



# EM-1711

Shipped in packet-tape reel(5000pcs/Reel)

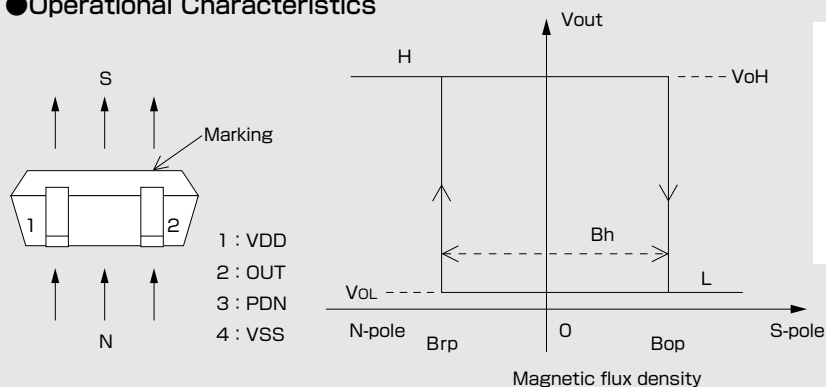
EM-1711 is ultra-small Hall effect ICs of a single silicon chip composed of Hall element and a signal processing IC.

Bipolar Hall  
Effect LatchSupply Voltage  
1.6~5.5VPower down  
FunctionUltra High  
Sensitivity  
Bop:1.8mTOutput  
CMOS

SMT

Notice:It is requested to read and accept "IMPORTANT NOTICE" written on the back of the front cover of this catalogue.

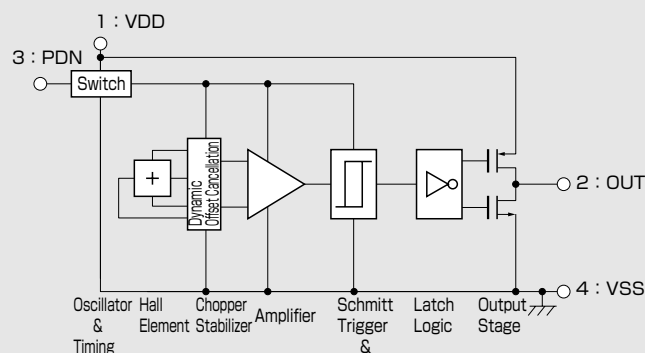
## ●Operational Characteristics



## ●Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Limit	Unit
Supply Voltage	VDD	-0.1 ~ 6.0	V
PDN input voltage	$V_{in}$	-0.1 ~ VDD+0.1	V
PDN input current	$I_{in}$	±10	mA
Output Current	$I_{out}$	±0.5	mA
Operating Temperature Range	Topr	-30 ~ +85	°C
Storage Temperature Range	Tstg	-40 ~ +125	°C

## ●Functional Block Diagram



## ●Magnetic ① and Electrical Characteristics (Ta=25°C VDD=3.0V)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	VDD		1.6		5.5	V
Operating Point	$B_{OP}$			1.8	4.0	mT
Release Point	$B_{rp}$		-4.0	-1.8		mT
Hysteresis	$B_h$			3.6		mT
PDN input High voltage	$V_{IH}$		0.7VDD			V
PDN input Low voltage	$V_{IL}$				0.3	V
Output High Voltage	$V_{OH}$	$I_o = -0.5mA$	VDD - 0.4			V
Output Low Voltage	$V_{OL}$	$I_o = +0.5mA$			0.4	V
Supply Current1*2	IDD1	PDN=L			1	μA
Supply Current2*2	IDD2	PDN=H,Average		2.5	6	mA
PDN input Current	$I_{in}$		-1		1	μA
PDN mode transition time1	TPD1	Active→PDN			100	μsec
PDN mode transition time2	TPD2	PDN→Active			100	μsec

1 [mT]=10 [Gauss]

\*1: Positive ("+" ) polarity flux is defined as the magnetic flux from south pole which is direct toward to the branded face of the sensor (Bop,Brp)

\*2: In case of PDN pin is held at VDD or VSS.

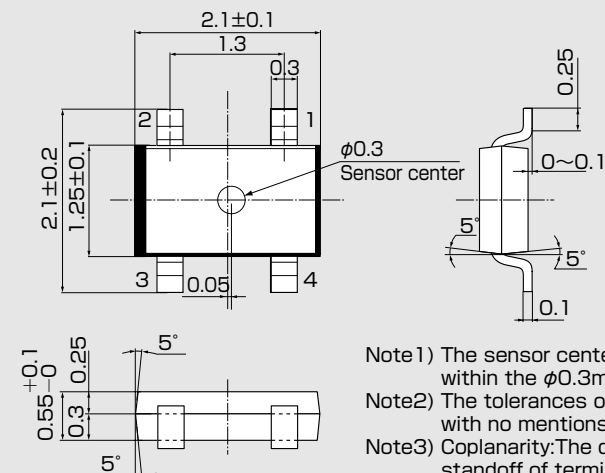
## ●Magnetic Characteristics ② (Ta=-30~+85°C VDD=3.0V)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Point	$B_{OP}$			1.8	4.2	mT
Release Point	$B_{rp}$		-4.2	-1.5		mT
Hysteresis	$B_h$			3.6		mT

Note) The above specifications are design targets.

