and a Schmitt to provide switching hysteresis for noise rejection, and open-collector output. An internal bandgap regulator is used to provide temperature compensated supply voltage for internal circuits and allows a wide operating supply range.

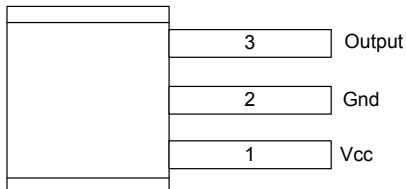
A north pole of sufficient strength will turn the output ON. In the absence of a magnetic field, the output is OFF.

■ FEATURES

- Wide operating voltage range: 3.0V~20V
- Maximum output sink current 50mA
- Package: SIP3

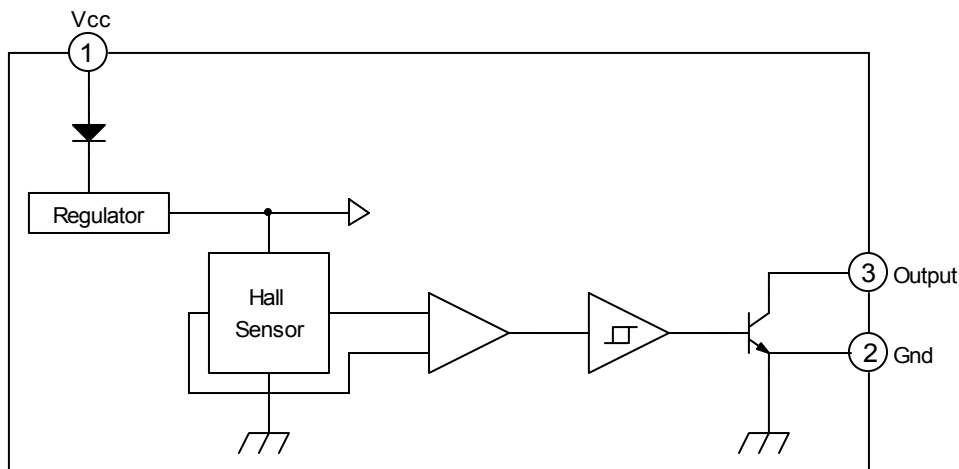
■ PIN CONFIGURATION

(Top View)



Name	No.	Status	Description
Vcc	1	P	IC Power Supply
Gnd	2	P	IC Ground
Output	3	O	It is low state during the N magnetic field

■ FUNCTIONAL BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

Vcc Pin Voltage	20V
Output OFF Voltage, Vce	30V
Output ON Current(Io) (Continuous Current)	50mA
Power Dissipation (Ta=25°C)	400mW
Operating Temperature Range	-40°C~+150°C
Storage Temperature Range	-65°C~+150°C
Junction Temperature	+150°C
Lead Temperature(Soldering, 10 sec)	+230°C

DC ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Minimum Operating Voltage	V _{CC}	No use pin is open(Fig1)		3.0		V
Maximum Operating Voltage	V _{CC}	No use pin is open(fig1)		20.0		V
Quiescent Supply current	I _{CC}	No use pin is open V _{CC} :3.0V~20V(Fig1)		3.7	10	mA
Output Saturation Voltage	V _{SAT}	V _{CC} =12V,I _O =50mA(Fig1)		400	500	mV

Note: Fig1 The IC output state is under N magnetic field.

OUTPUT SATURATION VOLTAGE VS. OUTPUT CURRENT (I_O) V_{CC}=12V, TEMP. =25°C

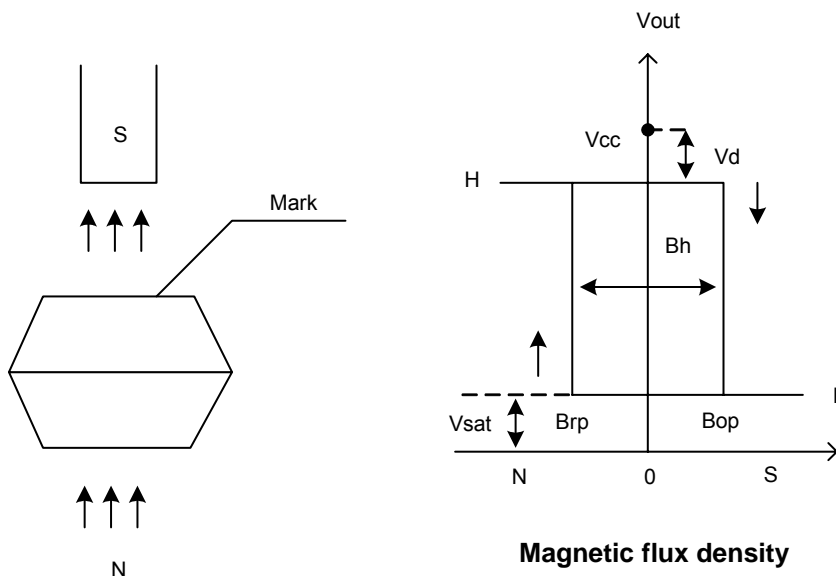
Output Current (I _O) Unit: mA	Saturation Voltage Unit: V	Note
5	0.05	
15	0.13	
25	0.19	
35	0.27	
45	0.35	
50	0.40	

