



CJH0104

General Description

CJH0104 is a micropower, ultra sensitive hall effect switch. It is mainly designed for battery-powered, hand held equipment.

CJH0104 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. Either North or South pole of sufficient strength will turn the output on.

CJH0104 is available in TO-92S packages. The operating temperature is -40°C to 150°C .

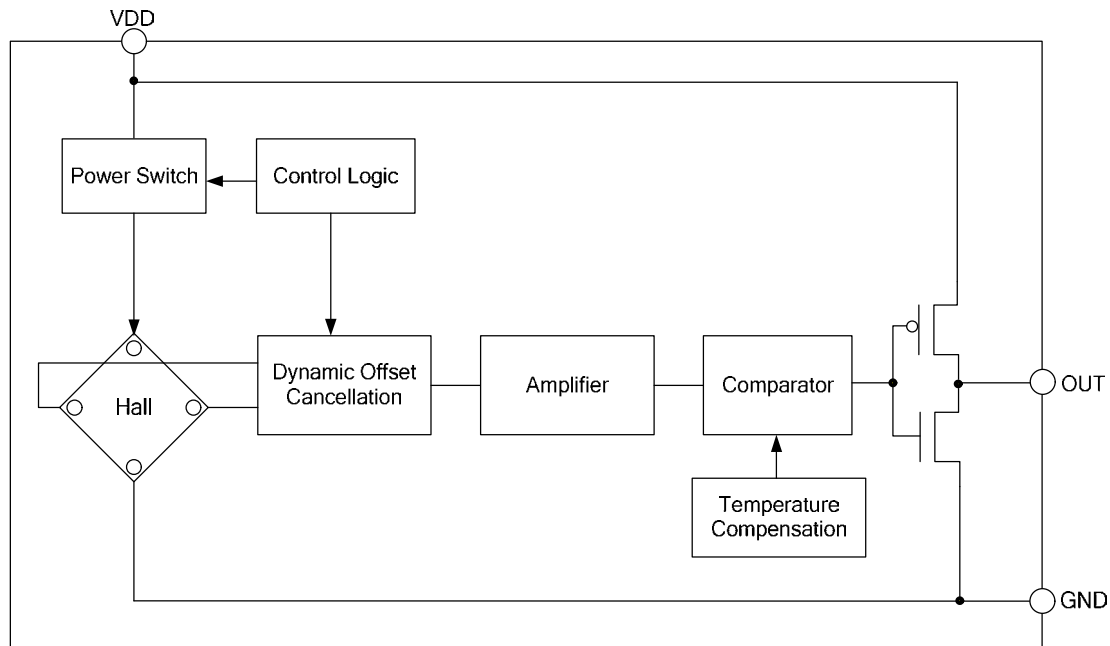
Features

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

Application

- ◆ PDA, IPAD
- ◆ Cellular phone

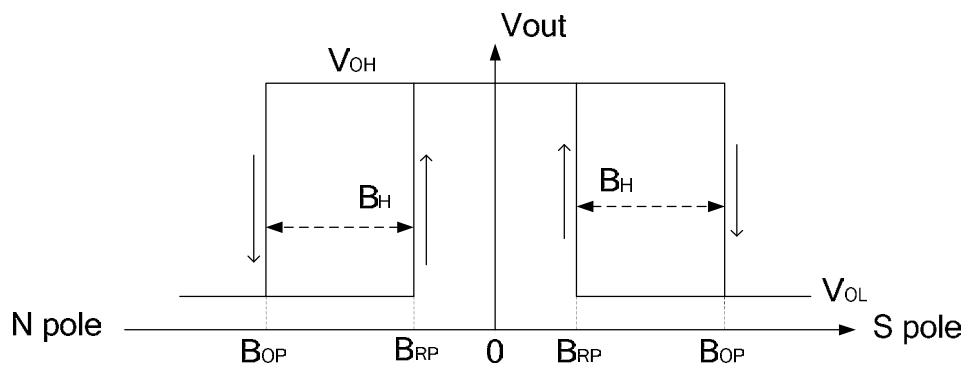
Function Block Diagram



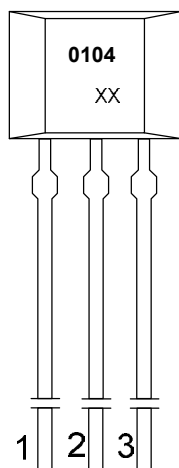
Ordering Information

Part No.	Packing Form	Package Code
CJH0104	bulk, 1000 pcs/bulk	TO-92S

Output Voltage VS. Magnetic Pole



PIN Configurations



