

CC6204/5

MicroPower, Ultra-Sensitive Bipolar Hall effective switch

General Description

CC6204 and CC6205 are micropower, ultra sensitive, bipolar hall effect switch. They are mainly designed for battery-powered, hand held equipment.

Each device 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.

A south polarity magnetic field of sufficient strength is required to turn the output on. A north polarity field of sufficient strength is necessary to turn the output off.

CC6204/5 are available in TO-92S and TSOT23-3 packages. The operating temperature is -40 to 150°C.

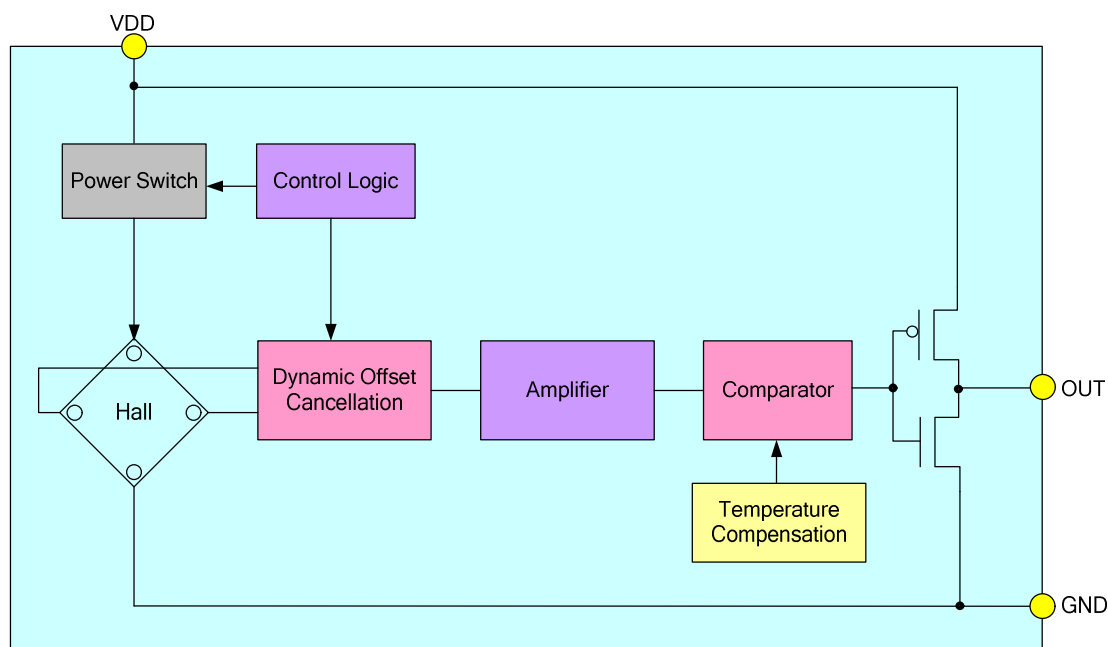
Features

- ◆ 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
- ◆ Angular Position Detection

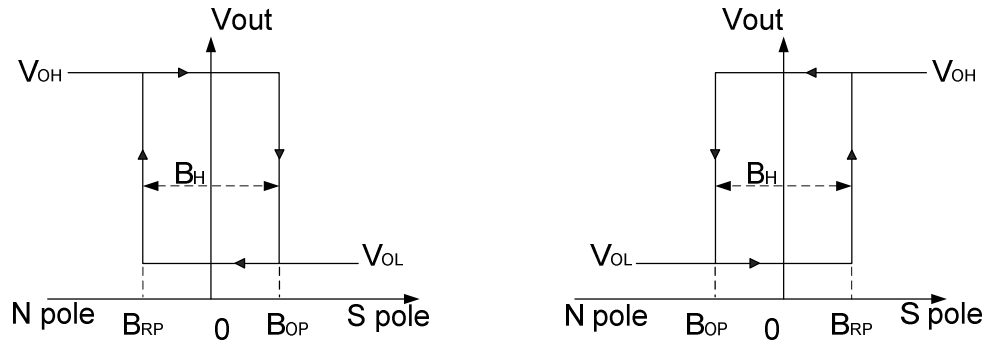
Function Block Diagram



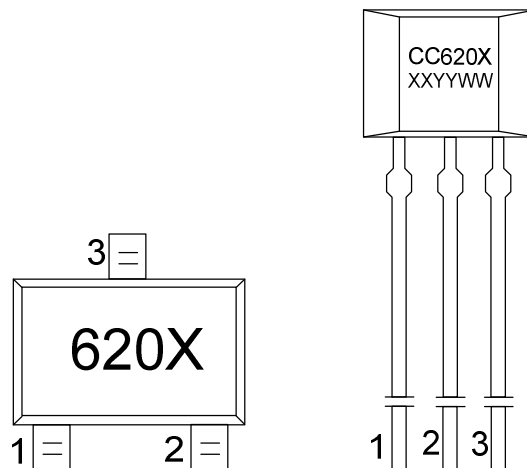
Ordering Information

Part No.	Packing Form	Package Code
CC6204/5TO	bulk, 1000 pcs/bulk	TO-92S
CC6204/5ST	tape reel, 3000 pcs/reel	TSOT23-3