AC ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Rise time	(t _r)	R _L =820Ω C _L =20pF(Fig1)		0.2		μS
Fall time	(t _f)	R _L =820Ω C _L =20pF(Fig1)		0.5		μS

MAGNETIC CHARACTERISTICS

FSH41	T _a =-40°C~+150°C		
Parameter	Min.	Max.	Unit
B _{op}		+70	G
B _{rp}	-70		G
B _{hys}		140	G



■ **Test Circuits**

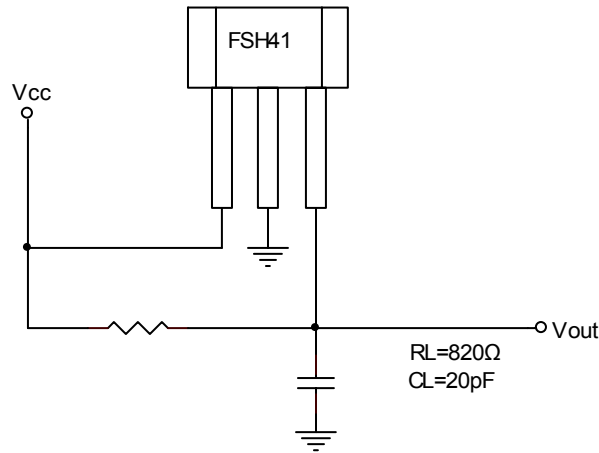
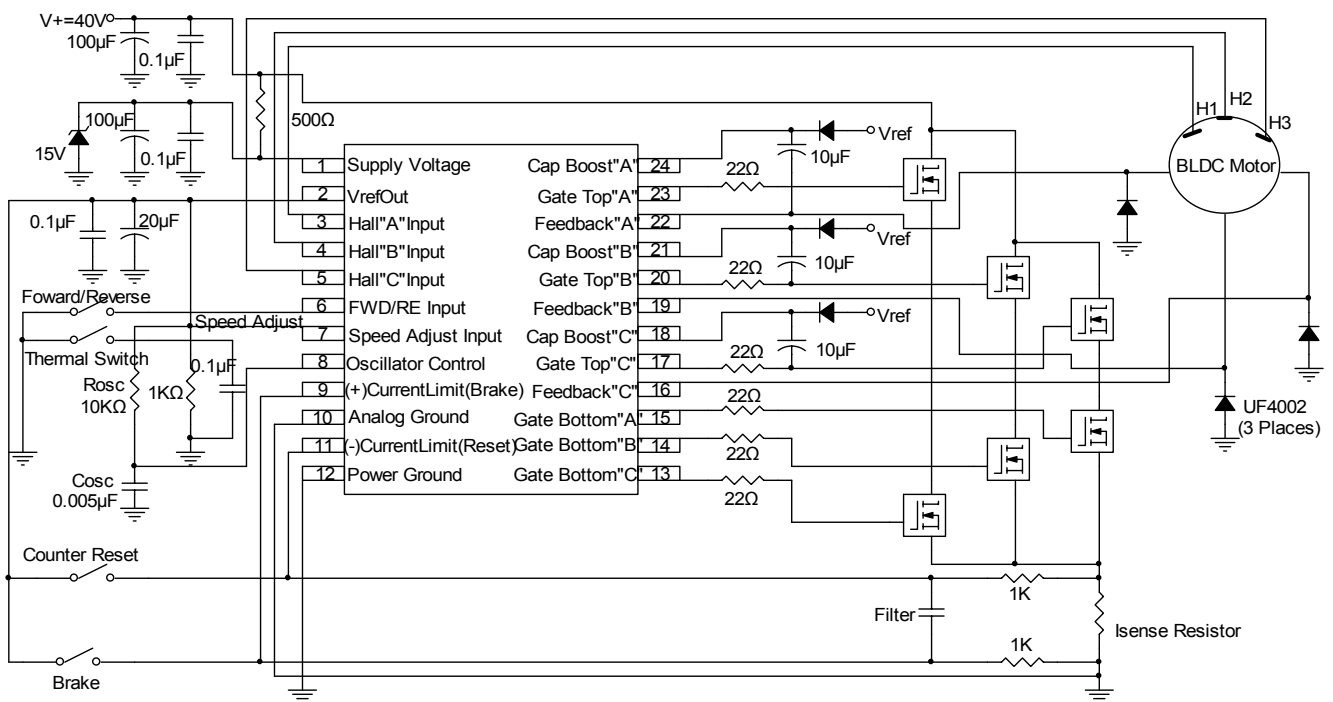


