

CC6201/3/6

MicroPower, Ultra-Sensitive Omnipolar Hall effective switches

General Description

The CC6201, CC6203, CC6206 are temperature-stable, micropower, ultra sensitive, omnipolar hall effect switches. 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. Either North or South pole of sufficient strength will turn the output on.

CC6201/CC6203/CC6206 are available in TO-92S and TSOT23-3 packages. The operating temperature is -40 to 150°C.

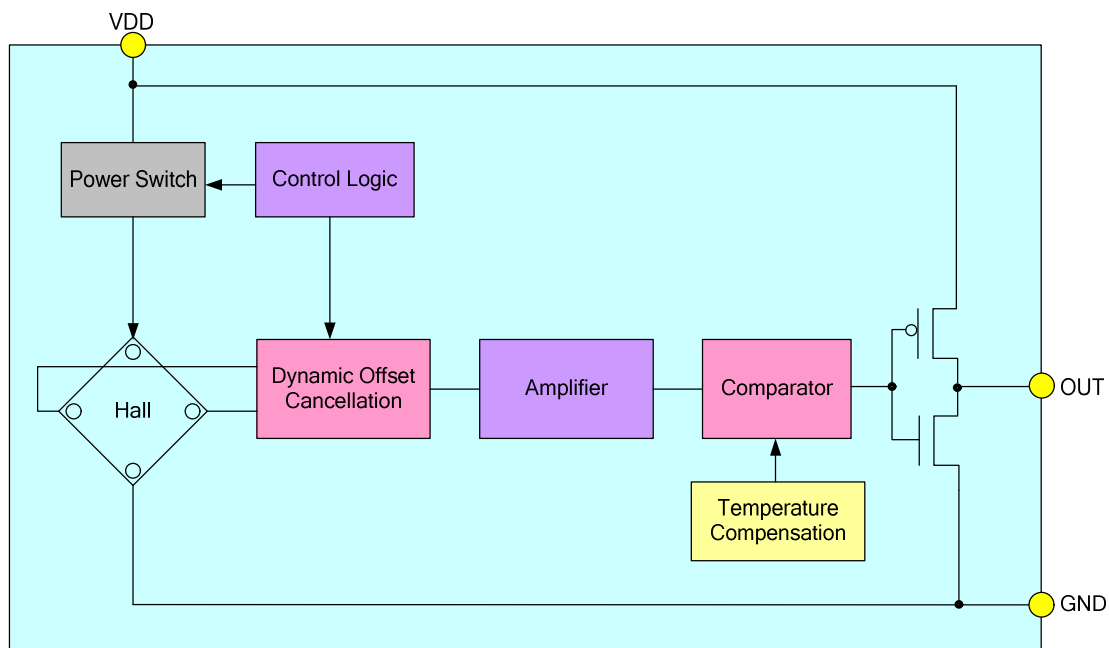
Features

- ◆ 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

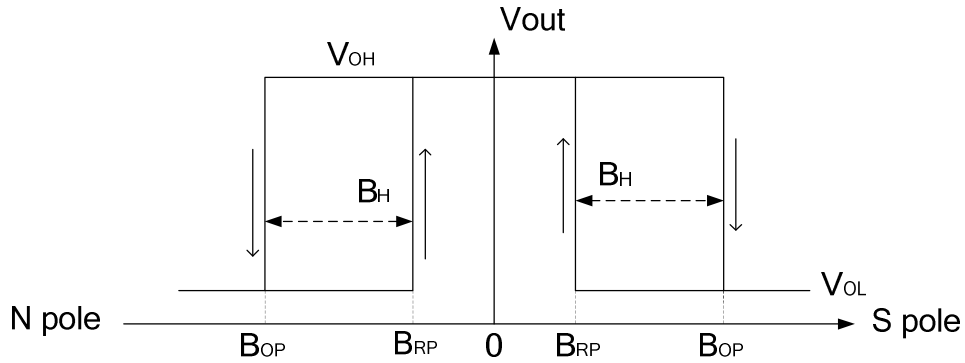
Function Block Diagram



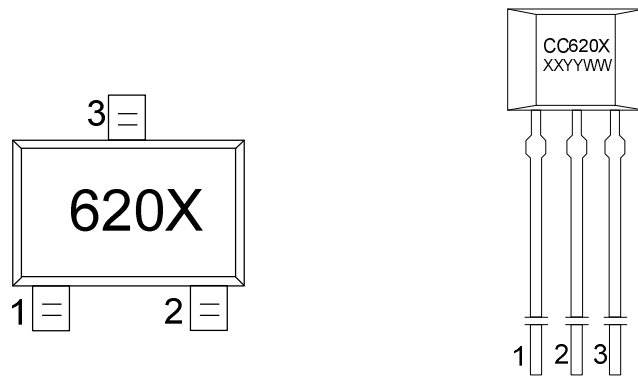
Ordering Information

Part No.	Packing Form	Package Code
CC6201/3/6TO	bulk, 1000 pcs/bulk	TO-92S
CC6201/3/6ST	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	Output

