



CJH1311

General Description

CJH1311 is a micropower, ultra sensitive, uni-polar hall effect switch. It is mainly designed for battery-powered, hand held equipment. CJH1311 includes hall sensor, a small-signal amplifier, dynamic offset cancellation and CMOS output. Superior high-temperature performance is made possible through Dynamic Offset Cancellation, which reduces the residual offset voltage normally caused by device package over molding, temperature dependencies, and thermal stresses.

North pole of sufficient strength will turn the output on.

CJH1311 is available in SOT-23-3L packages. The operating temperature is -40°C to 150°C .

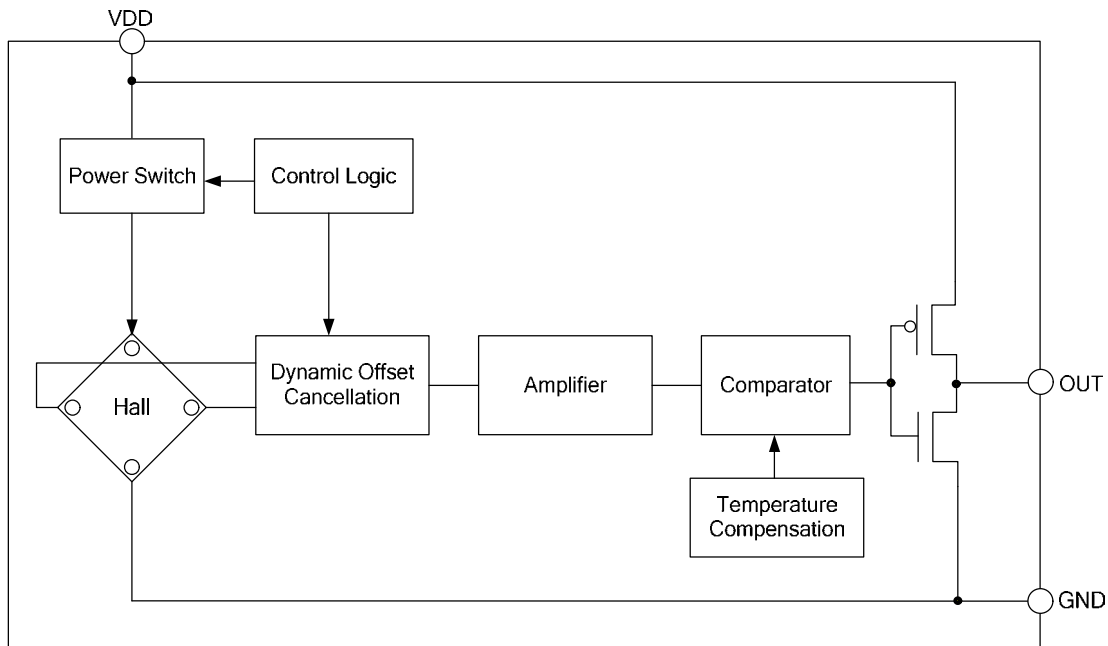
Features

- ◆ Wide operating voltage, 2~5V
- ◆ Micro power
- ◆ Operating North pole
- ◆ Superior temperature stability
- ◆ Extremely Low Switch-point Drift
- ◆ ESD (HBM) 6000V
- ◆ Small package size

