EM-0791

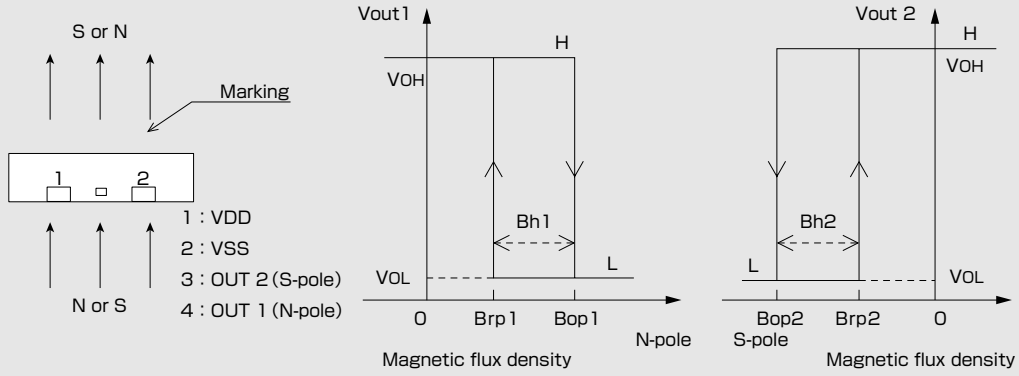
Shipped in packet-tape reel(5000pcs/Reel)

EM-0791 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	SON

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

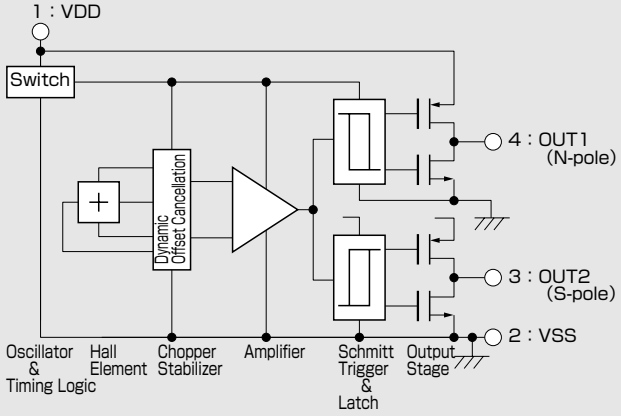
●Operational Characteristics



●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.

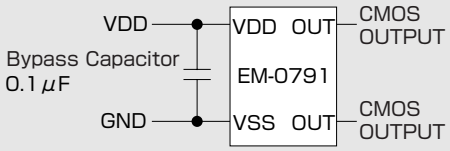
※ OUT1 responds to the positive flux from the north pole(Bop1,Brp1) ,OUT2 to the negative flux from the south pole(Bop2,Brp2) .

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

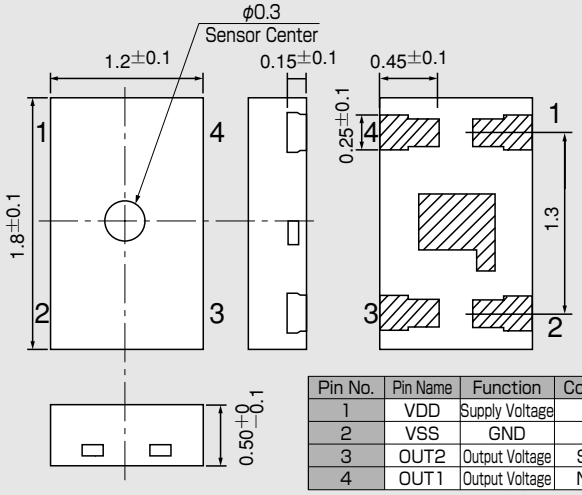
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Point	$B_{OP}S$ $\lvert B_{OP}N\rvert$		1.3	2.5	3.5	mT
Release Point	$B_{rp}S$ $\lvert B_{rp}N\rvert$		1.1	2.0	3.3	mT
Hysteresis	B_hS $\lvert B_hN\rvert$			0.5		mT

Note) The above specifications are design targets.

