➢ Product description

CH172 Hall-effect sensor is a temperature stable, stress-resistant, Low Tolerance of Sensitivity micro-power switch. Superior high-temperature performance is made possible through a dynamic offset cancellation that utilizeschopper-stabilization. This method reduces the offset voltage normally caused by device over molding, temperature dependencies, and thermal stress.

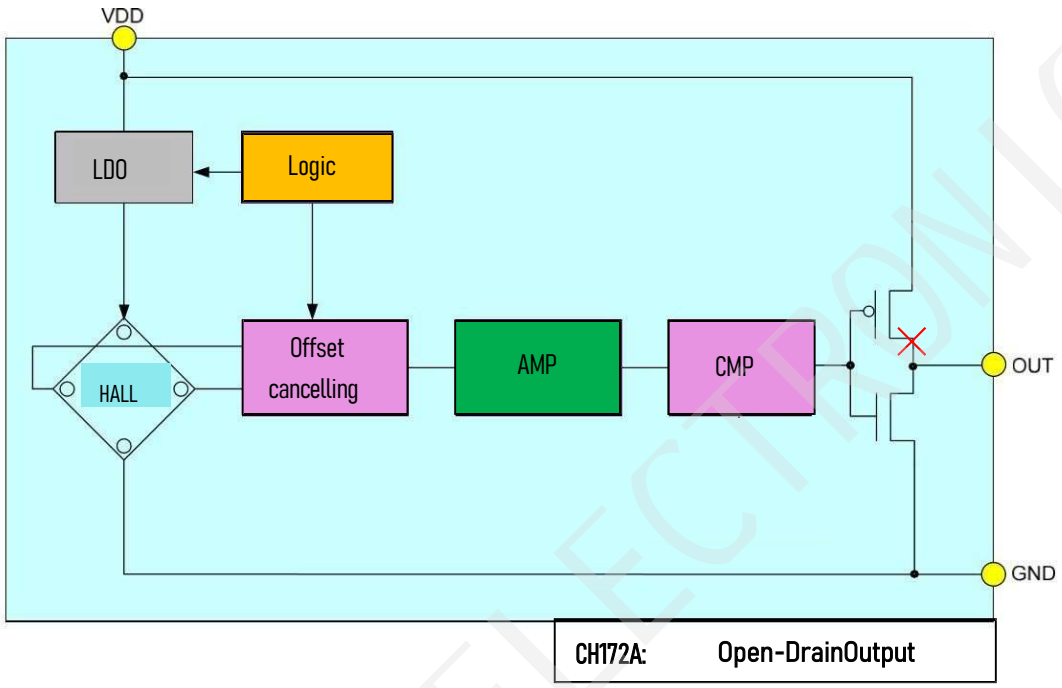
CH172 is special made for low operation voltage, 1.5V, to active the chip which is includes the following on a single silicon chip: voltage regulator, Hall voltage generator, small-signal amplifier, chopper stabilization, Schmitt trigger, CMOS output driver. Advanced CMOS wafer fabrication processing is used to take advantage of low-voltage requirements, component matching, very low input-offset errors, and small component geometries. This device requires the presence of uni-polar magnetic fields for operation.

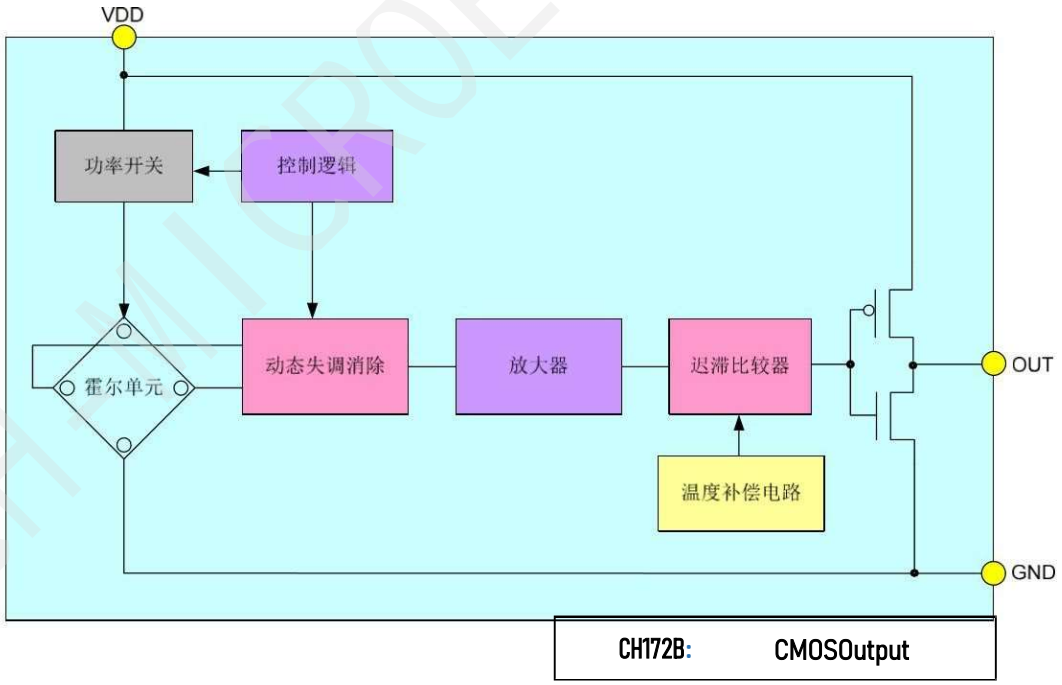
The package type is in a Halogen Free version has been verified by third party Lab.

