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CC6211

MicroPower, Ultra-Sensitive

Hall effective switch

General Description

CC6211 is a micropower, ultra sensitive hall effect switch. It is mainly designed for battery-powered, hand held equipment.

CC6211 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.

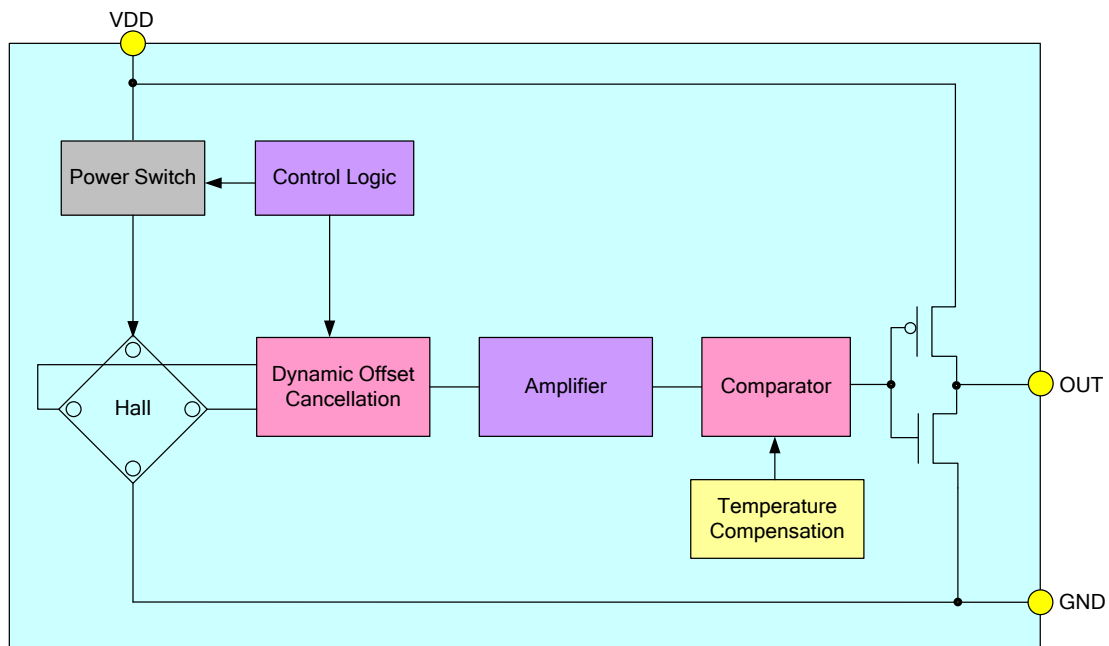CC6211 is available in TO-92S, SOT23-3 and DFN4L packages. The operating temperature is -40℃ to 150℃.

Features

◆ Wide operating voltage, 2~5V

◆ micro power

◆ Operating with one pole

◆ Superior temperature stability

◆ Extremely Low Switch-point Drift

◆ ESD（HBM）6000V

◆ Small package size

Application

◆ PDA, IPAD

◆ Cellular phone

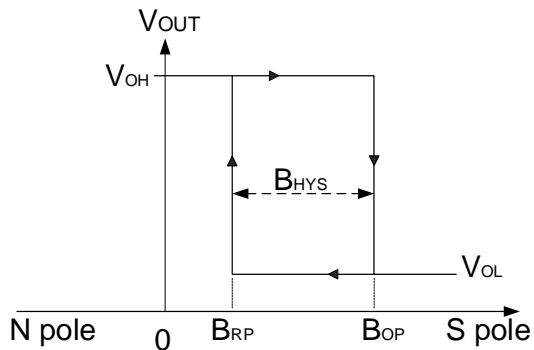## Function Block Diagram
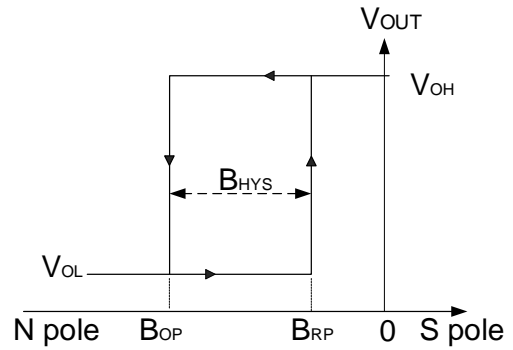
Ordering Information

Part No.	Packing Form	Package Code
CC6211TO	bulk，1000 pcs/bulk	TO-92S
CC6211ST	tape reel，3000 pcs/reel	TSOT23-3
CC6211DN	tape reel，5000 pcs/reel	DFN4L

Output Voltage VS. Magnetic Pole

CC6211TO & CC6211DFN   CC6211ST

Note: magnetic field is on the mark side.

