



➤ Product description

CH173 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 utilizes chopper-stabilization. This method reduces the offset voltage normally caused by device over molding, temperature dependencies, and thermal stress.

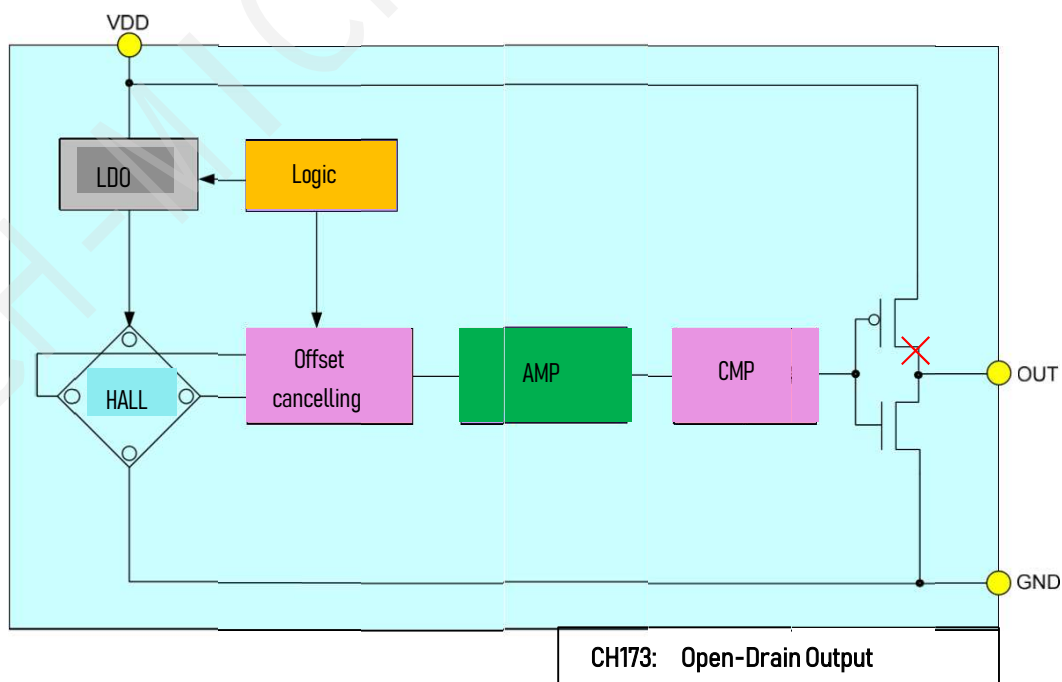
CH173 is special made for low operation voltage, 1.5V, to active the chip which includes the following on a single silicon chip: voltage regulator, Hall voltage generator, small-signal amplifier, chopper stabilization, Schmitt trigger, CMOS output driver. Advanced CMOS wafer fabrication processing is 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 hall IC, S polar
- Operation from 1.5v to 6v
- Ultra low power consumption at 2.2uA (Avg.)
- High ESD protection, HBM(HBM) 4000V
- Operation frequency : 25Hz

➤ Functional Diagram

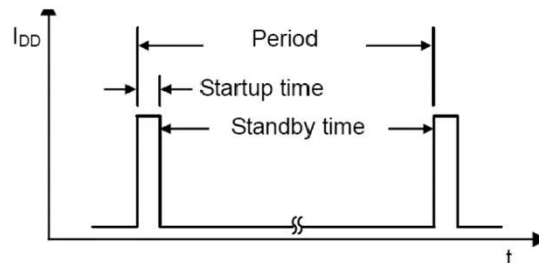


➤ Absolute Maximum Ratings@($T=25^{\circ}\text{C}$)

Parameter	Min	Typ	Max	Unit
Supply Voltage			7	V
Output Voltage			7	V
Output current		1		mA
Operating temperature range	-40		85	$^{\circ}\text{C}$
Storage temperature range	-65		150	$^{\circ}\text{C}$
Maximum Junction temp.			150	$^{\circ}\text{C}$
Magnetic flux density		unlimited		Gauss

➤ Electrical Specifications @($T=25^{\circ}\text{C}$, $V_{DD} = 1.5\text{V}$)

Parameter	Symbol	Test Conditions	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	μA
		Average 【40 μs /10mS】	2.2	3	5.9	μA
Output Voltage	VOH	IOUT = 0.5mA, Source	VDD-0.2			V
	VOL	IOUT = 0.5mA, Sink			0.2	V
Output Leakage Current	IOFF	Output off			1	μA
Startup time	TAW	Awake state		40	80	μs
Standby time	TSL	Sleep state		40	80	mS
Duty cycle				0.1		%
Electro-Static Discharge	ESD	HBM	4			KV



Note: Startup / Standby time



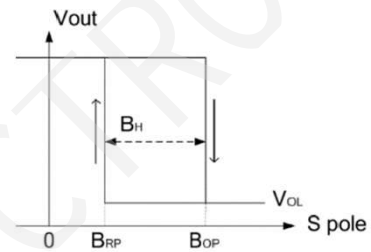
CH173

South pole High Sensitivity Low Power Hall Effect Switch

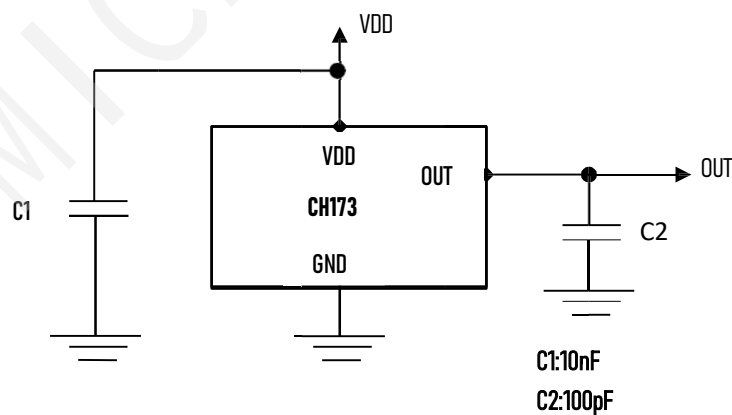
➤ Magnetic Specifications

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Point	BOPS	S pole , $B > BOP$, Vout On	10	35	50	Gauss
Release Point	BRPS	S pole , $B < BRP$, Vout Off	5	25	45	Gauss
Hysteresis	BH	$ BOP - BRP $		10		Gauss

Parameter	Test condition	OUT
Weak magnetic field	$B < BRP$	H
South pole	$B > BOP$	L



➤ Typical Application Circuit





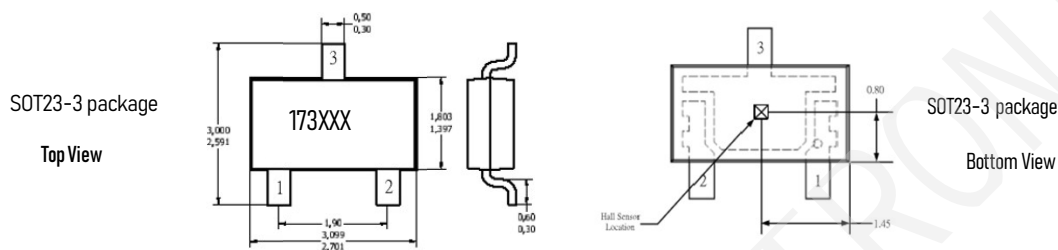
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South pole High Sensitivity Low Power Hall Effect Switch

➤ Package Specifications 【unit: mm】

● SOT23-3 package

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



● TO-92S package

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