●Application Circuit



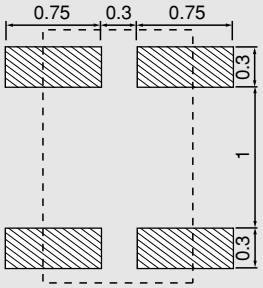
●Package (Unit:mm)



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

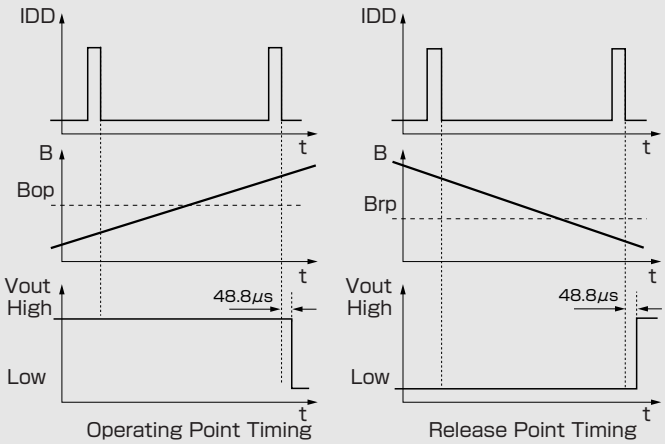
※Note1) The sensor center is located within the φ0.3mm circle.
Note2) The tolerances of dimensions with no mentions is ±0.1mm.
Note3) Coplanarity:The differnces between standoff of terminals are max.50μm.
Note4) Shaded area is plating area

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



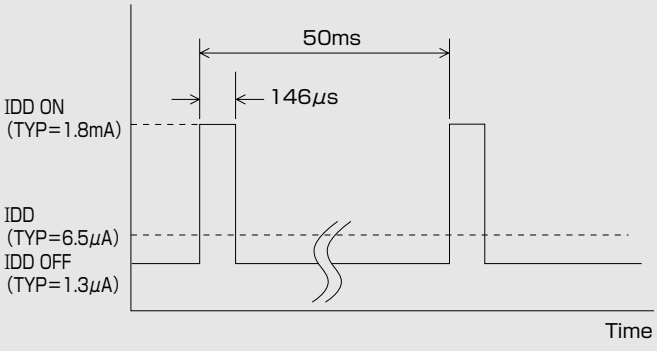
Note5) The center shadow area of the bottom of HIC does not need to be soldered.
This area shares the lead frame with VSS inside the package and please be careful not to short this area to pins except No.2.

●Function Timing Chart

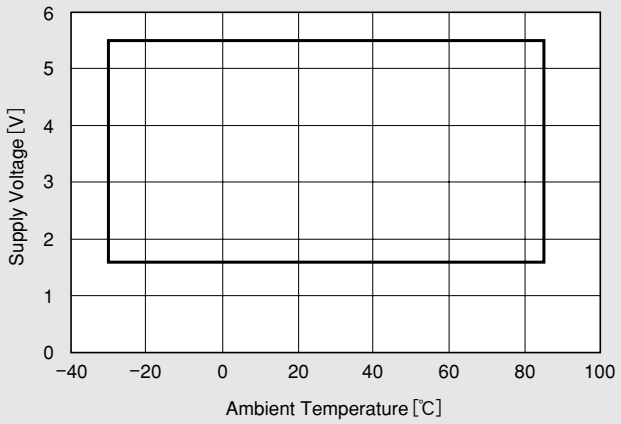


This Hall IC's output is held as internal data just before the internal circuit turns OFF (IDD OFF). And after 48.8 μs, the output changes.
Note) 48.8 μs in figures is typical value

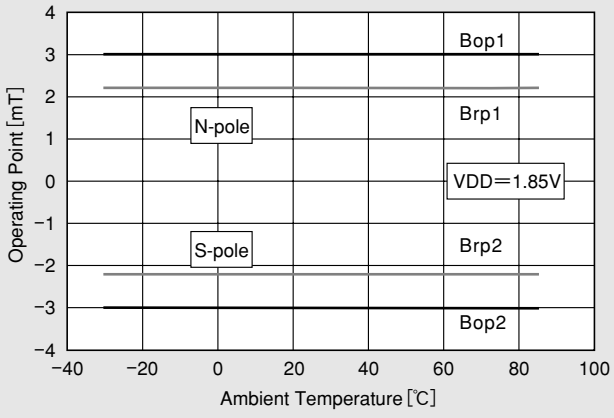
●IDD Pulse Driving (VDD=1.85V)



●Supply Voltage



●Temparature Dependence of Bop. Brp



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June 2, 2010