

## CC6215

## Bipolar, Latch, Micro-Power Hall Effective Switch

### FEATURES

- ◆ Wide operating voltage range: 2.5~5.5V
- ◆ Micro-power
- ◆ Fast response speed, working frequency is 160Hz
- ◆ Bipolar Output
- ◆ Superior temperature stability
- ◆ Extremely low switch-point drift
- ◆ ESD ( HBM ) 4kV
- ◆ Small package size: SOT23-3

### APPLICATION

- ◆ Instrument, Meter
- ◆ PDA
- ◆ Laptop

### GENERAL DESCRIPTION

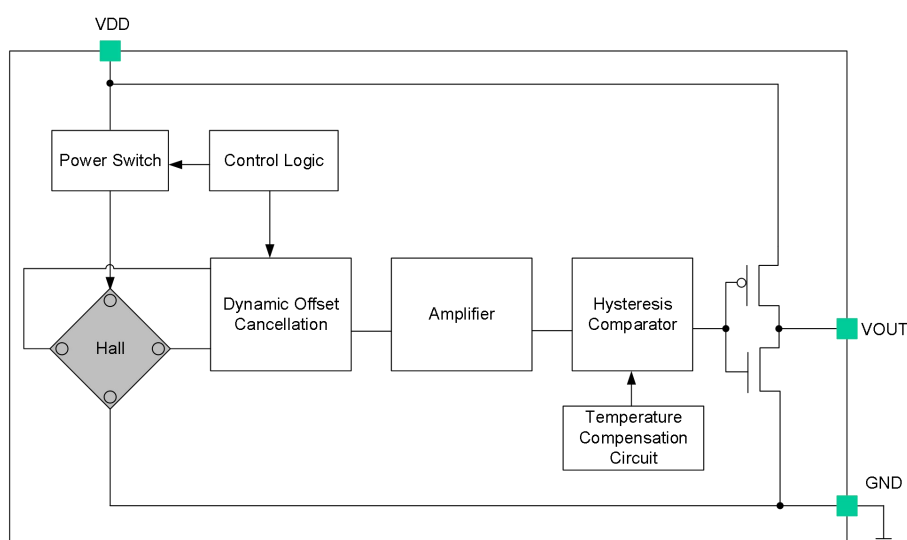
The CC6215 is a micro-power, high sensitivity bipolar, latching output Hall switch sensing device, which can directly replace the traditional magnetic reed switch. It is especially suitable for portable electronic products using battery power supply, such as mobile phones, cordless phones, notebook computer and PDA.

When the magnetic field south pole is close to the chip CC6215TO marking surface and the magnetic field strength reaches the threshold value, a low level is output; when the magnetic field north pole is close to the chip CC6215TO marking surface and the magnetic field strength reaches the threshold value, a high level is output.

CC6215 includes hall sensor, voltage stabilizing module, a small-signal amplifier, dynamic offset cancellation, latch module and CMOS output stage. The products adopt Dynamic Offset Cancellation technology, which eliminates offset voltages caused by package stresses, thermal stresses, and temperature gradients, and improves device consistency. Because CC6215 uses advanced Bi-CMOS technology, the overall circuit structure is optimized, so that the product can obtain very low input error feedback. At the same time, the product adopts its miniaturized packaging process, which makes the product have higher performance and market advantages.

CC6215 is available in SOT23-3 and TO-92S packages. The operating temperature is -40 ~ 85°C.

