

MicroPower , Ultra-Sensitive CMOS Hall IC

■ General Description

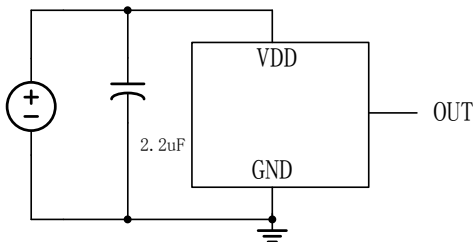
LN4919 is with proprietary Hall effect plate and single CMOS output driver, mainly designed for battery-powered, hand-held equipment (such as Cellular and Cordless Phone, PDA).

When north-pole of sufficient strength on chip or south-pole of sufficient strength under chip, the LN4919 will turn on the OUT output. When south-pole of sufficient strength on chip or north-pole of sufficient strength under chip, the LN4919 will turn on the OUT output.

LN4919 series have above two kinds Hall effect output, please select appropriate model for different application.

While the magnetic flux density (B) is larger than operate point BOP, the OUT will be turned on (low), the output is held until B is lower than release point BRP, then turned off (high).

■ Typical Application Circuit



■ Ordering Information

LN4919①②②

SYMBOL	Description
①	S:Sout pole
	N:North pole
②	M->SOT23-3L
	T->TSOT23-3L
③	Device Orientation: R=Embossed Taped :Standard feed L=Embossed Taped: Reverse feed

■ Features

- 1.8V to 4.5V battery operation
- Operation with North or South Pole
- Chopper stabilized
- Superior temperature stability
- Extremely Low Switch-Point Drift
- Insensitive to Physical Stress
- Good RF noise immunity
- ESD HBM bigger than 4kV
- Lead Free Finish/RoHS Compliant

■ Application

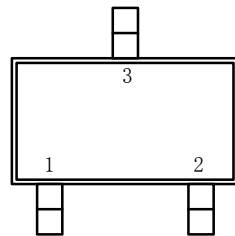
- Mobile phones and Portable electronic devices
- Notebook

■ Package

- SOT-23-3L
- TSOT23-3L

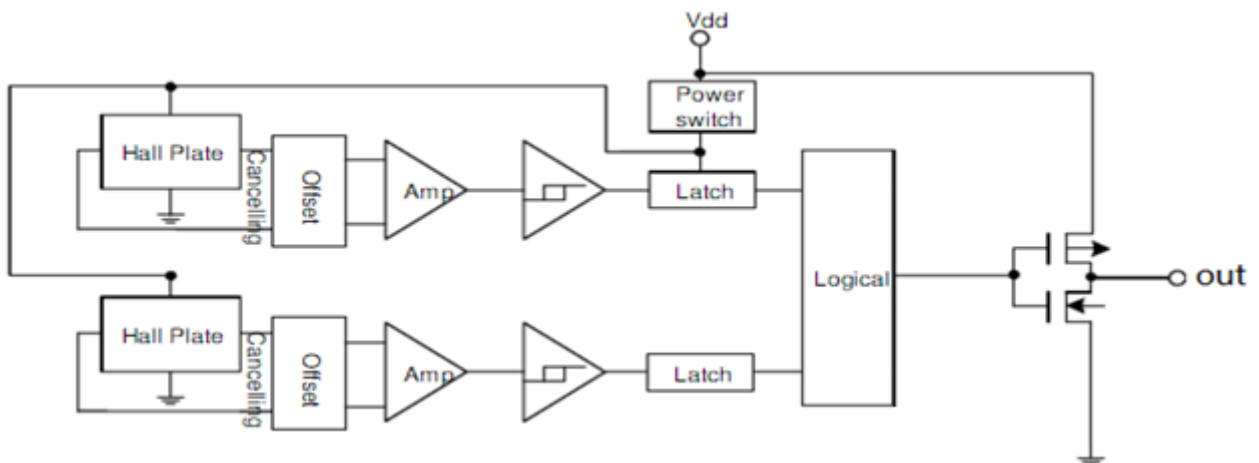
■ Marking

Part Number	Package	Marking	Part Number	Package	Marking
LN4919SMR	SOT23-3L	9SMY	LN4919NMR	SOT23-3L	9NMY
LN4919STR	TSOT23-3L	9STY	LN4919NTR	TSOT23-3L	9NTY

■ Pin Configuration


SOT23-3L / TSOT23-3L
(TOP VIEW)

