



AnaSem

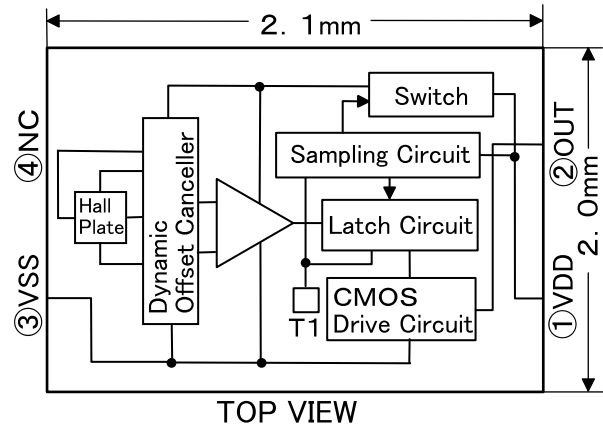
Analog Semiconductor IC
HMX3025HNA

CMOS HALL OMNIPOLAR MAGNETIC SENSOR SWITCH

Feature

- CMOS+Hall Sensor Monolithic Structure
- SMD SON-4 Package: 2.0 × 2.1 × 0.6mm
- Low current consumption: 4.5 μA/3.0V
- High-Sensitivity Hall sensor: 3.0mT/Typ
- Magnetic Direction: Omnipolar detection/CMOS inverter one output
- Detection Magnetic Field: Vertical direction of package (electrode vertical N/S-pole direction)
- Operating Temperature Range: -40~+85°C
- Operating Voltage Range: 2.5~3.6V

PIN/Block Diagram



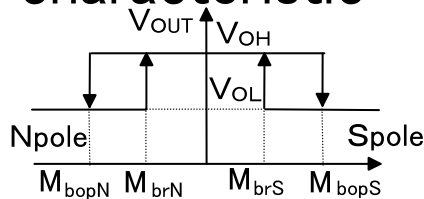
Outline

- HMX series is a monolithic IC with built-in Hall magnet sensor element and CMOS switch.
- It becomes the switch of the noncontact of low current consumption, high sensitivity, and high reliability by combining with the magnet.
- A vertical to the electrode of the package vertical magnetic field can be detected by omnipolar direction(N pole ↔ S pole).
- Even 1.5mT~5mT can detect a wide magnetic field in the HMX series.
- There are two CMOS output and opendrain output types that can individually detect N and S pole in HMX series.

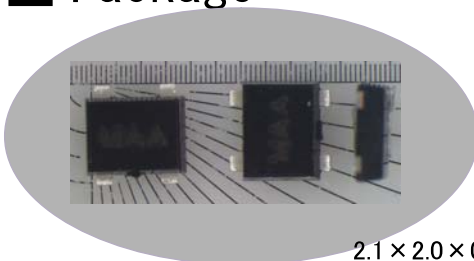
Type Name: HMX3025HNA/Product Number Rule/List

HMX	3025:Sensitivity /Voltage	H: Operation voltage/ Output cycle	N: Package	A: Version
Anasem Product Series Name	30:3.0mT(Typ)/ 25:2.5~3.6V	H: 2.5~3.6V/typ50 μs: 50ms	N:SON-4/2.0 × 2.1 × 0.6mm/4L	A: CMOS/1out

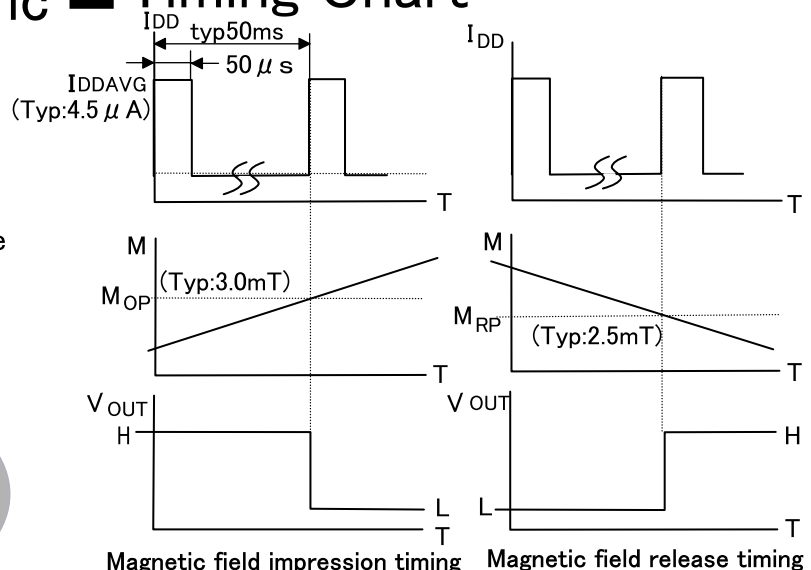
Magnetic-Electric conversion characteristic