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	$^{\circ}C$
Storage Temperature	T_s	-50~160	$^{\circ}C$
ESD(HBM)		6000	V

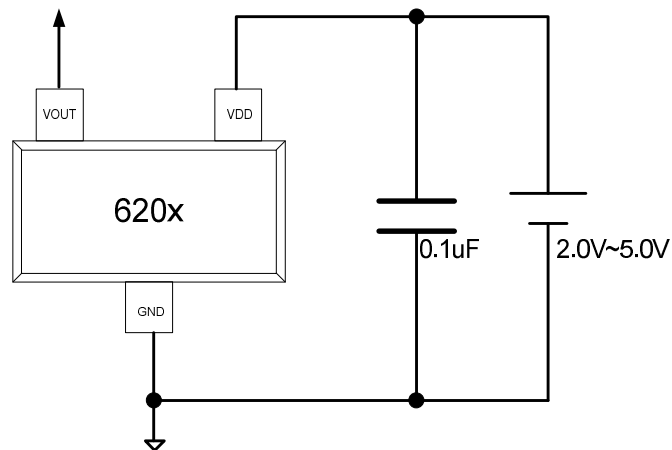
Electrical Parameters (V_{DD}=5V @ 25°C room temperature, unless specified otherwise)

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)}	CC6201	-	2	-	mA
		CC6203	-	2	-	mA
		CC6206	-	2	-	mA
	I _{DD(dis)}	CC6201	-	3	-	uA
		CC6203	-	3	-	uA
		CC6206	-	3	-	uA
Average Current	I _{DD(average)}	CC6201	-	5	-	uA
		CC6203	-	3.5	-	uA
		CC6206	-	5	-	uA
Awake Time	T _{awake}	CC6201	-	50	100	us
		CC6203	-	50	100	us
		CC6206	-	50	100	us
Period	T _{period}	CC6201	-	22	-	ms
		CC6203	-	182	-	ms
		CC6206	-	182	-	ms
Duty Cycle	D.C.	CC6201	-	0.2	-	%
		CC6203	-	0.03	-	%
		CC6206	-	0.03	-	%

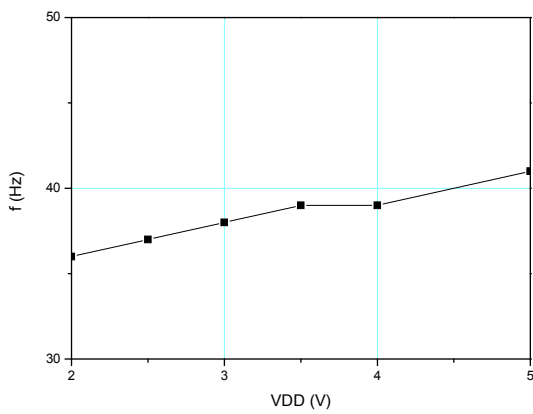
Magnetic Specifications

Parameter	Symbol	Condition	Min	Typ.	Max	Unit	
Operating Point	B _{OP}	CC6201	25 °C	-	±40	-	Gauss
		CC6203		-	±40	-	
		CC6206		-	±20	-	
Release Point	B _{RP}	CC6201	25 °C	-	±32	-	Gauss
		CC6203		-	±32	-	
		CC6206		-	±15	-	
Hysteresis	B _{HYS}	CC6201	25 °C	-	8	-	Gauss
		CC6203		-	8	-	
		CC6206		-	5	-	