Output Voltage VS. Magnetic Pole



PIN Configurations



Pin Name	PIN NO.		FUNCTION
	TO-92S	TSOT23-3	
V_{DD}	1	1	Supply voltage
GND	2	3	GND
V_{OUT}	3	2	OUT

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

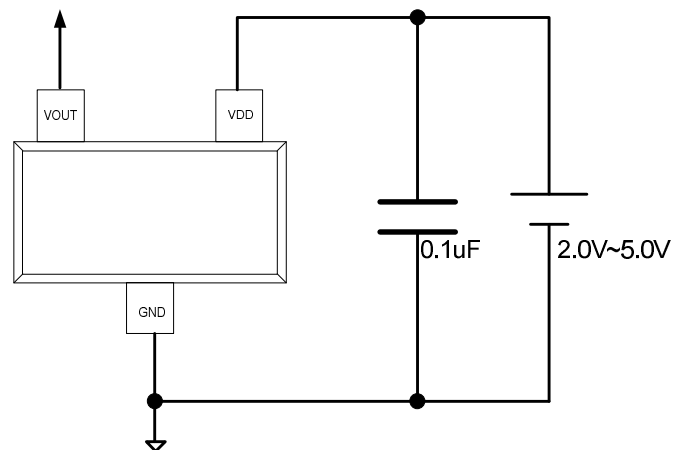
Electrical Parameters (V_{DD}=5V @ 25°C room temperature, unless specified otherwise)

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}	CC6204	-	50	100	us
		CC6205	-	50	100	us
Period	T _{period}	CC6204	-	25	-	ms
		CC6205	-	182	-	ms
Duty Cycle	D.C.	CC6204	-	0.2	-	%
		CC6205	-	0.03	-	%

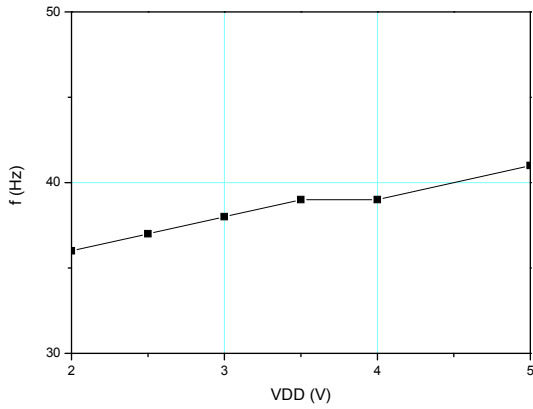
Magnetic Specifications

Parameter	Symbol	Condition	Min	Typ.	Max	Unit
Operating Point	B _{OP}	25 °C	-	40	-	Gauss
Release Point	B _{RP}	25 °C	-	-40	-	Gauss
Hysteresis	B _{HYS}	25 °C	-	80	-	Gauss