Application

- ◆ PDA, IPAD
- ◆ Cellular phone

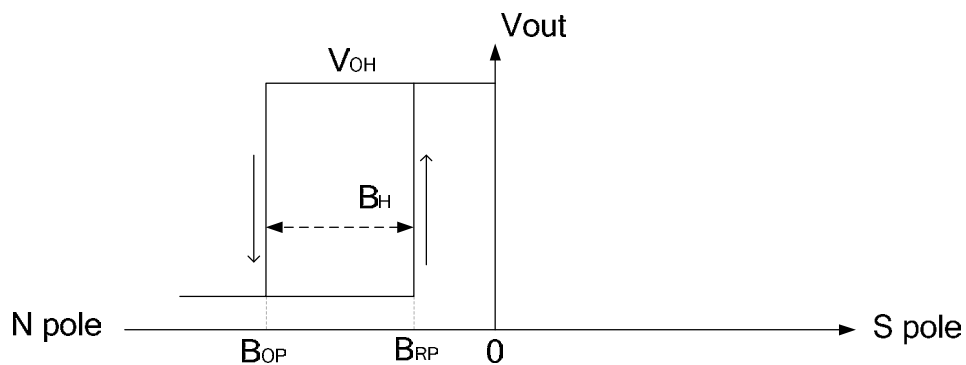
Function Block Diagram



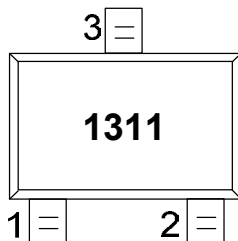
Ordering Information

Part No.	Packing Form	Package Code
CJH1311	tape reel, 3000 pcs/reel	SOT-23-3L

Output Voltage VS. Magnetic Pole



PIN Configurations



Pin Name	PIN NO.	FUNCTION
	SOT-23-3L	
V_{DD}	1	Supply voltage
GND	3	GND
V_{OUT}	2	OUT

Electrical Characteristics

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Supply Voltage	V_{DD}	-0.3~5.5	V
Magnetic Flux Density	B	unlimited	Gauss
Junction Temperature	T_A	-40~150	°C
Storage Temperature	T_s	-50~160	°C
ESD(HBM)		6000	V

Electrical Parameters ($V_{DD}=5V$ @ 25°C room temperature, unless specified otherwise)

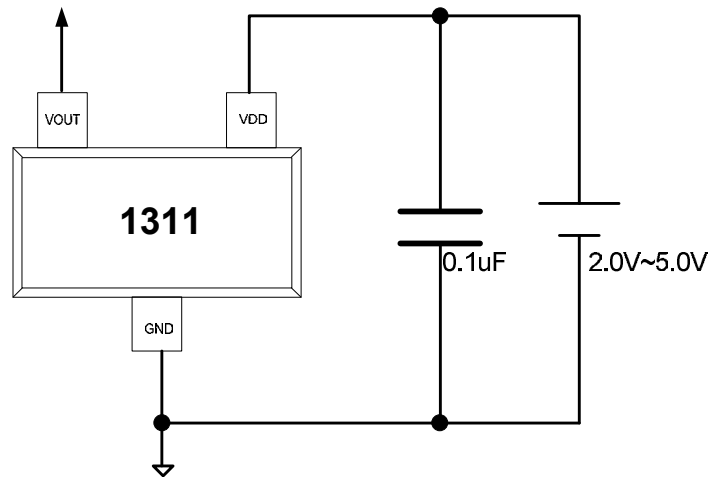
Parameter	Symbol	Condition	Min	Typ.	Max	Unit
Output High Voltage	V_{OH}	$I_{OUT}=0.5mA$	$V_{DD}-0.2$	-	-	V
Output Low Voltage	V_{OL}	$I_{OUT}=0.5mA$	-	-	0.2	V
Supply Current	$I_{DD(EN)}$		-	2	-	mA
	$I_{DD(dis)}$		-	3	-	uA
Average Current	$I_{DD(average)}$		-	5	-	uA
Awake Time	T_{awake}		-	50	100	us
Period	T_{period}		-	25	-	ms
Duty Cycle	D.C.		-	0.2%	-	

Magnetic Specifications

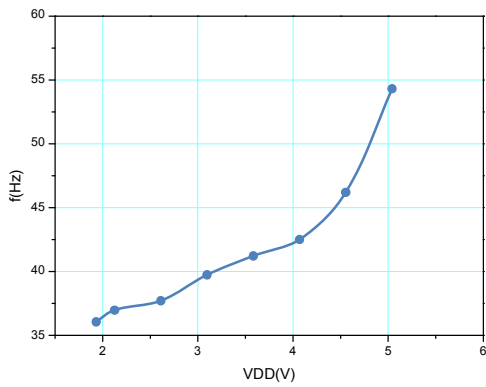
Parameter	Symbol	Min.	Typ.	Max.	Unit
Operate Points	BOPS	15	30	45	G
Release Points	BRPS	5	20	35	G
Hysteresis	BHYS	6	10	14	G