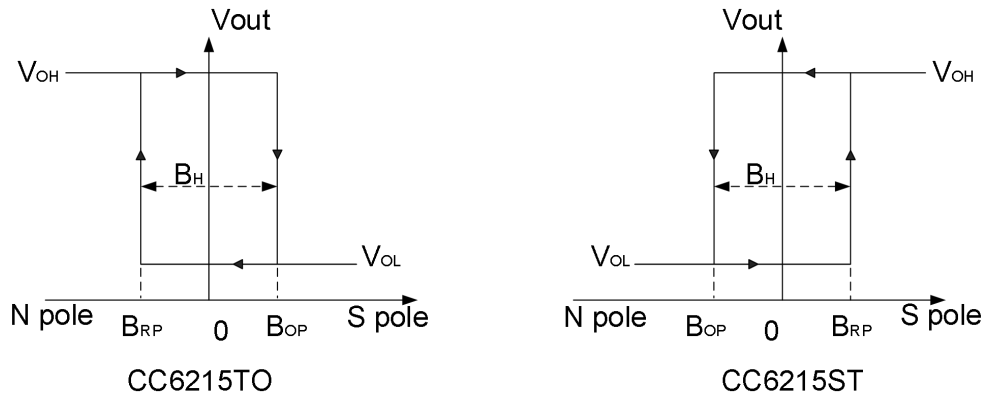
### FUNCTION BLOCK DIAGRAM



## ORDERING INFORMATION

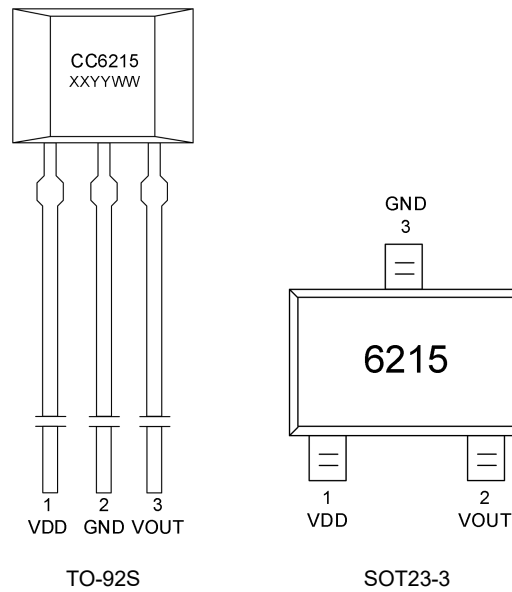
Part No.	Package	Packing Form
CC6215TO	TO-92S	bulk, 1000 pcs/bulk
CC6215ST	SOT23-3	tape reel, 3000 pcs/reel

## OUTPUT VOLTAGE VS. MAGNETIC POLE



Note: The magnetic field is applied to the screen printing surface of the chip

## PIN CONFIGURATIONS



PIN Name	PIN NO.		Function
	TO-92S	SOT23-3	
VDD	1	1	Supply Power
GND	2	3	Ground
VOUT	3	2	Output

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Supply Voltage	V <sub>DD</sub>	-0.3~5.5	V
Magnetic Flux Density	B	unlimited	Gauss
Ambient Temperature	T <sub>A</sub>	-40~85	°C
Storage Temperature	T <sub>S</sub>	-50~160	°C
ESD(HBM)		4	kV

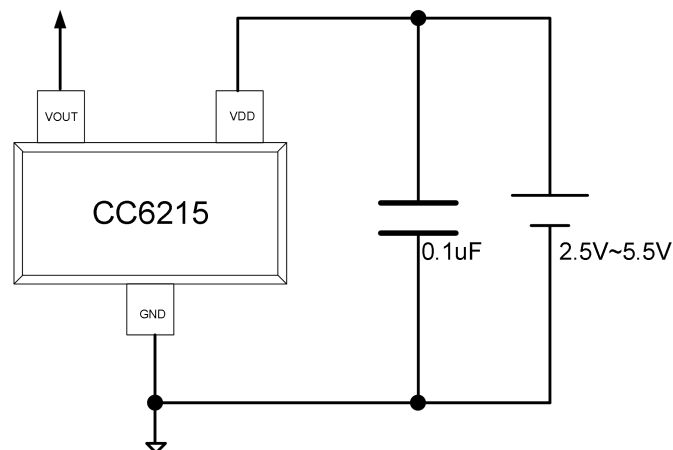
## ELECTRICAL PARAMETERS (V<sub>DD</sub> = 3.5V @ T<sub>A</sub> = 25°C, unless specified otherwise)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Power	V <sub>DD</sub>	-	2.5	-	5.5	V
Output High Voltage	V <sub>OH</sub>	I <sub>OUT</sub> =0.5mA	V <sub>DD</sub> -0.2	-	-	V
Output Low Voltage	V <sub>OL</sub>	I <sub>OUT</sub> =0.5mA	-	-	0.2	V
Enable Current	I <sub>DD(EN)</sub>		-	0.7	-	mA
Disable Current	I <sub>DD(DIS)</sub>		-	1.6	-	uA
Average Quiescent Current	I <sub>DD(AVG)</sub>		-	7.2	-	uA
Maximum Output Current	I <sub>OUT(MAX)</sub>		-	-	0.5	mA
Awake Time	T <sub>awake</sub>		-	52	-	us
Period	T <sub>period</sub>		-	6.5	-	ms
Duty Cycle	D.C.		-	0.8	-	%
Operating Frequency	f		-	160	-	Hz