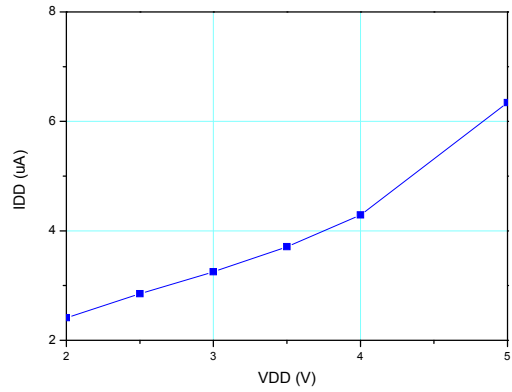
Typical Application Circuit



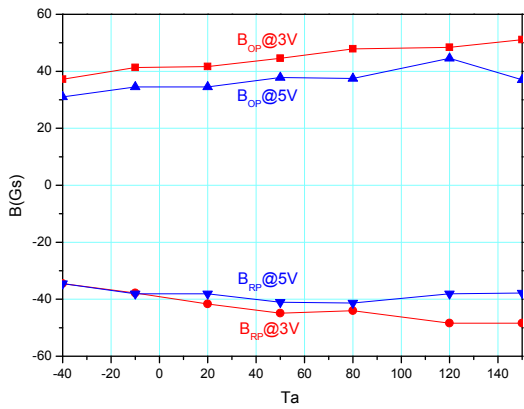
Waveform



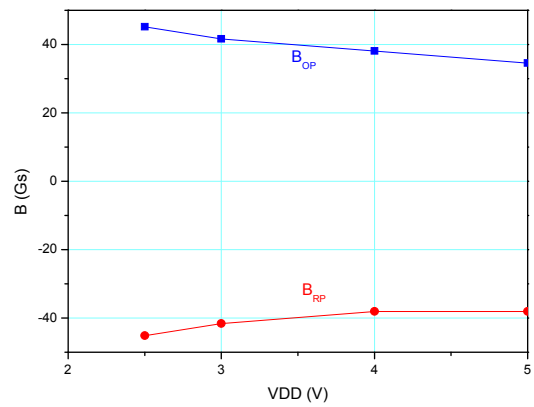
Frequency vs. VDD



Supply current vs. VDD



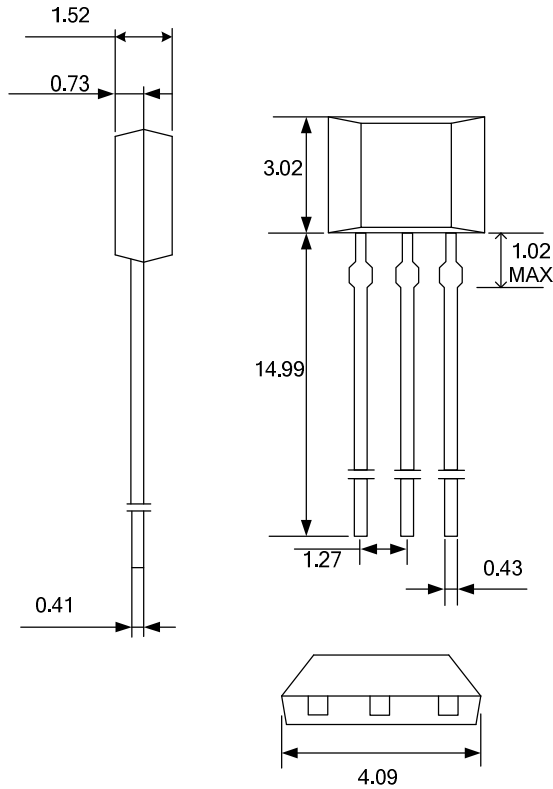
B_{OP}&B_{RP} vs. T_A



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

Package Information

(1)TO-92S Package



Notes:

All dimensions are in millimeters

Marking:

1st Line: CC6204/5 - Name of the device

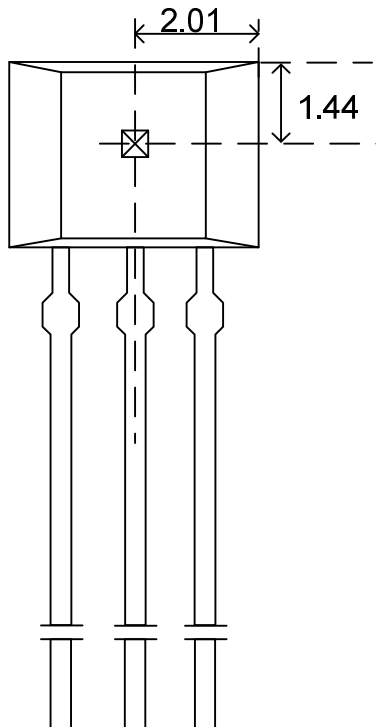
2nd Line: XXYYWW

XX – assembler code

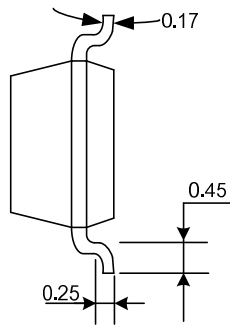
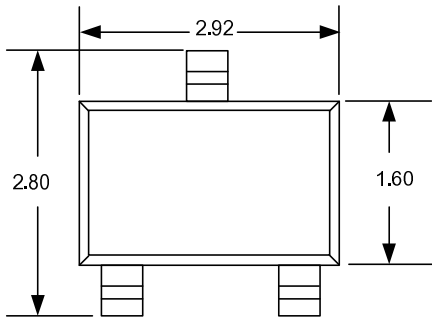
YY - assembly year (last 2 digits)

WW - assembly week number

Hall location



(2)TSOT23-3 package

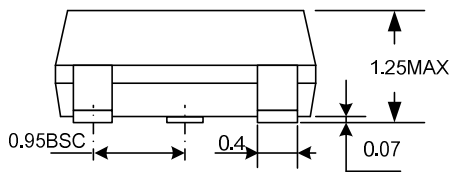


Notes:

All dimensions are in millimeters

Marking:

6204/5



Hall location

