AH496B，AH3503

SERIES LINEAR HALL-EFFECT SENSORS

These Hall-effect sensors accurately track extremely small changes in magnetic flux density—changes generally too small to operate Hall-effect switches. As motion detectors, gear tooth sensors, and proximity detectors, they are magnetically driven mirrors of mechanical events. As sensitive monitors of electromagnets, they can effectively measure a system's performance with negligible system loading while providing isolation from contaminated and electrically noisy environments. Each Hall-effect integrated circuit includes a Hall sensing element, linear amplifier, and emitter-follower output stage. Problems associated with handling tiny analog signals are minimized by having the Hall cell and amplifier on a single chip. Three package styles provide a magnetically optimized package for most applications.

FEATURES

. Extremely Sensitive
. Flat response to 23kHz
. Low-Noise Output
. 4.5V to 6V Operation
. Magnetically Optimized Package

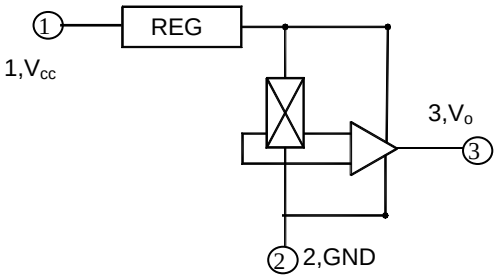
TYPICAL APPLICATION

. Motion detector
. Gear tooth sensors
. Proximity detector
. Velocity detecting of motor bicycle
. Current detecting sensor

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Supply voltage	V_{cc}	12	V
Magnetic flux density	B	Unlimited	mT
Operating temperature range	T_A	-40~+125	℃
Storage temperature range	T_S	150	℃

FUNCTIONAL BLOCK DIAGRAM



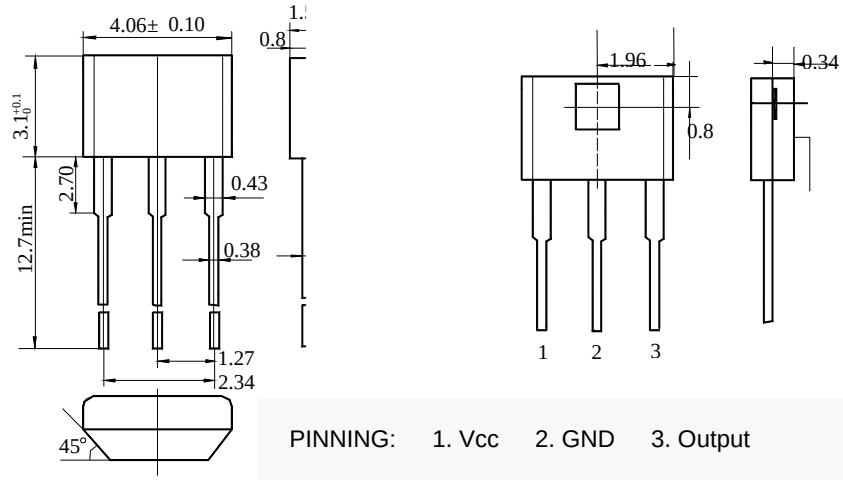
ELECTRICAL CHARACTERISTICS

T_A=25℃ 1mT=10Gs

Characteristics	Symbol	Test conditions	AH3503			AH496B			Unit
			Min.	Typ	Max	Min.	Typ	Max	
Operating voltage	V_{cc}		4.5	-	6	4.5	-	10.5	V
Supply current	I_{cc}		-	9	14	-	9.0	12.0	mA
Linearity range			-90	-	+90	-90	-	+90	mT
Quiescent output voltage	V_{out}	B=0	2.25	2.5	2.75	2.25	2.5	2.75	V
Sensitivity	S		7..5	13..5	17..5	23	25.0	..27.	mV/mT
Output High Level and Low Level			0.6	-	4.3	0.20	-	4.8	V

Note: All output-voltage measurement are made with a voltmeter having an input impedance of at lease 10KΩ.

PACKAGE (Unit：mm)



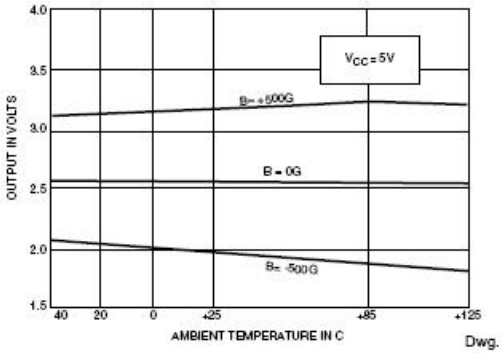
PINNING: 1. Vcc 2. GND 3. Output

Cautions

1. When install, should as full as possible decrease the mechanical stress acting on the Hall IC, to avoid the influence of the operate point and release point.
2. On the premise of ensuring welding quality, use as possible as low welding temperature an short time.

CHARACTERISTICS CURVE

OUTPUT VOLTAGE AS A FUNCTION OF TEMPERATURE



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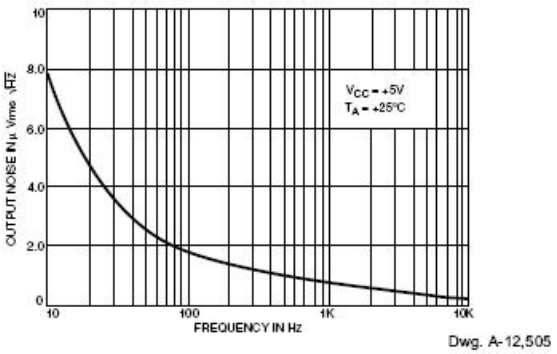
OUTPUT NOISE AS A FUNCTION OF FREQUENCY



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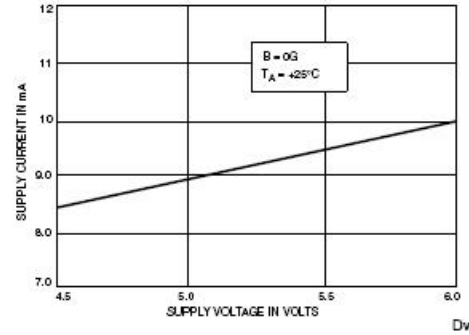
SUPPLY CURRENT AS A FUNCTION OF SUPPLY VOLTAGE



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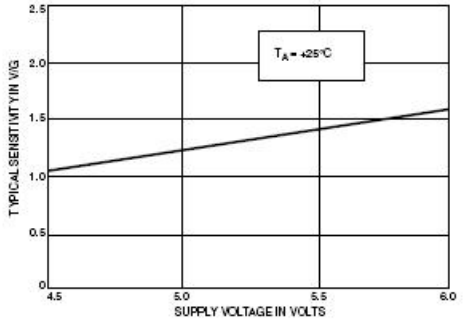
DEVICE SENSITIVITY AS A FUNCTION OF SUPPLY VOLTAGE



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