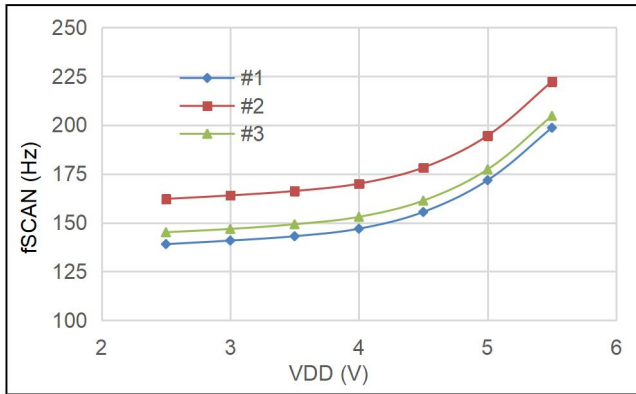
## MAGNETIC SPECIFICATIONS

Parameter	Symbol	Condition	Min	Typ.	Max	Unit
Operating Point	B <sub>OP</sub>	V <sub>DD</sub> =3.5V, 25°C	-	35	-	Gauss
Release Point	B <sub>RP</sub>	V <sub>DD</sub> =3.5V, 25°C	-	-35	-	Gauss
Hysteresis	B <sub>HYS</sub>	V <sub>DD</sub> =3.5V, 25°C	-	70	-	Gauss

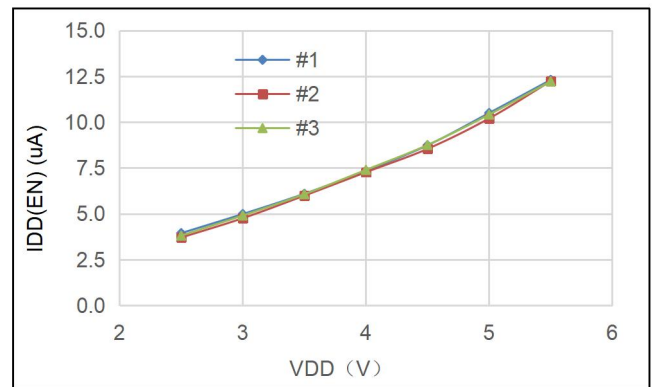
## TYPICAL APPLICATION CIRCUIT



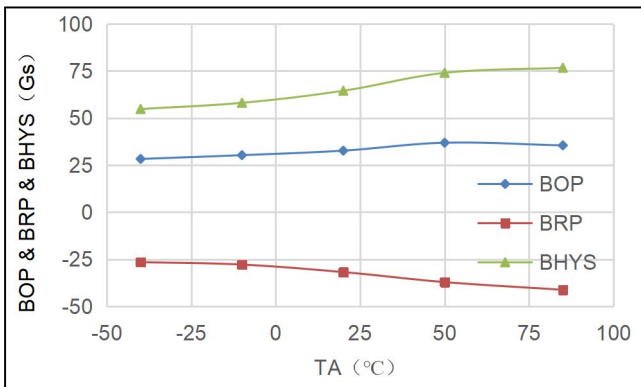
## WAVEFORM & CURVE



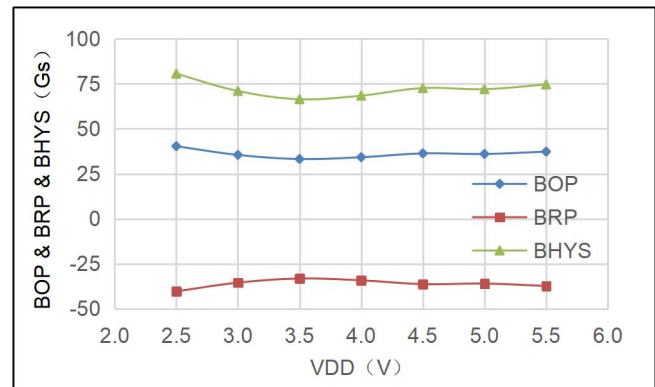
f vs. VDD



IDD vs. VDD



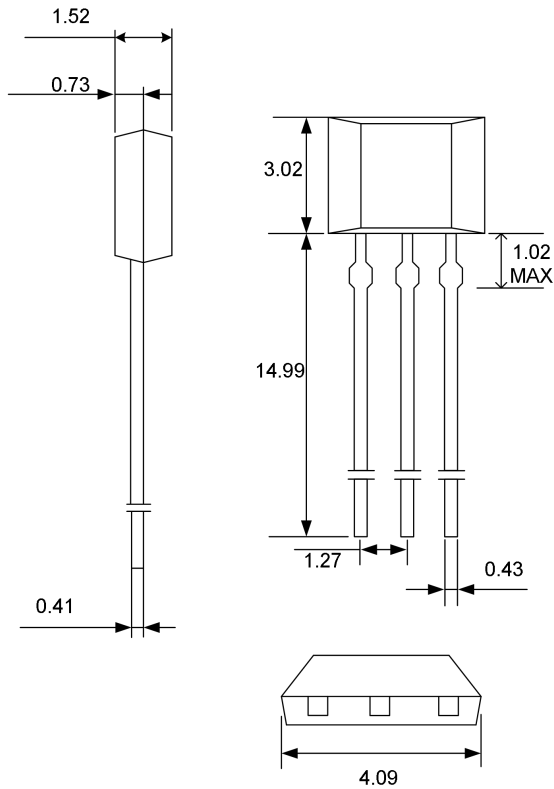
B vs. TA



B vs. VDD

## PACKAGE INFORMATION

### (1) TO-92S package



#### Notes:

All dimensions are in millimeters.

