

MicroPower, Ultra-sensitive Hall Effect Switch**❖ GENERAL DESCRIPTION**

MA7005 is a three-terminal Hall Effect sensor device with an output driver. The device is using CMOS process includes an on-chip Hall voltage generator for magnetic sensing, a comparator that amplifies the Hall voltage, and a Schmitt trigger to provide switching hysteresis for noise rejection, and open-drain output, and an internal temperature compensated circuits. This method reduces the offset voltage normally caused by device over molding and thermal stress.

The output is switch with either north or South Pole of sufficient strength will turn the output on (low). The output will be turned off (high) under no magnetic field. While the magnetic flux density (B) is larger than operate point (Bop), the output will be turned on (low); the output is latched until B is lower than release point (Brp) and then turned off (high).

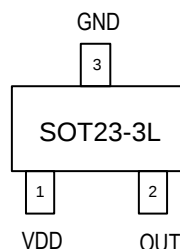
❖ FEATURES

- 1.65V to 5.5V battery operation
- Chopper Stabilized Technology
- Operation with North or South Pole
- High sensitivity and high stability of the magnetic switching points
- Low Profile SOT23-3L Package

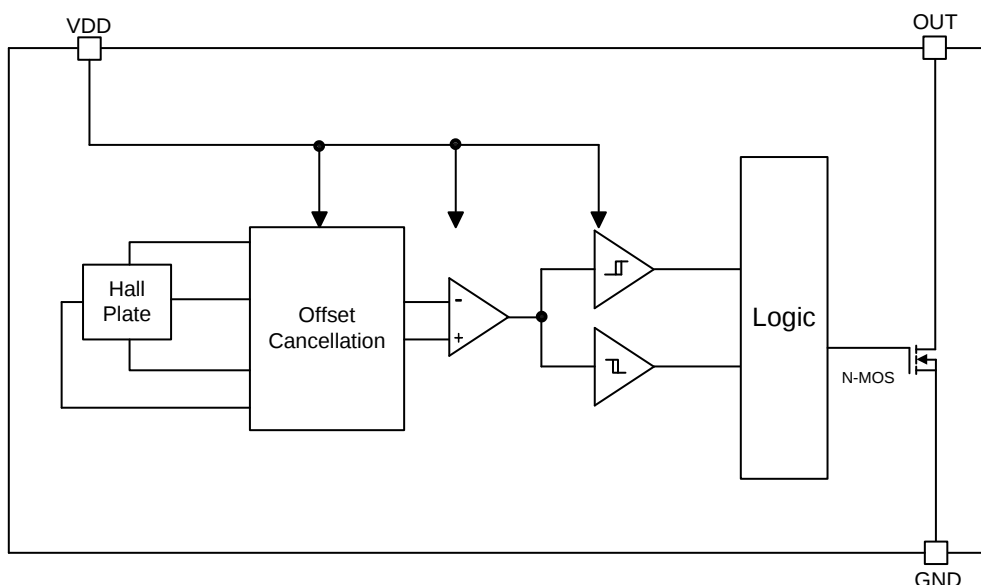
❖ PIN ASSIGNMENT

The package of MA7005 is SOT23-3L; the pin assignment is given by:

(Top View)



Name	Description
VDD	Supply Voltage
OUT	Output
GND	Ground.

❖ **BLOCK DIAGRAM**

❖ **ORDER / MARKING INFORMATION**

Order Information	Top Marking
MA7005X X Package Type A: SOT23-3L Packing Blank: Bag A : Taping	H G Y W X → ID Code: Internal → Week: 01~26(A~Z) 27~52(a~z) Year : 7 = 2017

❖ **ABSOLUTE MAXIMUM RATINGS** (at $T_A=25^{\circ}\text{C}$)

Characteristics	Symbol	Rating	Unit
VDD Pin Voltage	V_{DD}	- 0.3 to 7V	V
Output Pin Voltage	V_{OUT}	- 0.3 to 7V	V
Output Current	I_{OUT}	25	mA
Storage Temperature Range	T_{ST}	-65 to +150	$^{\circ}\text{C}$
Junction Temperature	T_J	+150	$^{\circ}\text{C}$
Operating Temperature Range	T_{OP}	-40 to +125	$^{\circ}\text{C}$
Thermal Resistance from Junction to case	θ_{JC}	140	$^{\circ}\text{C}/\text{W}$
Thermal Resistance from Junction to ambient	θ_{JA}	250	$^{\circ}\text{C}/\text{W}$
Power Dissipation[$PD=(T_J-T_A) / \theta_{JA}$]	PD	400	mW

Note : θ_{JA} is measured with the PCB copper area of approximately 0.5 in²(Multi-layer).