Package



Timing Chart



Electric Characteristics

(Ta=25°C, VDD=3.0V)

Item	Sign	Measurement condition	Min	Typ	Max	Unit
Operation Voltage	VDD		2.5	3.0	3.6	V
Current consumption	I _{AVG}	Average Current VDD=3.0V,Out=Open		4.5	7.0	μA
Output reversing magnetic induction (H→L)	M _{bopS}		(1.5)	3.0	5.0	mT
	M _{bopN}		-5.0	-3.0	(-1.5)	
Output reversing magnetic induction (L→H)	M _{brS}		1.2	2.5	(4.7)	mT
	M _{brN}		(-4.7)	-2.5	(-1.2)	
Width of reversing magnetic induction hysteresis	M _{bhys}		(0.3)	0.5	(1.2)	mT
Pulse drive cycle	P _c			50	90	ms
Pulse drive width	P _w			50		μs
Output "H" level	V _{OH}	I _{OH} =-0.5mA	VDD-0.4			V
Output "L" level	V _{OL}	I _{OL} =+0.5mA			0.4	V

★()Design guarantee value

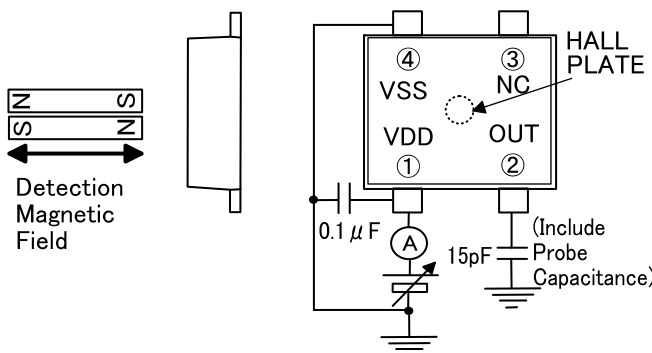
Absolute Maximum Rating

Operating temperature range	T _{OPR}		-40		+85	°C
Storage temperature range	T _{STG}		-40		+125	°C
Absolute maximum voltage range	V _{MAX}		V _{SS} -0.3		V _{SS} +7.0	V
Assembly temperature condition	T _{ASY}	t=max:5sec/ Tmax		255	260	°C

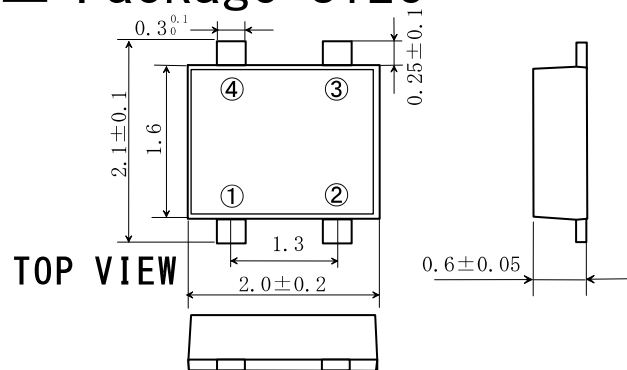
Magnetic Strength and Output Voltage

Magnet & Power	Magnet Condition	Output Voltage
Magnet=OFF Power=ON	M=0mT	High-Level
Magnet =ON Power=ON	M ≥ 5.0mT	Low-Level
Magnet=OFF Power=ON	M ≤ 1.2mT	High-Level

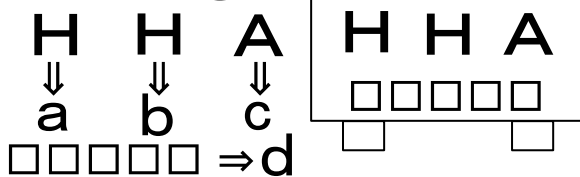
Test Circuit



Package Size



Marking



a	Series Name:H/Hall Sensor Switch
b	Specification:H/H:Spec
c	Products Version:A/A:Version
d	Production Lot:Dot/Company Rule

製造元:アナセム株式会社

Maker:AnaSem.InC

〒274-0825 船橋市前原西2丁目13-10

2-13-10 Maehara Nishi Funabashi Chiba Japan

TEL (047) 470-5810 FAX 470-5825

Home Page: <http://www.anasem.co.jp>

e-mail: support@anasem.co.jp