PIN Configurations
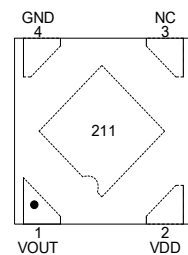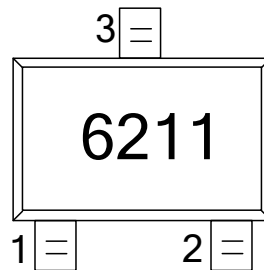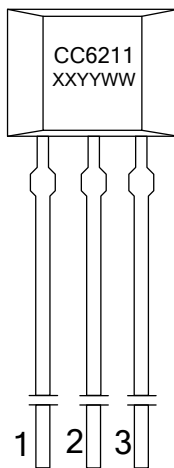
Pin Name	PIN NO.			FUNCTION
	TO-92S	SOT23-3	DFN4L	
V_{DD}	1	1	2	Supply voltage
GND	2	3	4	GND
V_{OUT}	3	2	1	OUT
-	-	-	3	NC

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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	℃
Storage Temperature	Ts	-50~160	℃
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

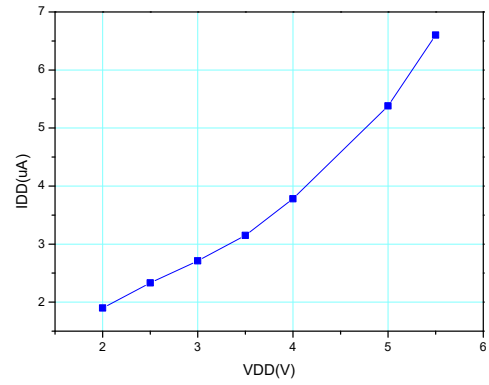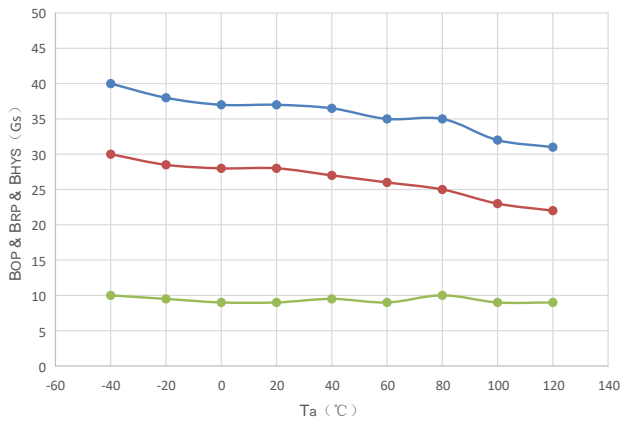| Parameter	Symbol	Condition	Min	Typ.	Max	Unit
Operating Point	B_{OP}	25 ℃	15	30	45	Gauss
Release Point	B_{RP}	25 ℃	5	20	35	Gauss
Hysteresis	B_{HYS}	25 ℃	6	10	14	Gauss

