EM-1791

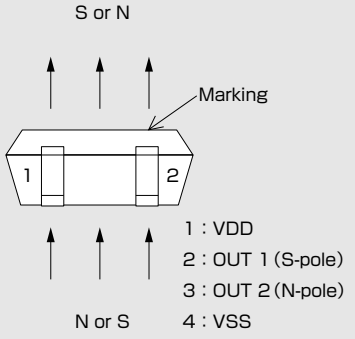
Shipped in packet-tape reel(5000pcs/Reel)

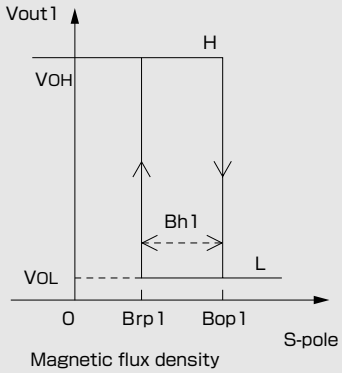
EM-1791 is ultra-small Hall effect ICs of a single silicon chip composed of Hall element and a signal processing IC.

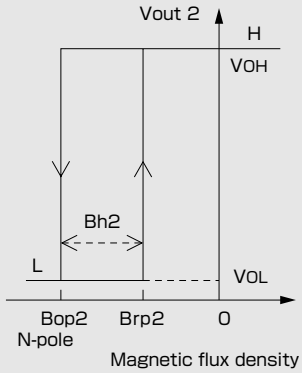
Unipolar Hall Effect Switch Two output for S and N-pole	Supply Voltage 1.6~5.5V	Hall Element Pulse Excitation	High Sensitivity Bop:2.5mT	Output CMOS Two output for S and N-pole	SMT

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

●Operational Characteristics



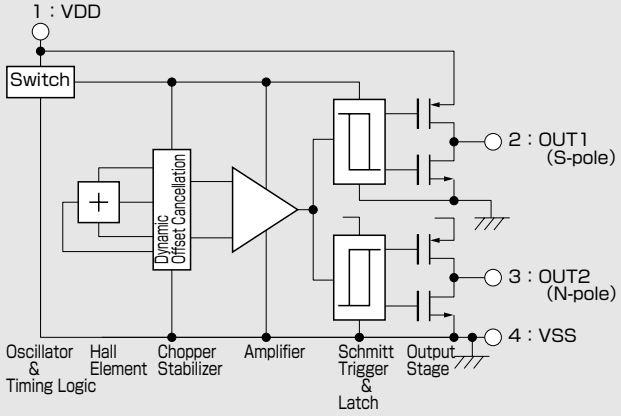




●Absolute Maximum Ratings (Ta=25℃)

Item	Symbol	Limit	Unit
Supply Voltage	VDD	−0.1 ~ 6.0	V
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=1.85V)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	VDD		1.6		5.5	V
Operating Point	$B_{OP}1$		*1.4	2.5	3.2	mT
	$B_{OP}2$		−3.2	−2.5	*−1.4	
Release Point	$B_{rp}1$		1.2	2.0	*3.0	mT
	$B_{rp}2$		*−3.0	−2.0	−1.2	
Hysteresis	B_h1,B_h2			0.5		mT
Period	T_p			50	100	ms
Output High Voltage	VOH	Io=−0.2mA	VDD−0.4			V
Output Low Voltage	VOL	Io=+0.2mA			0.4	V
Supply Current	IDD	Average		6.5	9	μA

1 [mT] =10 [Gauss]

※ The characteristics with 「*」 marks are design targets.

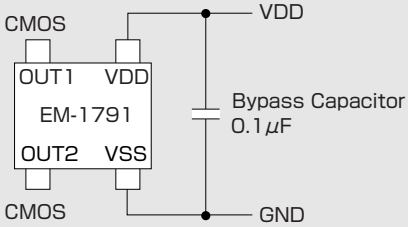
※ OUT1 responds to the positive flux from the south pole(Bop1,Brp1) ,OUT2 to the negative flux from the north pole(Bop2,Brp2) .

●Magnetic Characteristics ② (Ta=−30~+85℃ VDD=1.85V)

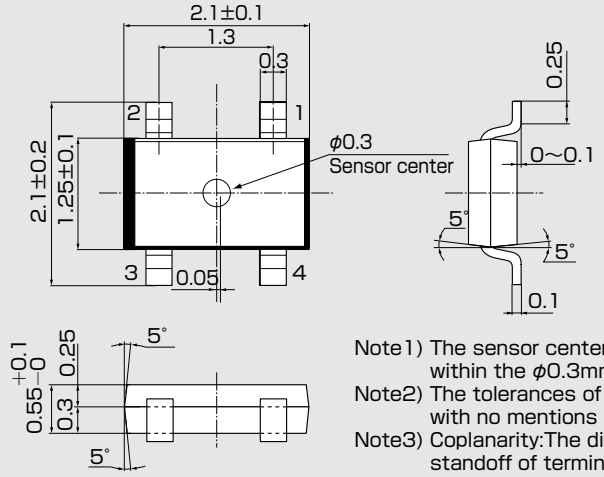
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Point	$B_{OP}S$ |$B_{OP}N$|		1.3	2.5	3.5	mT
Release Point	$B_{rp}S$ |$B_{rp}N$|		1.1	2.0	3.3	mT
Hysteresis	B_hS |B_hN|			0.5		mT

Note) The above specifications are design targets.