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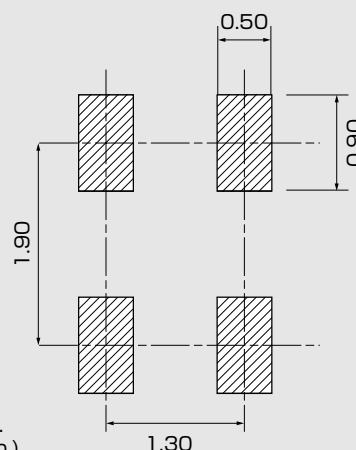
### ●Package (Unit:mm)



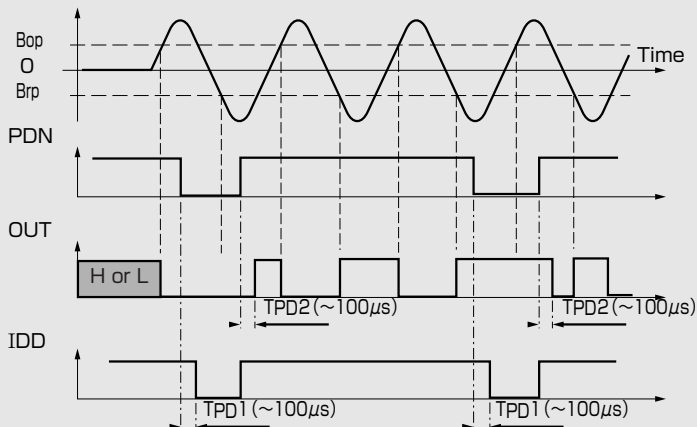
Pin No.	Pin Name	Function
1	VDD	Supply Voltage
2	OUT	Output Voltage
3	PDN	Power Down
4	VSS	GND

- Note1) The sensor center is located within the  $\phi 0.3$ mm circle.  
 Note2) The tolerances of dimensions with no mentions is  $\pm 0.1$ mm.  
 Note3) Coplanarity: The differences between standoff of terminals are max.0.1mm.  
 Note4) The sensor part is located 0.4mm(typ.) far from marking surface.

### ●(For reference only)Land Pattern (Unit:mm)

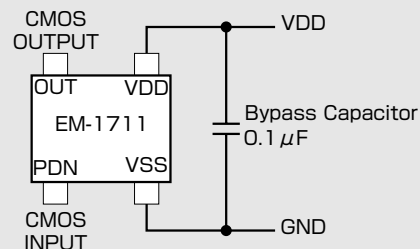


### ●Function Timing Chart

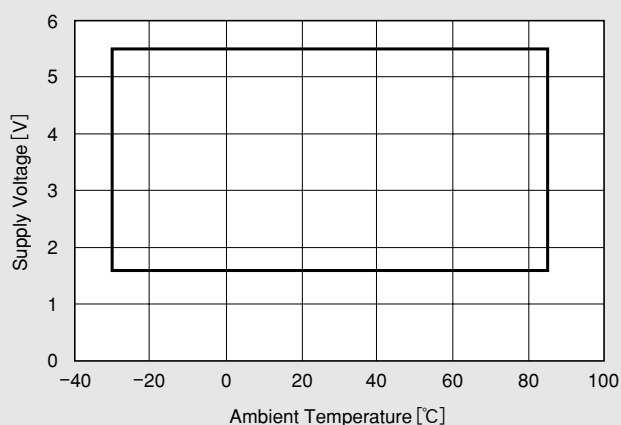


- Note1) In power down mode, Output is kept current status.  
 Note2) When VDD is supplied, output settling time after power supply voltage exceeds 1.6V is equal to TPD2.

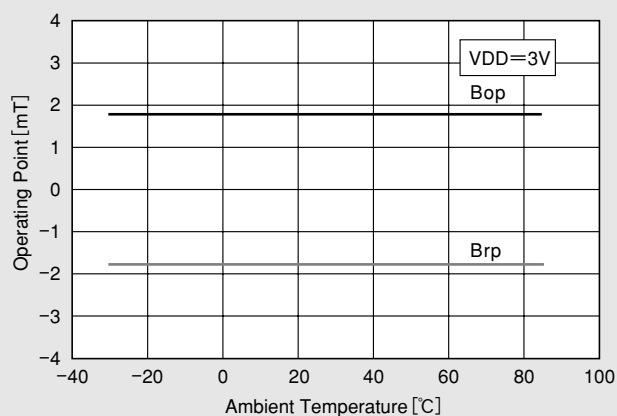
### ●Application Circuit



### ●Supply Voltage



### ●Temperature Dependence of Bop, Brp



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April 4, 2012