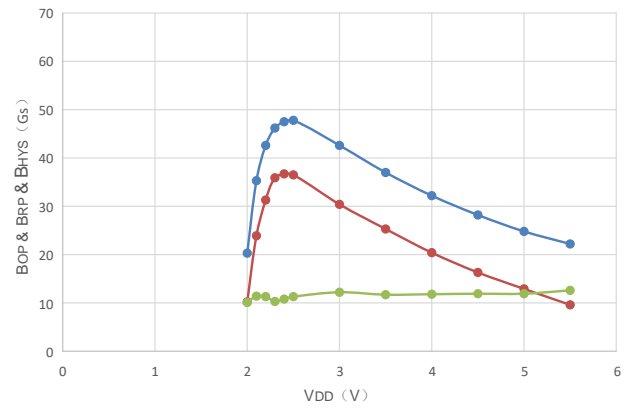## Typical Application Circuit
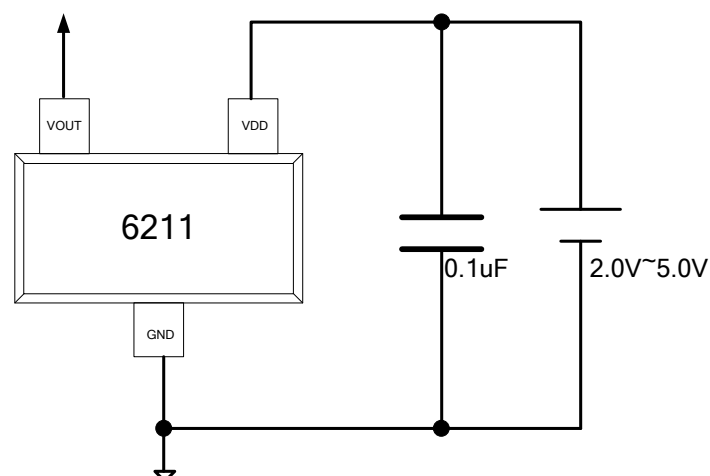
Waveform
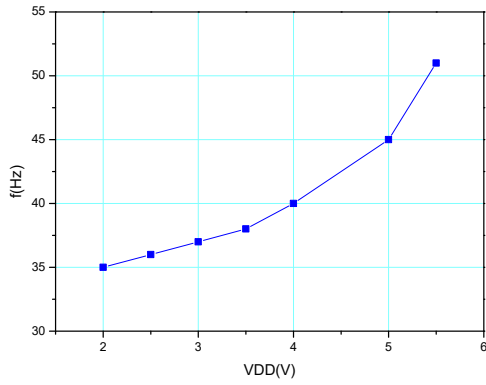
Frequency vs. VDD

Supply current vs. VDD
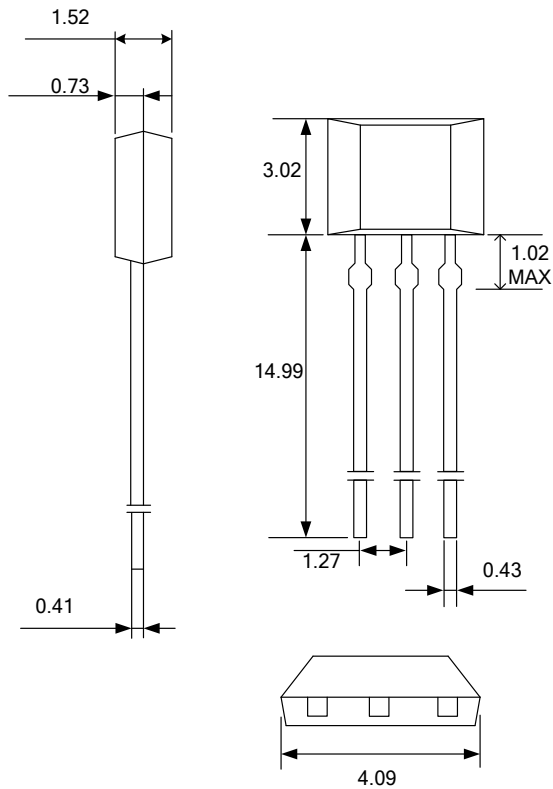

B_{OP}&B_{RP} vs. T_A

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

Package Information
(1)TO-92S Package

Notes:

All dimensions are in millimeters

Marking:
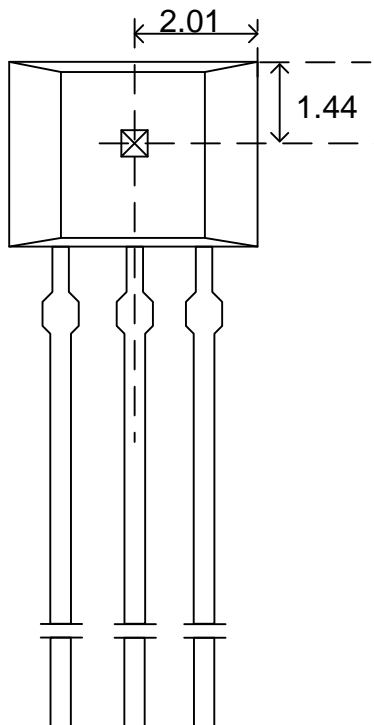
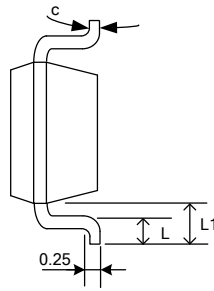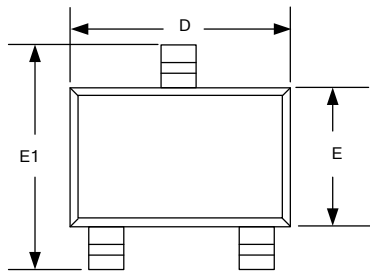1st Line: CC6211 - Name of the device