Pin Number	4919 Pin Name						Pin Name	Function Description
	SMR	NMR	STR	NTR				
1	VDD	VDD	VDD	VDD			VDD	Power
2	SOUT	NOUT	SOUT	NOUT			SOUT	South Output
3	GND	GND	GND	GND			NOUT	North Output
4	-	-					NC	Floating

■ Function Block Diagram


■ Absolute Maximum Ratings

Symbol	Characteristics	Values	Unit
V _{DD}	Supply voltage	1.65~5	V
I _{DD}	Operating current	-1-4.5	mA
V _{OUT}	Output voltage	-0.3-5	V
I _{OUT}	Output current	-1-2.0	mA
T _S	Storage temperature range	-40~+150	°C
T _J	Maximum junction temperature	150	°C
-	ESD Protection	4000	V

■ Electrical Characteristics

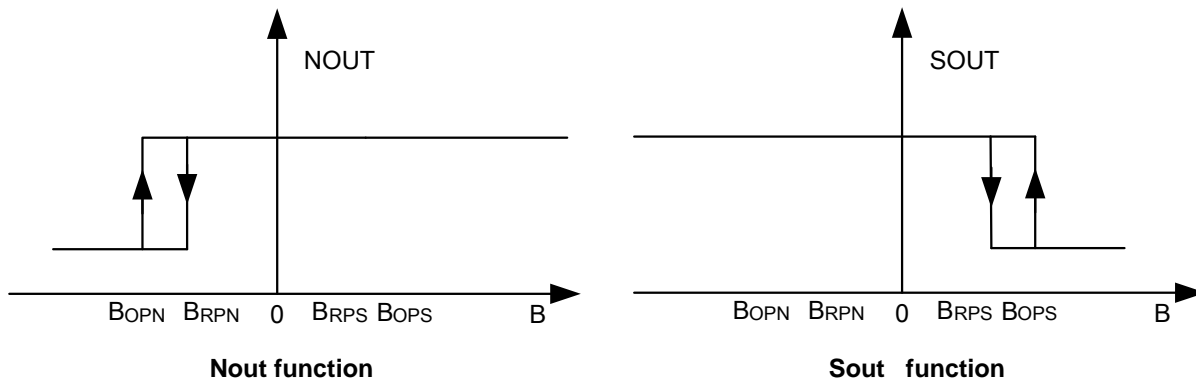
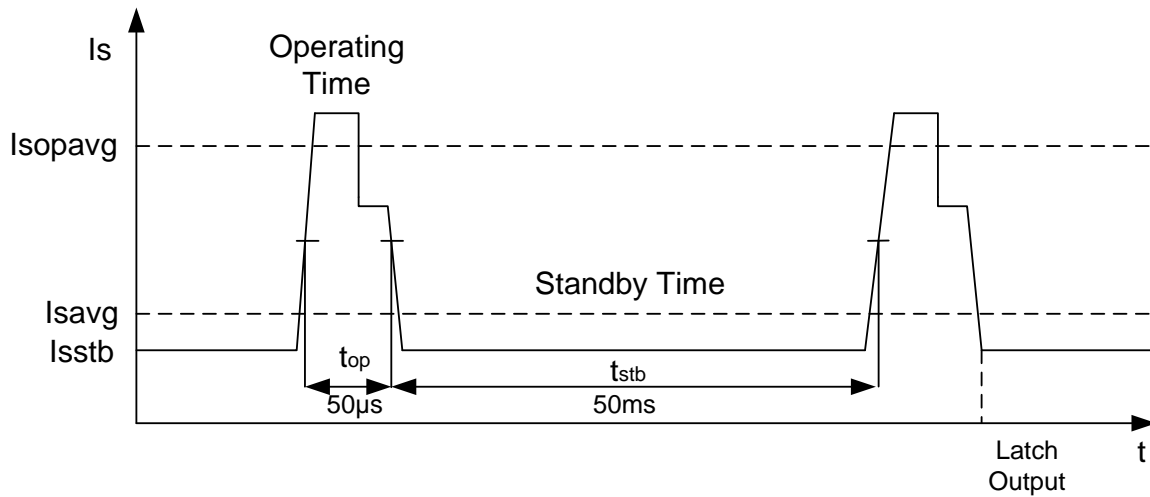
 AC/DC Characteristics (T_A=+25°C, V_{DD}=3.0V, Unless otherwise specified)

