



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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EM-1712

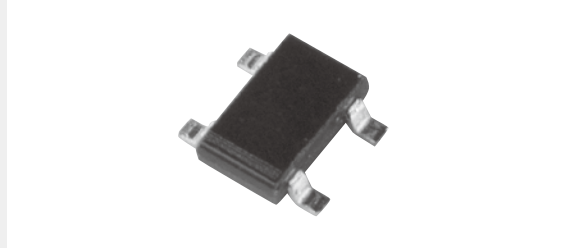
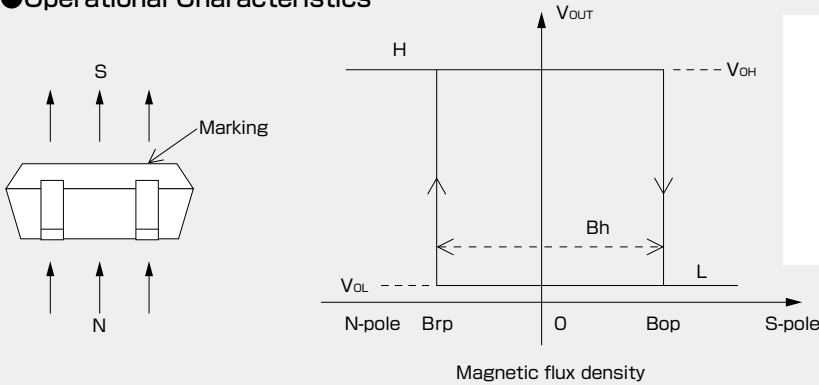
Shipped in packet-tape reel(5000pcs/Reel)

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
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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	Min.	Max.	Unit
Supply Voltage	V _{DD}	-0.1	6.0	V
PDN input voltage	V _{IN}	-0.1	V _{DD} +0.1	V
PDN input current	I _{IN}	-10	+10	mA
Output Current	I _{OUT}	-0.5	+0.5	mA
Storage Temperature Range	T _{STG}	-40	+125	°C

Recommended Operating Conditions

Item	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V _{DD}	1.6	3.0	5.5	V
Operating Temperature Range	T _{opr}	-30	+25	+85	°C

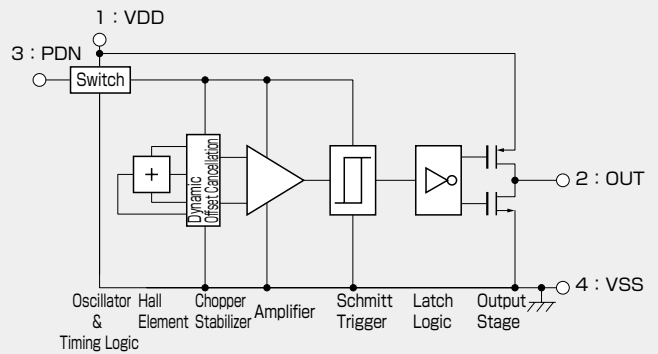
Magnetic ① and Electrical Characteristics (Ta=25°C V_{DD}=3.0V)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Point *1	B _{op}			1.8	4.0	mT
Releasing Point *1	B _{rp}		-4.0	-1.8		mT
Hysteresis	B _h			3.6		mT
PDN input High voltage	V _{IH}		0.7V _{DD}			V
PDN input Low voltage	V _{IL}				0.3	V
Output High Voltage	V _{OH}	I _o =-0.5mA	V _{DD} -0.4			V
Output Low Voltage	V _{OL}	I _o =+0.5mA			0.4	V
Supply Current1*2	I _{DD1}	PDN=L		1		μA
Supply Current2*2	I _{DD2}	PDN=H,Average		60	150	μA
PDN input Current	I _{IN}		-1	1		μA
PDN mode transition time1*3	T _{PD1}	Active→PDN			(36.6)	μs
PDN mode transition time2	T _{PD2}	PDN→Active			100	μs

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 GND.
 *3: This transition time is not guarantee

Functional Block Diagram



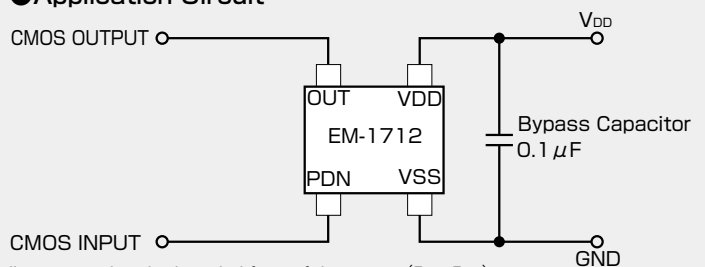
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Pulse Drive Period	T _{PD3}	PDN=H	0.5	1.0	1.5	ms
PDN input Pulse Width	T _w		100			μs
Pulse Drive Time	T _{PD4}	PDN=H	12.2	24.4	36.6	μs

Magnetic Characteristics ② (Ta=-30~+85°C V_{DD}=3.0V)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Point	B _{op}			1.8	4.2	mT
Releasing Point	B _{rp}		-4.2	-1.8		mT
Hysteresis	B _h			3.6		mT

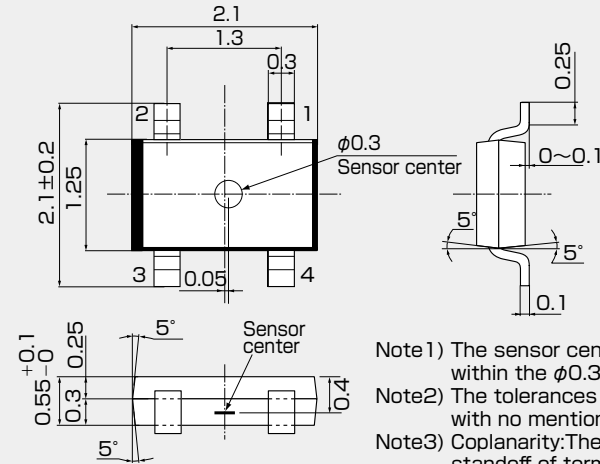
Note) The above specifications are design targets.