2nd Line: YYWW

YY - assembly year (last 2 digits)
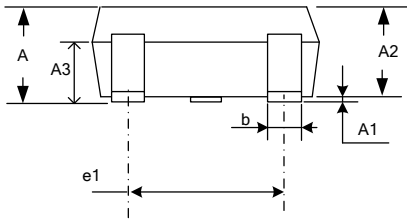
WW - assembly week number

Hall location

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(2)SOT23-3 package

Notes:

All dimensions are in millimeters

Marking:

6211

Hall location
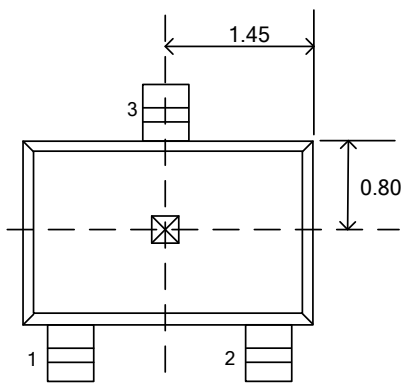
Symbol	millimeter	
	Min	Max
A	0.35	1.35
A1	0.04	0.12
A2	1.00	1.20
A3	0.55	0.75
b	0.37	0.43
c	0.11	0.21
D	2.77	3.07
E	1.40	1.80
E1	2.70	3.00
e1	1.80	2.00
L	0.35	0.55
L1	0.55	0.75

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(3)DFN4L package
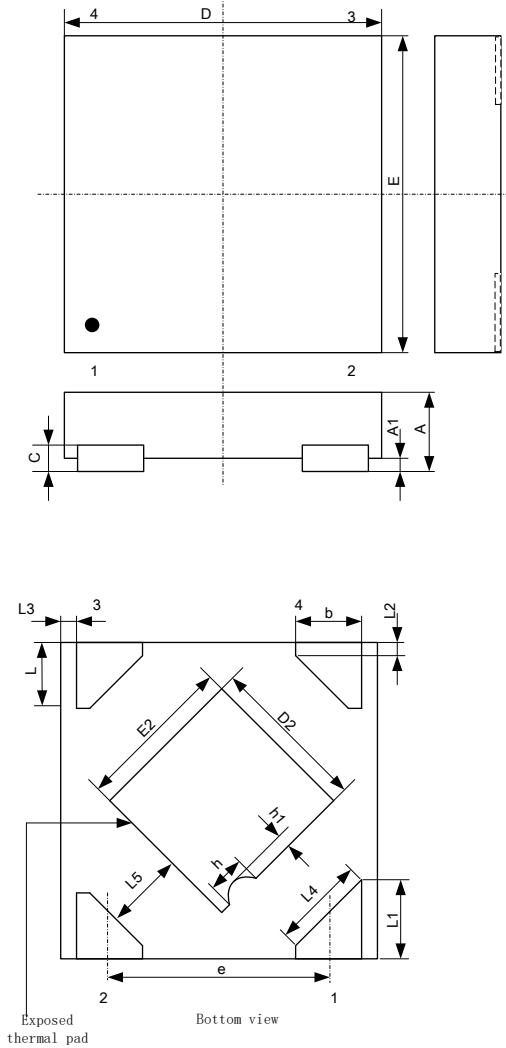
Notes:

All dimensions are in millimeters

Marking:

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Symbol	millimeter		
	Min	Typ	Max
A	0.35	-	0.40
A1	0.00	0.02	0.05
b	0.20	0.25	0.30
c	0.07	0.12	0.17
D	0.95	1.00	1.05
D2	0.38	0.48	0.58
e	0.65BSC		
E	0.95	1.00	1.05
E2	0.38	0.48	0.58
L	0.20	0.25	0.30
L1	0.27	0.32	0.37
L2	0.077REF		
L3	0.05REF		
L4	0.34REF		
L5	0.20REF		
h	0.09REF		
h1	0.03REF		

Hall location