MicroPower , Ultra-Sensitive CMOS Hall IC

■ General Description

LN4916 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 south-pole of sufficient strength on chip or north-pole of sufficient strength under chip, the LN4916 will turn on the SOUT output.

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

■ Features

- 2.0V to 4.5V battery operation
- Operation with 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

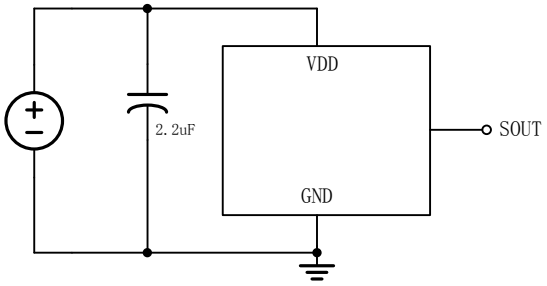
■ Package

- SOT-553

■ Application

- Mobile phones and Portable electronic devices
- Notebook

■ Typical Application Circuit

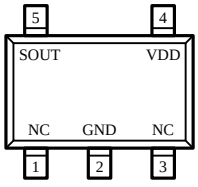


■ Ordering Information and Marking

Order Name	Package	Marking
LN4916KR	SOT-553	16KY

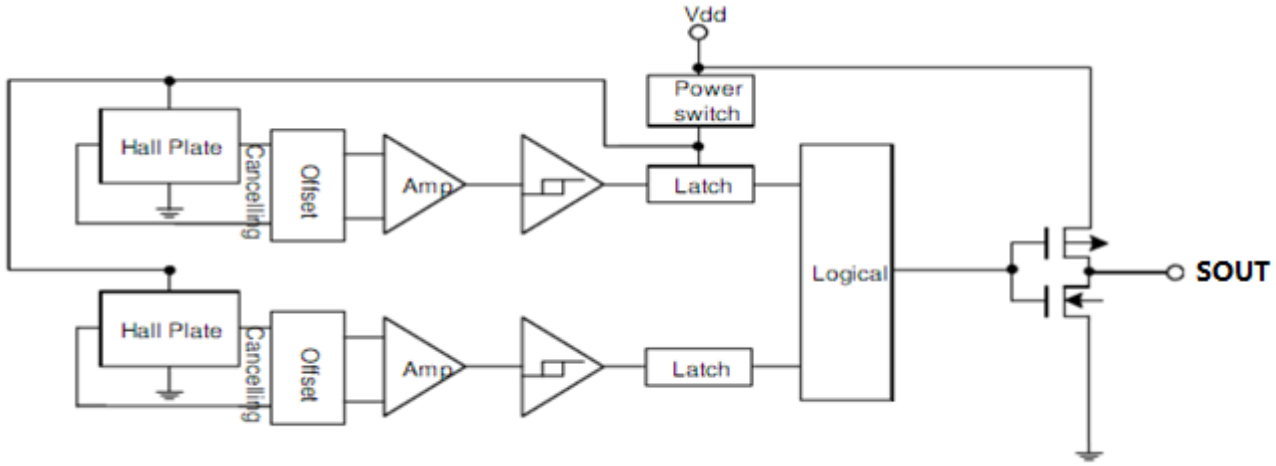
■ Pin Configuration

Pin Number SOT-553	Pin Name	Function Description
1	NC	No Connect
2	GND	Ground
3	NC	No Connect
4	VDD	Power
5	SOUT	South Output



SOT-553
(TOP VIEW)

■ Function Block Diagram



■ Absolute Maximum Ratings

Symbol	Characteristics	Values	Unit
Vdd	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	℃
T_J	Maximum junction temperature	150	℃
-	ESD Protection	4000	V

■ Electrical Characteristics

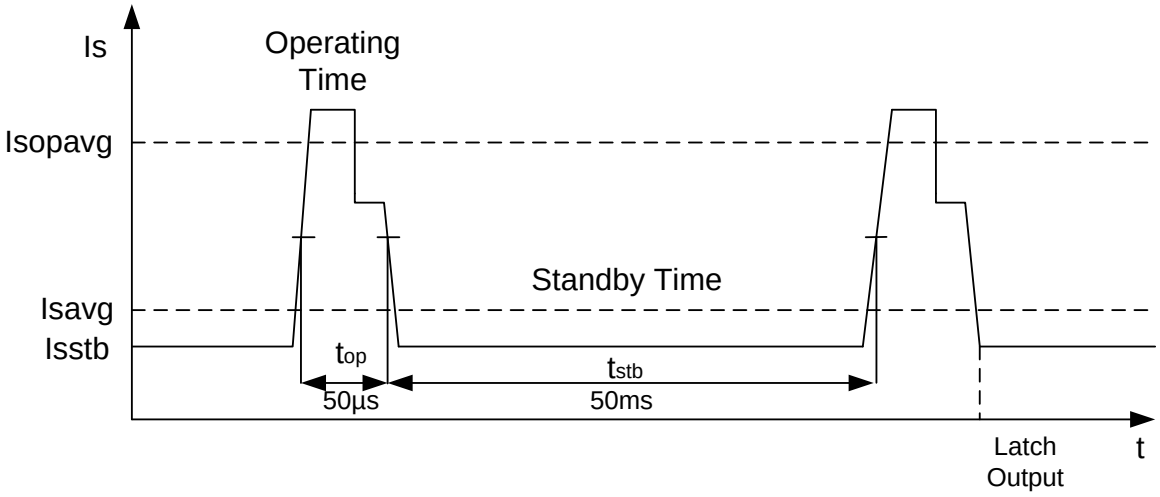
AC/DC Characteristics (T_A=+25℃,V_{DD}=3.0V,Unless otherwise specified)