Pin Name	PIN NO.	FUNCTION
	TO-92S	
V_{DD}	1	Supply voltage
GND	2	GND
V_{OUT}	3	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)

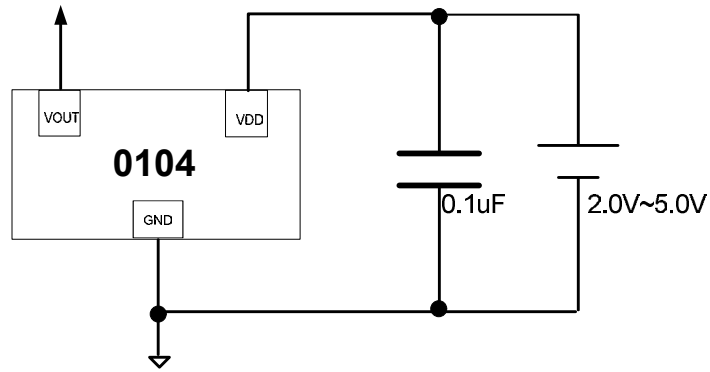
Parameter	Symbol	Condition	Min	Typ.	Max	Unit
Output High Voltage	V_{OH}	$I_{OUT}=0.5mA$	$V_{DD}-0.2$	-	-	V
Output Low Voltage	V_{OL}	$I_{OUT}=0.5mA$	-	-	0.2	V
Supply Current	$I_{DD(EN)}$		-	2	-	mA
	$I_{DD(dis)}$		-	3	-	uA
Average Current	$I_{DD(average)}$		-	5	-	uA
Awake Time	T_{awake}		-	50	100	us
Period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

Magnetic Specifications (@ 25°C room temperature)

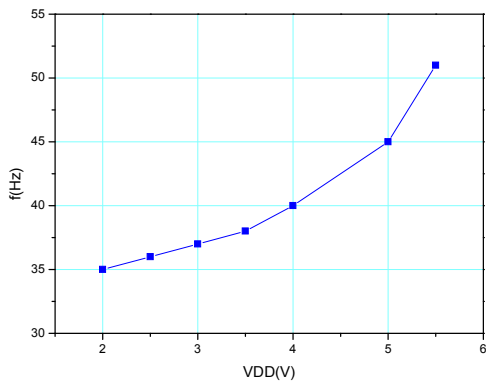
Parameter	Symbol	Min.	Typ.	Max.	Unit
Operate Points (Output ON)	BOPS		20	35	G
	BOPN	-35	-20		G
Release Points (Output OFF)	BRPS	5	15		G
	BRPN		-15	-5	G
Hysteresis	BHYS		5		G