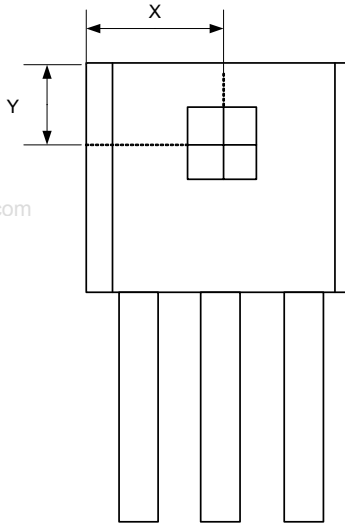
Fig1

■ **TYPICAL APPLICATION CIRCUIT**



■ **HALL SENSOR LOCATION**

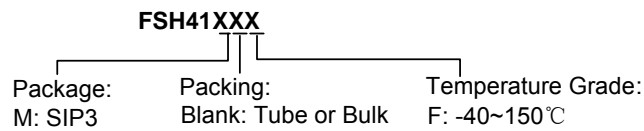
The Fig2 is hall sensor location, where marks the IC number.



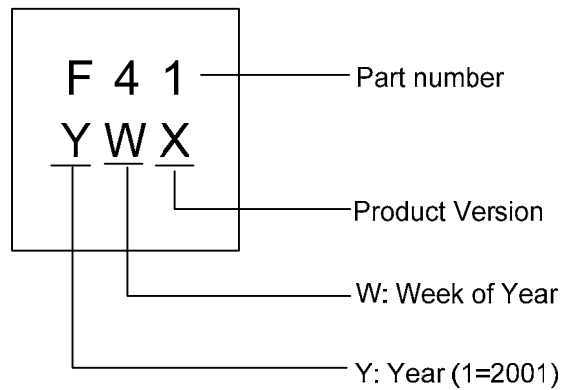
		Unit
X	2.1	mm
Y	1.55	mm

Fig2 FSH41 Hall Sensor Location

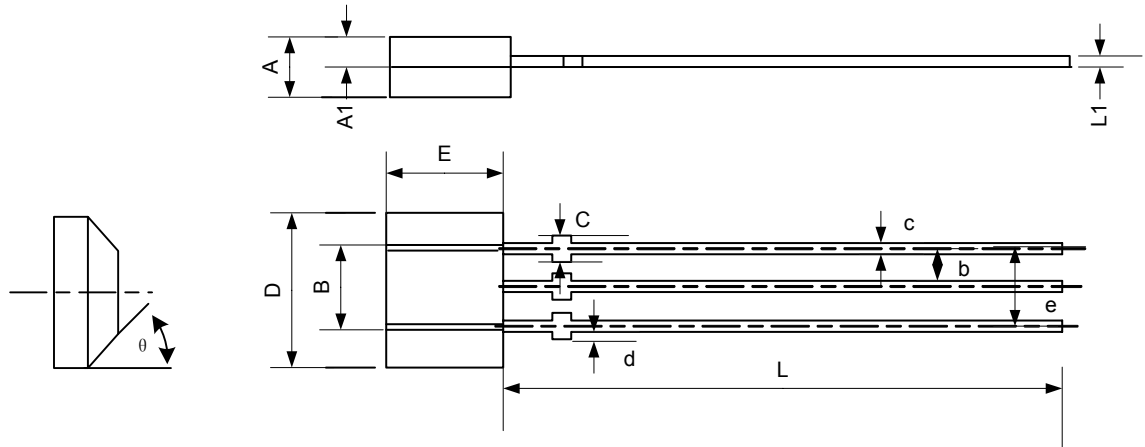
■ **ORDERING INFORMATION**



■ **MARKING INFORMATION**



■ PACKAGE INFORMATION



Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	1.40	1.50	1.60	0.055	0.059	0.063
A1	0.69	0.74	0.79	0.027	0.029	0.031
B	2.52	2.62	2.72	0.099	0.103	0.107
b	1.22	1.27	1.32	0.048	0.05	0.052
C			0.58			0.023
c	0.331	0.381	0.431	0.013	0.015	0.017
D	3.9	4.0	4.1	0.154	0.157	0.160
d			0.1			0.004
E	3.0	3.1	3.2	0.120	0.124	0.128
e	2.44	2.54	2.64	0.096	0.100	0.104
L	13.0	14.0	15.0	0.51	0.55	0.59
L1	0.35	0.38	0.41	0.014	0.015	0.016
θ		45°				45°