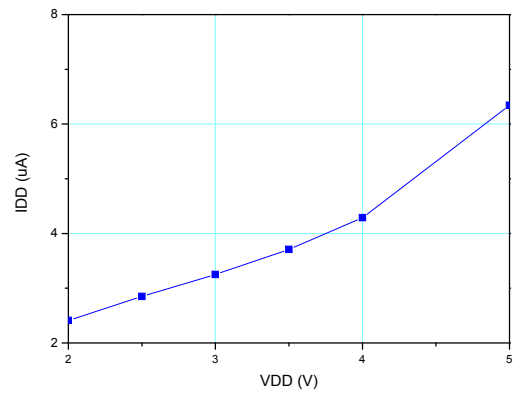
Typical Application Circuit



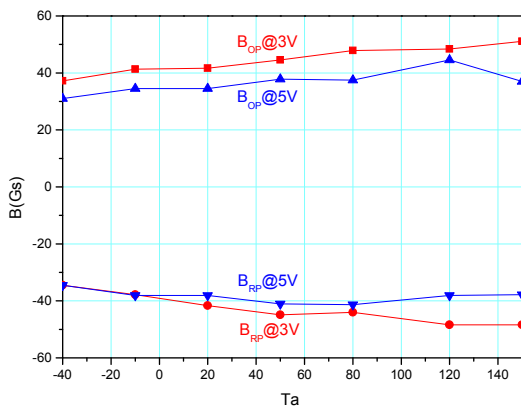
Waveform



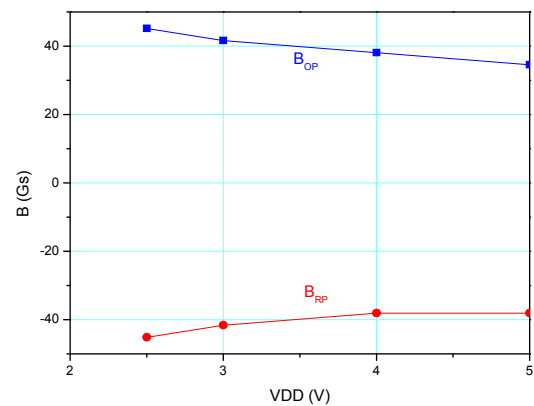
Frequency vs. VDD



Supply current vs. VDD



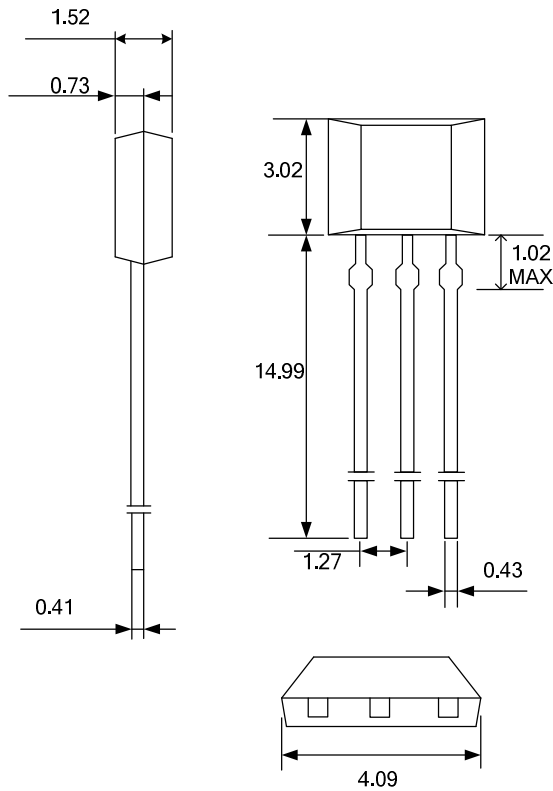
B_{OP}&B_{RP} vs. T_A



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

Package Information

(1)TO-92S Package



Notes:

All dimensions are in millimeters

Marking:

1st Line: CC6201/3/6 - Name of the device

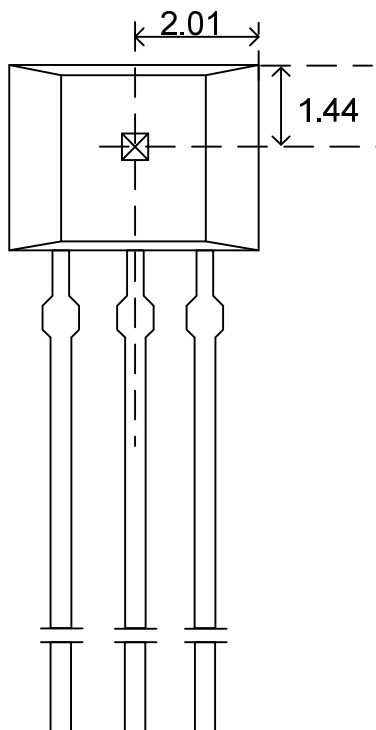
2nd Line: XXYYWW

XX – assembler code

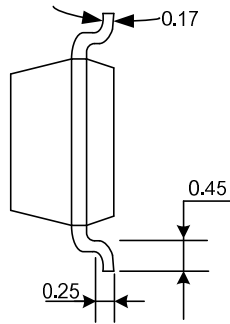
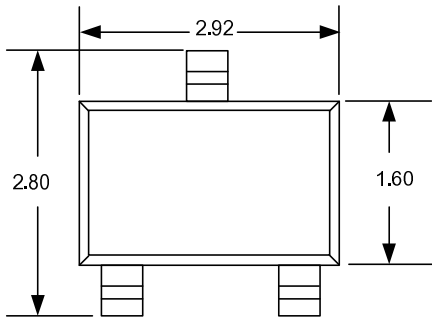
YY - assembly year (last 2 digits)

WW - assembly week number

Hall location



(2)TSOT23-3 package

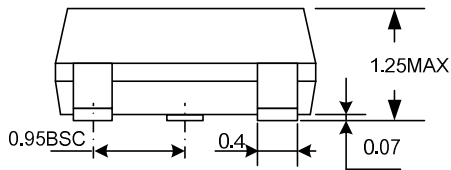


Notes:

All dimensions are in millimeters

Marking:

6201/3/6



Hall location