Symbol	Characteristic	Conditions	Min	Typ	Max	Unit
V _{DD}	Supply voltage	—	1.8	—	4.5	V
I _{SAVG}	Averaged supply current		3	5	7	uA
I _{SOPAVG}	Averaged current during operating time		0.5	0.7	1	mA
I _{SOPT}	Peak current during operating time				2	mA
I _{SSTB}	Supply current during standby time		1		2	uA
V _{OH}	Output High Voltage	I _{OUT} =-0.5mA	2.7	2.9		V
V _{OL}	Output low Voltage	I _{OUT} =0.5mA		0.1	0.3	V
t _r	Output rise time	R _L =2.7KΩ C _L =10pF		0.5	1	us
t _f	Output fall time	R _L =2.7KΩ C _L =10pF		0.1	1	us
t _{op}	Operating time		40	50	60	us
t _{stb}	Standby time		40	50	60	ms
t _{op} /t _{stb}	Duty cycle			0.1		%
t _{stu}	Start-up time of IC			7	13	us

■ Magnetic Characteristics

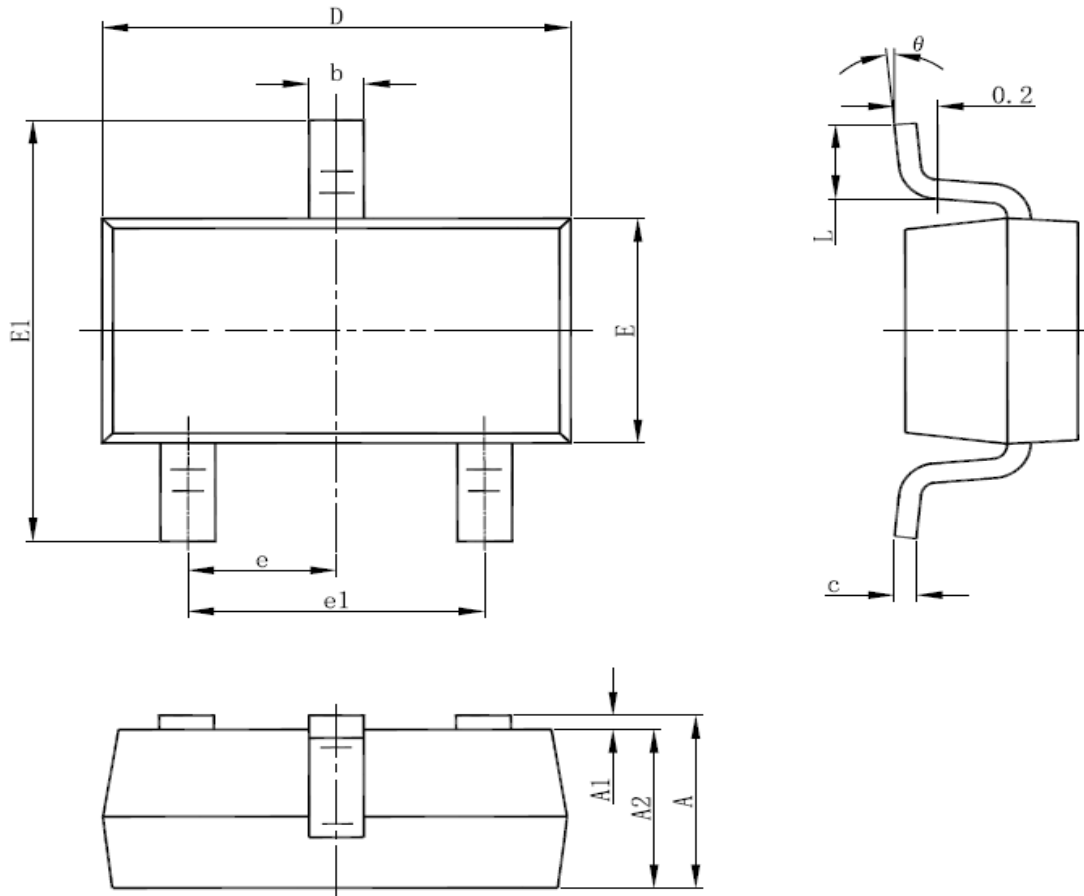
($T_A=+25^\circ\text{C}$, $V_{DD}=3.0\text{V}$, Unless otherwise specified)

Symbol	Min	Typ	Max	Unit
BOPS	2	3.5	5	mT
BRPS	1	2.0	4.0	mT
BOPN	-5	-3.5	-2.0	mT
BRPN	-4.0	-2.0	-1	mT



Package

- SOT-23-3L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