Typical Characteristics

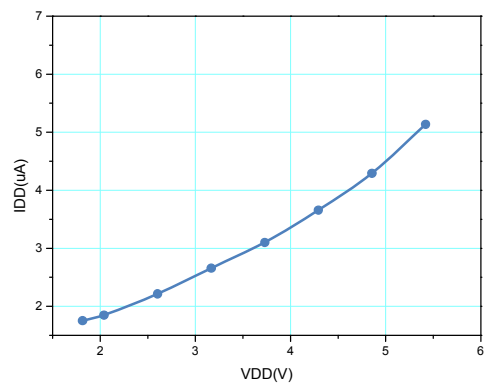
Typical Application Circuit



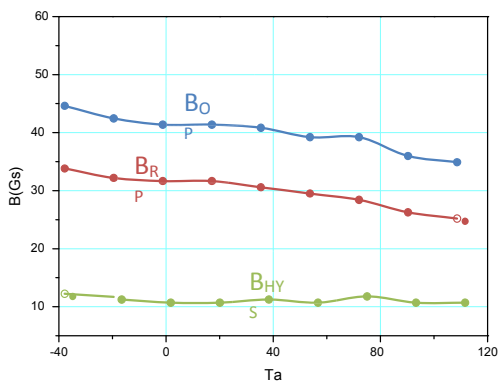
Waveform



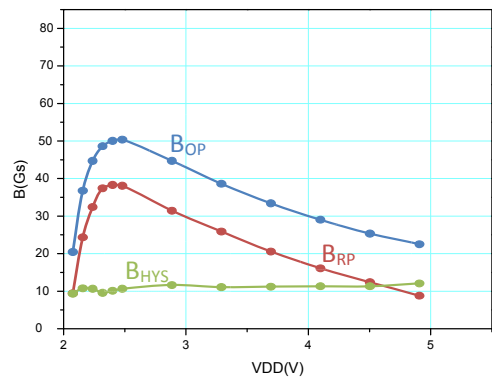
Frequency vs. VDD



Supply current vs. VDD

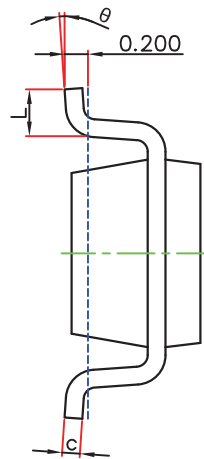
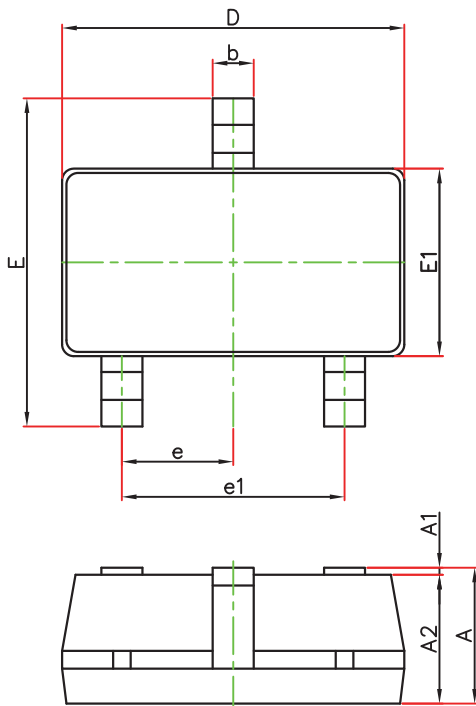


B_{OP}&B_{RP} vs. T_A

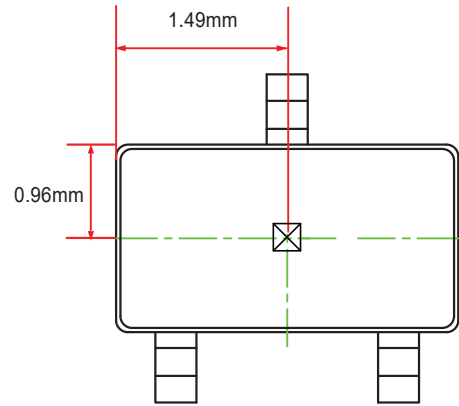


B_{OP}&B_{RP} vs. VDD

SOT-23-3L Package Outline Dimensions

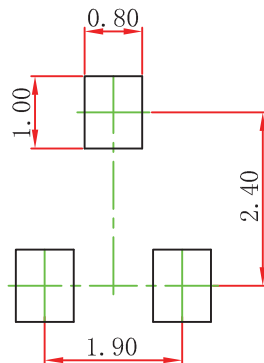


Hall Location



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
E1	1.500	1.700	0.059	0.067
E	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°

SOT-23-3L Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.