●Application Circuit



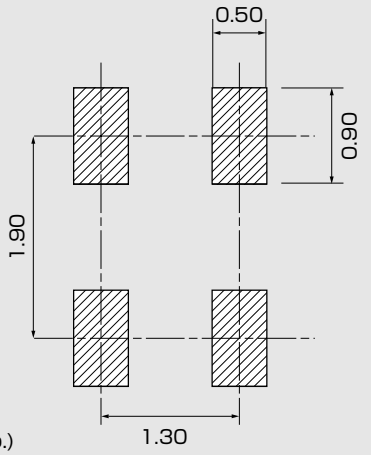
●Package (Unit:mm)



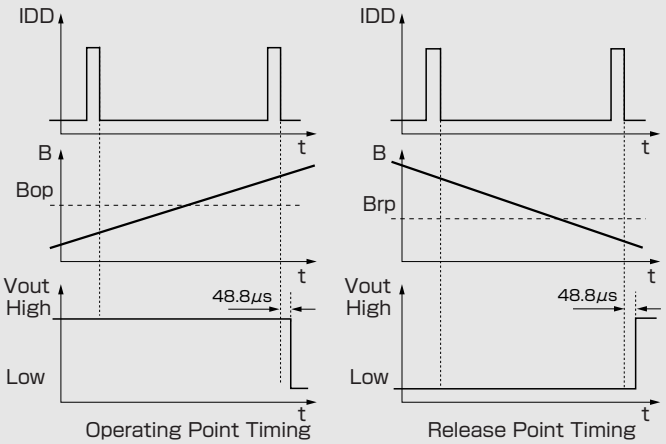
Note1) The sensor center is located within the φ0.3mm circle.
Note2) The tolerances of dimensions with no mentions is ±0.1mm.
Note3) Coplanarity:The differnces between standoff of terminals are max.0.1mm.
Note4) The sensor part is located 0.4mm(typ.) far from marking surface.

Pin No.	Pin Name	Function	Comment
1	VDD	Supply Voltage	
2	OUT1	Output Voltage	S-pole
3	OUT2	Output Voltage	N-pole
4	VSS	GND	

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

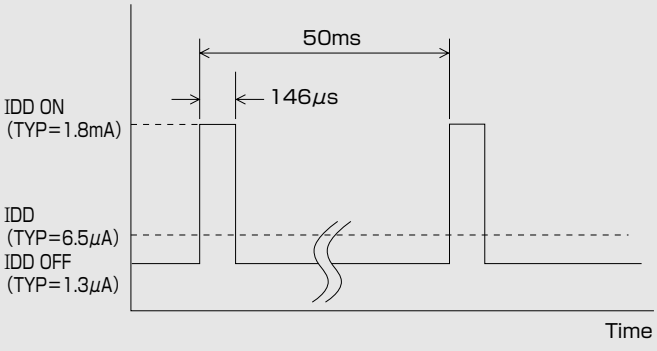


●Function Timing Chart

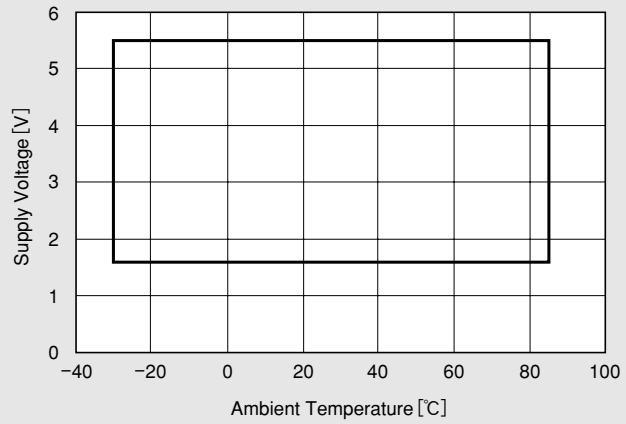


This Hall IC's output is held as internal data just before the internal circuit turns OFF (IDD OFF). And after 48.8 μs, the output changes.
Note) 48.8 μs in figures is typical value

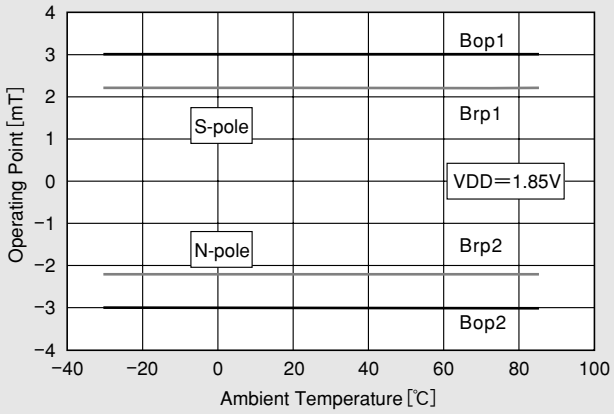
●IDD Pulse Driving (VDD=1.85V)



●Supply Voltage



●Temparature Dependence of Bop. Brp



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April 4, 2012