#### Marking:

1<sup>st</sup> Line: CC6215-Name of the device

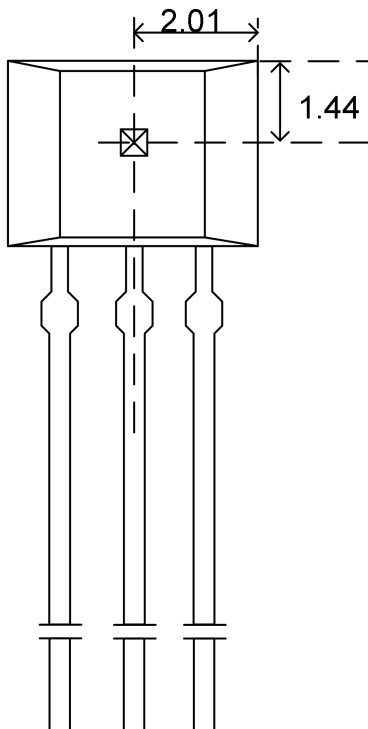
2<sup>nd</sup> Line: XYYWW

XX – code

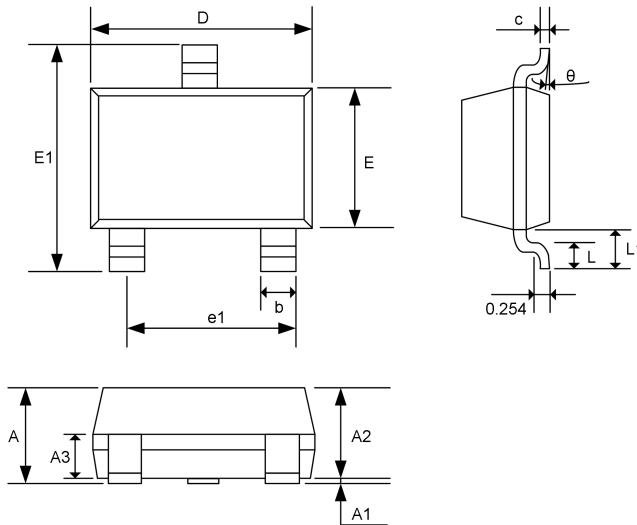
YY – last 2 digits of year

WW – week

#### Hall Location

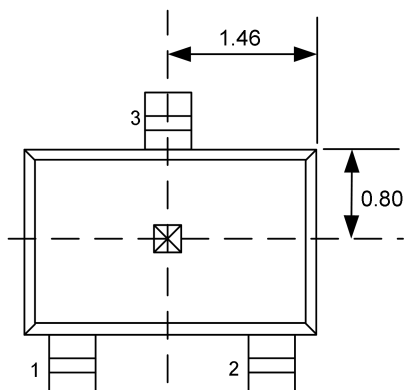


(2) SOT23-3 package



Symbol	Millimeter		
	Min.	Typ.	Max.
A	-	-	1.35
A1	0.04	0.08	0.12
A2	1.00	1.10	1.20
A3	0.55	0.65	0.75
b	0.37	0.40	0.43
c	0.11	0.16	0.21
D	2.77	2.90	3.07
E	1.40	1.60	1.80
E1	2.70	2.85	3.00
e1	1.80	1.90	2.00
L	0.35	0.45	0.55
L1	0.55	0.65	0.75
$\theta$	0°	-	8°

Hall Location



Notes:

All dimensions are in millimeters

Marking:

1<sup>st</sup> Line: 6215

## CrossChip

CrossChip Microsystems Inc. was founded in 2013, is a national high-tech enterprise, engaged in integrated circuit design and sales. The company has strong technical strength, has more than 60 kinds of patents, mainly used in Hall sensor signal processing, with the following product lines:

- ✓ High precision linear Hall sensor
- ✓ All kinds of Hall switches
- ✓ Single phase motor drive
- ✓ Single chip current sensor
- ✓ AMR Magnetoresistance sensor
- ✓ Isolation drive class chip

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