EM-1712

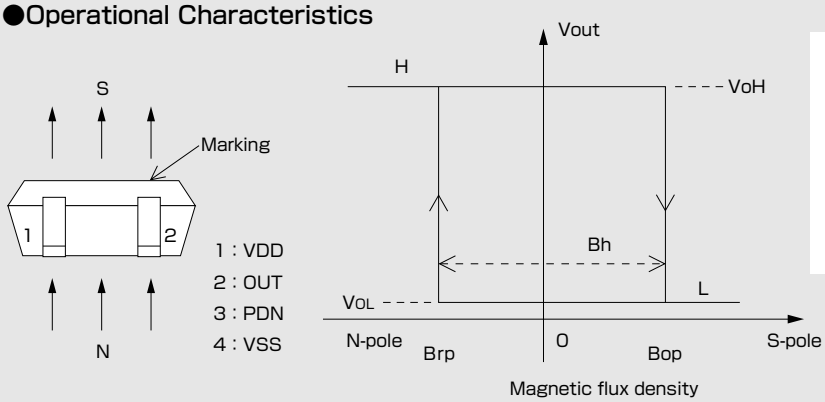
Shipped in packet-tape reel(5000pcs/Reel)

EM-1712 is ultra-small Hall effect ICs of a single silicon chip composed of Hall element and a signal processing IC.

Bipolar Hall Effect Latch	Supply Voltage 1.6~5.5V	Power down Function	Ultra High Sensitivity Bop:1.8mT	Output CMOS	SMT

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

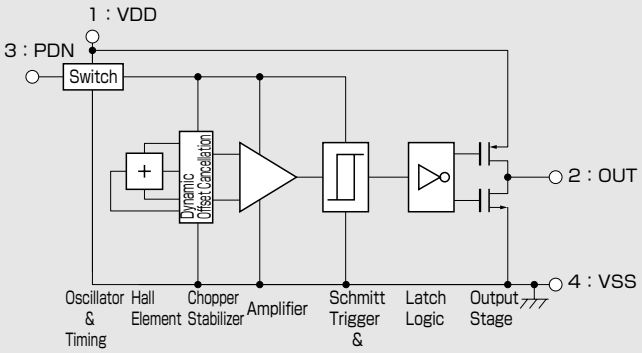
●Operational Characteristics



●Absolute Maximum Ratings (Ta=25℃)

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	℃
Storage Temperature Range	Tstg	−40 ~ +125	℃

●Functional Block Diagram



●Magnetic ① and Electrical Characteristics (Ta=25℃ 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}	Io=−0.5mA	VDD −0.4			V
Output Low Voltage	V_{OL}	Io=+0.5mA			0.4	V
Supply Current1*2	IDD1	PDN=L			1	μA
Supply Current2*2	IDD2	PDN=H,Average		60	150	μA
PDN input Current	I_{in}		−1		1	μA
PDN mode transition time1	$T_{PD}1$	Active→PDN			(36.6)	μsec
PDN mode transition time2	$T_{PD}2$	PDN→Active			100	μsec

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Pulse Drive Period	T_{PD3}	PDN=H	0.5	1.0	1.5	msec
PDN input Pluse Width	T_W		100			μsec
Pulse Drive Time	T_{PD4}	PDN=H	12.2	24.4	36.6	μsec

●Magnetic Characteristics ② (Ta=−30~+85℃ VDD=3.0V)

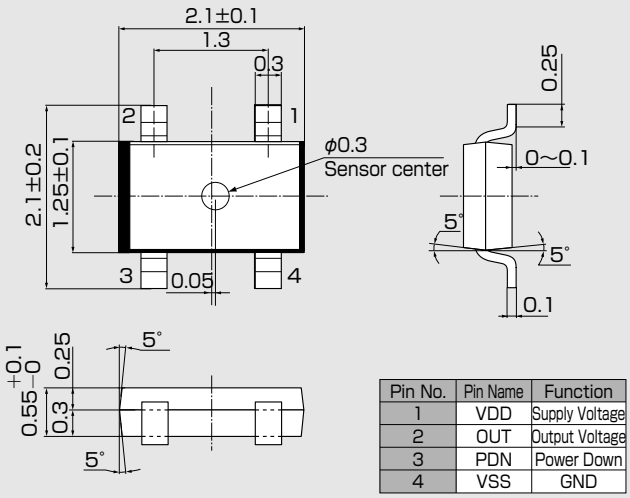
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Point	B_{OP}			1.8	4.2	mT
Release Point	B_{rp}		−4.2	−1.5		mT
Hysteresis	B_h			3.6		mT

Note) The above specifications are design targets.