➢ Features

- Unipolar, High sensitivity switch hallIC
- Operation from 1.5v to6v
- Ultra low power consumption at 2.2uA(Avg.)
- High ESD protetion, HBM(HBM)4000V
- Operation frequency: 25Hz

➢ Functional Diagram



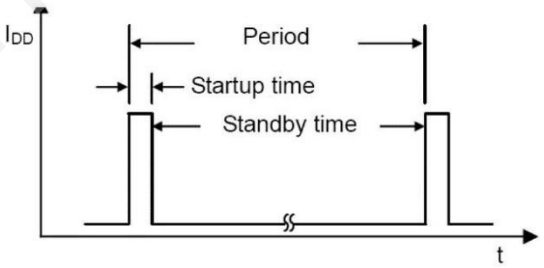


➢ Absolute Maximum Ratings @(T=25℃)

Parameter	Min	Typ	Max	Unit
Supply Voltage			7	V
Output Voltage			7	V
Output current		1		mA
Operating temperature range	-40		85	℃
Storage temperature range	-65		150	℃
Maximum Junction temp.			150	℃
Magnetic flux density		unlimited		Gauss

➢ Electrical Specifications @(T=25℃, VDD=1.5V)

Parameter	Symbol	Test Conditiions	Min	Typ	Max	Unit
Supply Voltage	VDD	Operating	1.5	3	6	V
Supply Current	IDD	Awake state		1	2.3	mA
		Sleep state		2	10	uA
		Average【40u/10mS】	2.2	3	5.9	uA
Output Voltage	VOH	I_{OUT}= 0.5mA , Source	V_{DD}-0.2			V
	VOL	I_{OUT}= 0.5mA , Sink			0.2	V
Output Leakage Current	IOFF	Output off			1	uA
Startup time	TAW	Awake state		40	80	uS
Standby time	TSL	Sleep state		40	80	mS
Duty cycle				0.1		%
Electro-Static Discharge	ESD	HBM	4			KV

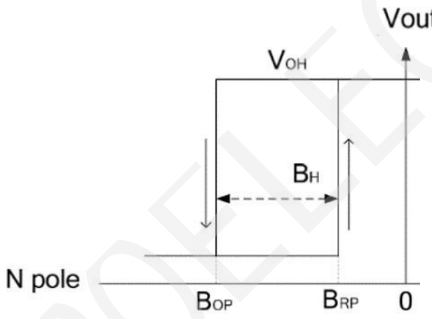


Note :
Startup / Standby time

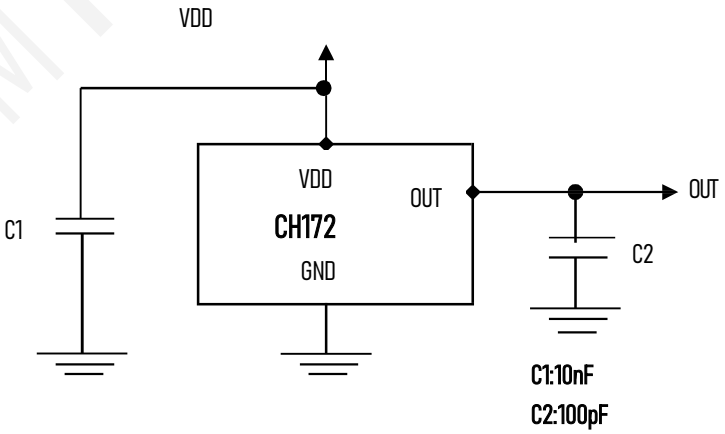
➢ Magnetic Specifications

Parameter	Symbol	Test Conditiions	Min	Typ	Max	Unit
Operating Point	BOPN	N pole , B< BOP,Vout On	-50	-35	-10	Gauss
Release Point	BRPN	N pole , B> BRP,Vout Off	-45	-25	-5	Gauss
Hysteresis	B_H	$\|B_{OP} - B_{RP}\|$		10		Gauss

Parameter	Test condition	OUT
Weak magnetic field	$\|B\|<\|B_{RP}\|$	H
North pole	$B < B_{OP}$	L



➢ Typical Application Circuit



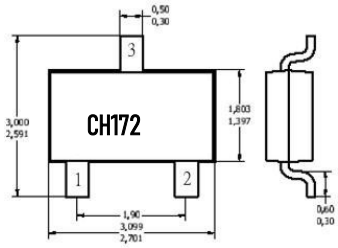
➢ Package Specifications【unit:mm】

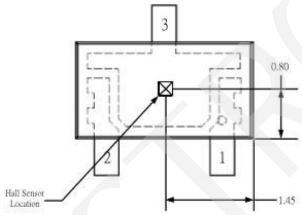
- TSOT23-3 package

Pin No.	Pin Name	Function
1	VDD	Power supply
2	OUT	Output
3	GND	Ground

TSOT23-3 package

Top View



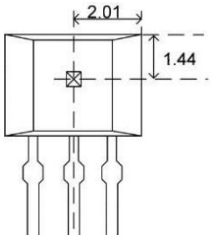


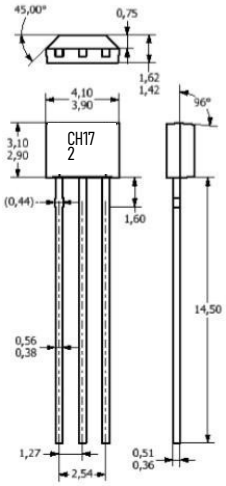
TSOT23-3 package

Bottom View

- TO-92S package

Pin No.	Pin Name	Function
1	VDD	Power supply
2	GND	Ground
3	OUT	Output





➢ Ordering Information

Part Number	Bop(GS)	Brp(GS)	Bhyst(GS)	Output	package
CH172AP	-35	-25	10	CMOS	TO-92S
CH172AT	-35	-25	10	CMOS	TSOT23-3