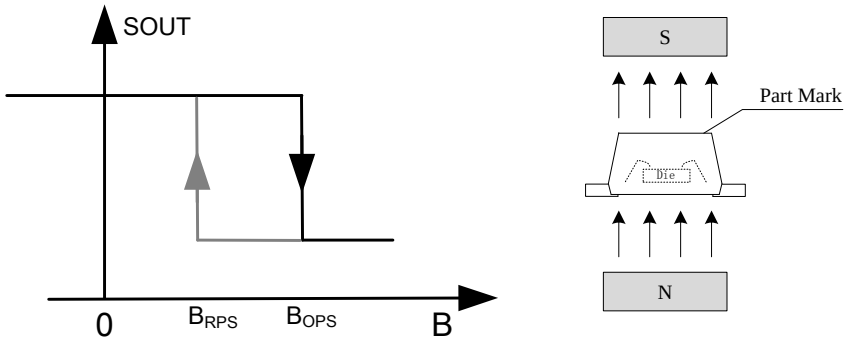
Symbol	Characteristic	Conditions	Min	Typ	Max	Unit
VDD	Supply voltage	—	2.0	—	4.5	V
I_{SAVG}	Averaged supply current		3	5	7	uA
I_{SOPAVG}	Averaged current during operating time		0.5	0.7	1	mA
I_{SOPT}	Peak current during operating time				2	mA
I_{SSTB}	Supply current during standby time		1		2	uA
V_{OH}	Output High Voltage	IOUT=-0.5mA	2.7	2.9		V
V_{OL}	Output low Voltage	IOUT=0.5mA		0.1	0.3	V
t_r	Output rise time	R_L=2.7KΩ C_L=10pF		0.5	1	us
r_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

■ Mangentic Characteristics

(T_A=+25℃,V_{DD}=3.0V, Unless otherwise specified)

Symbol	Min	Typ	Max	Unit
BOPS	2	3.5	5.5	mT
BRPS	1	1.8	4.0	mT

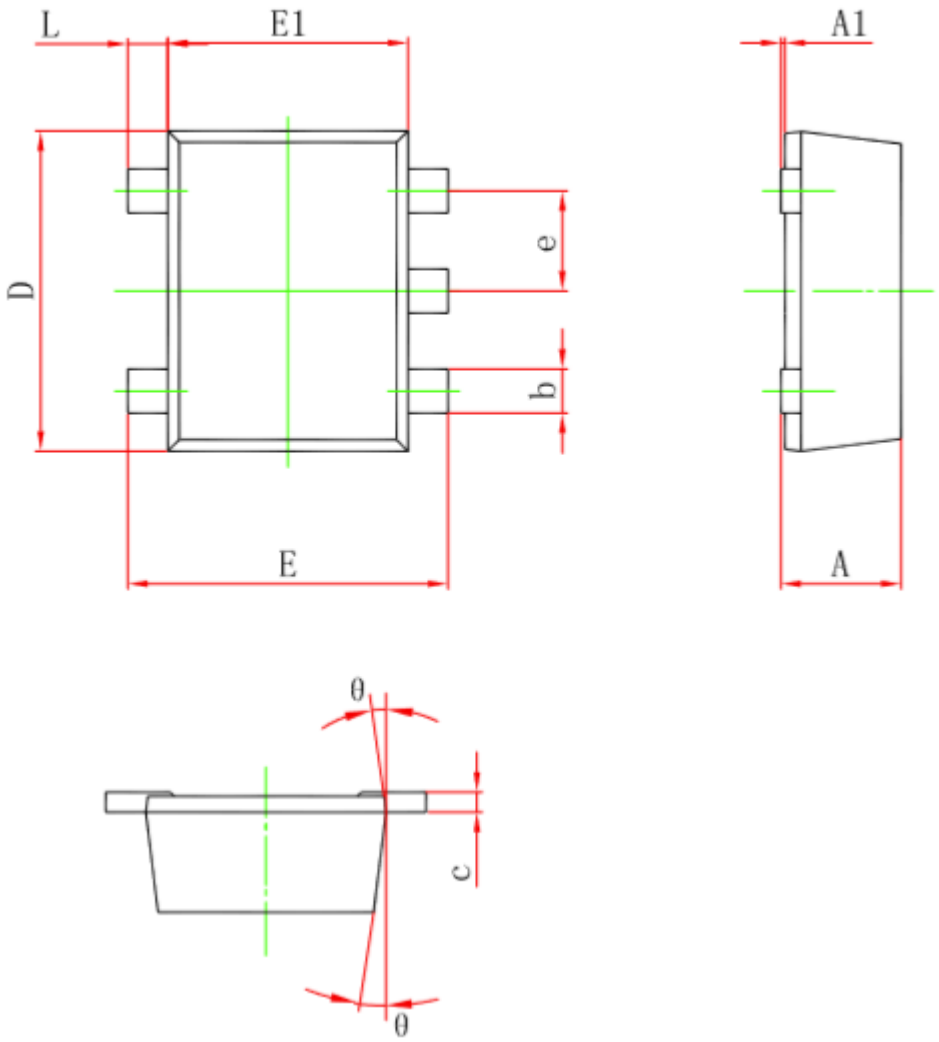




Sout function

■ Package

- **SOT-553**



Symbol	Dimensions In Millimeters		Dimensions in inches	
	Min.	Max.	Min.	Max.
A	0.525	0.600	0.021	0.024
A1	0.000	0.050	0.000	0.002
e	0.450	0.550	0.018	0.022
c	0.090	0.160	0.004	0.006
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
E1	1.100	1.300	0.043	0.051
E	1.500	1.700	0.059	0.067
L	0.100	0.300	0.004	0.012
θ	7 °REF.		7 °REF.	