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.
*3: This transition time is not guarantee

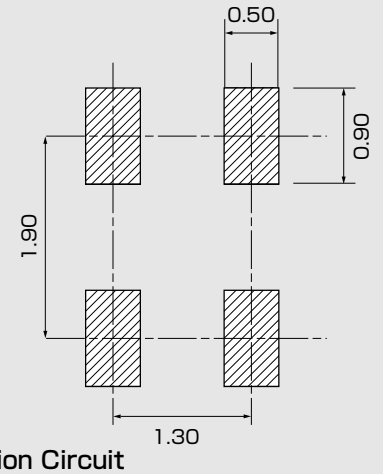
●Package (Unit:mm)



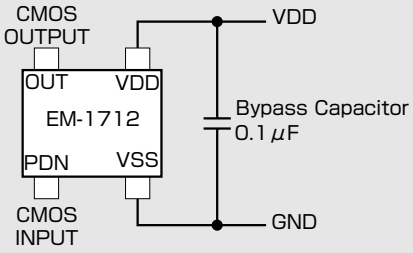
Pin No.	Pin Name	Function
1	VDD	Supply Voltage
2	OUT	Output Voltage
3	PDN	Power Down
4	VSS	GND

Note1) The sensor center is located within the φ0.3mm circle.
Note2) The tolerances of dimensions with no mentions is ±0.1mm.
Note3) Coplanarity:The differnces between standoff of terminals are max.0.1mm.
Note4) The sensor part is located 0.4mm(typ.) far from marking surface.

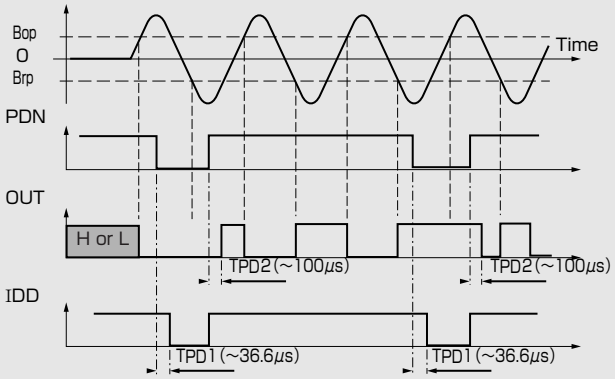
●(For reference only)Land Pattern (Unit:mm)



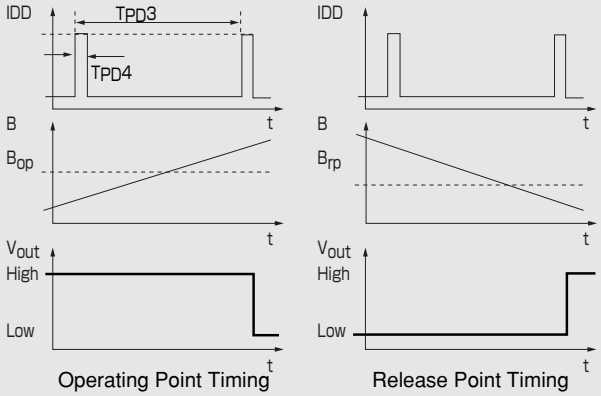
●Application Circuit



●Function Timing Chart 1

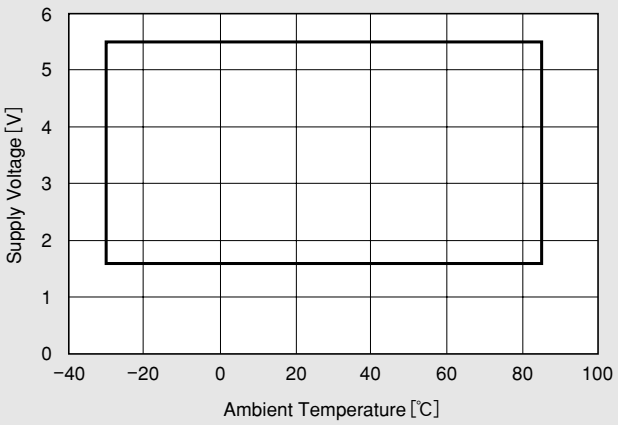


●Function Timing Chart 2 (PDN=H)

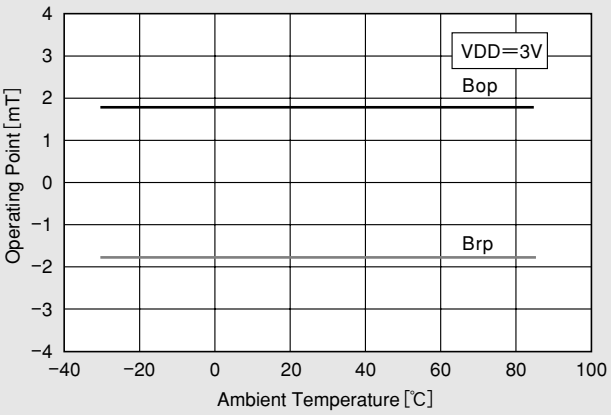


Note1) In power down mode, Output is kept current status.
Note2) When VDD is supplied ,output settling time after power supply voltage exceeds 1.6V is equal to TPD2.

●Supply Voltage



●Temparature Dependence of Bop. Brp



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April 4, 2012