Typical Characteristics

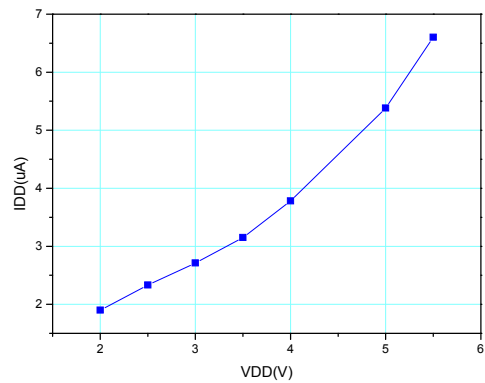
Typical Application Circuit



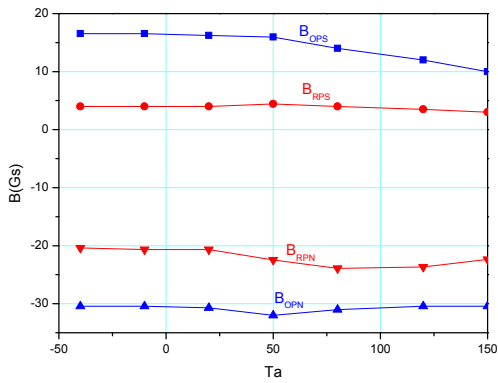
Waveform



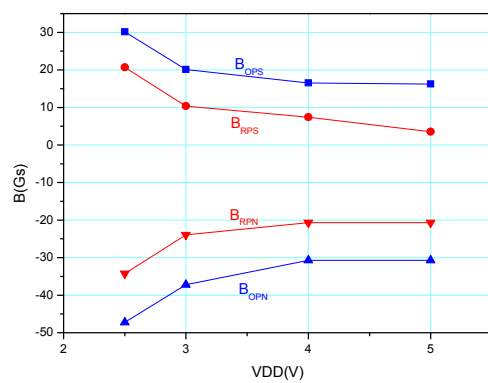
Frequency vs. VDD



Supply current vs. VDD

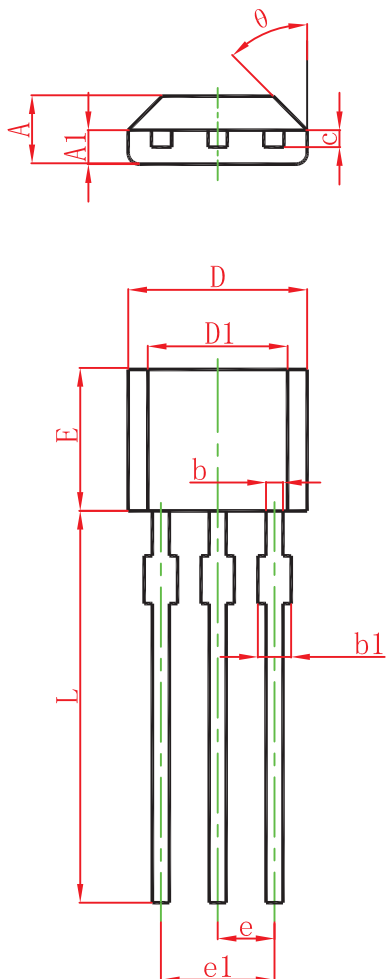


B_{OP}&B_{RP} vs. T_A



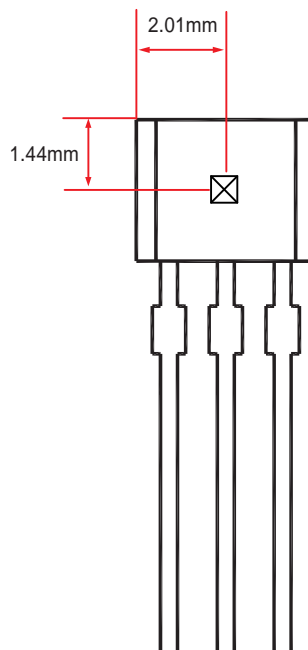
B_{OP}&B_{RP} vs. VDD

TO-92S Package Outline Dimensions

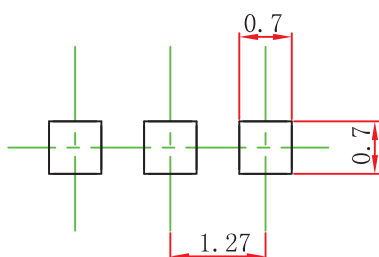


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.420	1.620	0.056	0.064
A1	0.660	0.860	0.026	0.034
b	0.330	0.480	0.013	0.019
b1	0.400	0.510	0.016	0.020
c	0.330	0.510	0.013	0.020
D	3.900	4.100	0.154	0.161
D1	2.280	2.680	0.090	0.106
E	3.050	3.250	0.120	0.128
e	1.270 TYP.		0.050 TYP.	
e1	2.440	2.640	0.096	0.104
L	15.100	15.500	0.594	0.610
θ	45° TYP.		45° TYP.	

Hall Location



TO-92S Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.