Application Circuit



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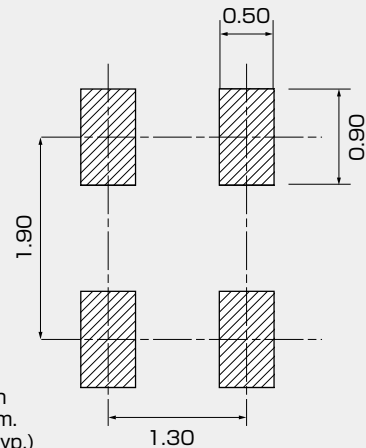
●Package (Unit:mm)



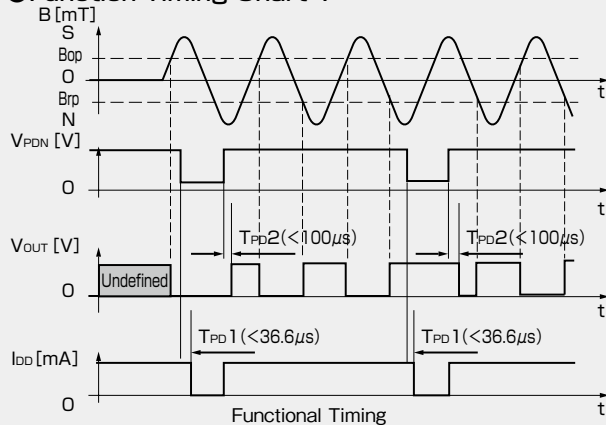
Pin No.	Pin Name	Function
1	VDD	Power Supply
2	OUT	Output
3	PDN	Power Down
4	VSS	Ground

- Note1) The sensor center is located within the $\phi 0.3$ mm circle.
- Note2) The tolerances of dimensions with no mentions is ± 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)

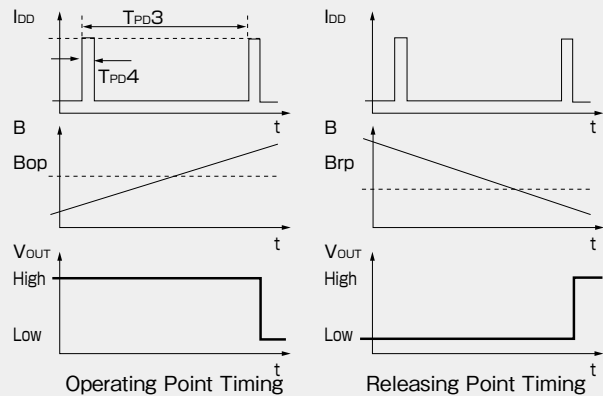


●Function Timing Chart 1

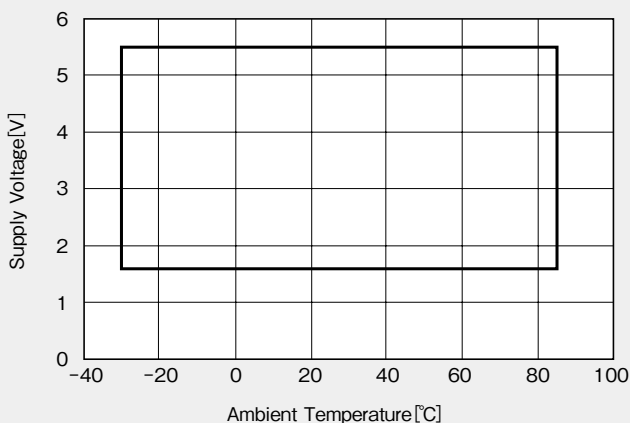


- Note1) During power down mode, output is latched in its previous state.
- Note2) When VDD is supplied, the time from reaching $V_{DD}=1.6V$ to the update of the output state is equal to T_{PD2} .

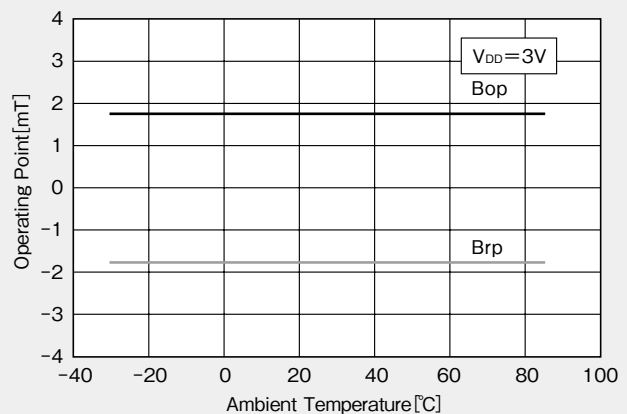
●Function Timing Chart 2 (PDN=H)



●Supply Voltage



●Temperature Dependence of Bop, Brp



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April 1, 2015