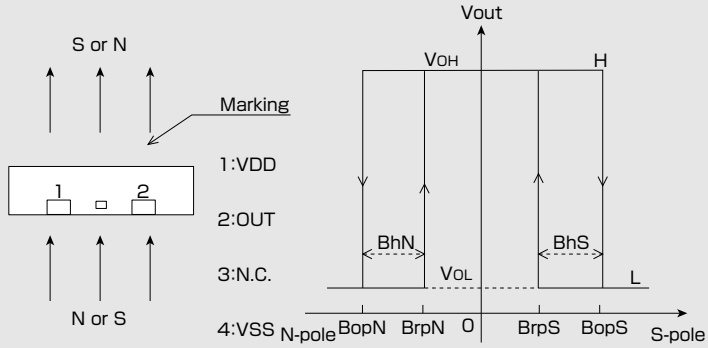
EM-0781

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

EM-0781 is ultra-small Hall effect ICs of a single silicon chip composed of Hall element and a signal processing IC.

Omnipolar Hall Effect Switch	Supply Voltage 1.6~5.5V	Hall Element Pulse Excitation	High Sensitivity Bop:3mT	Output CMOS	SON

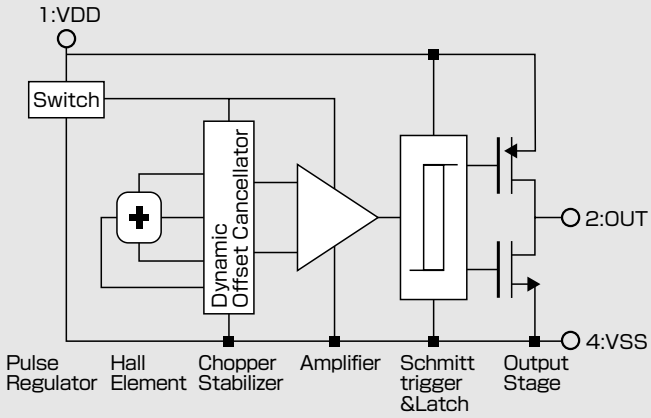
●Operational Characteristics



●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	$B_{OP}S$ $\lvert B_{OP}N\rvert$		1.4*	3.0	4.0	mT
Release Point	$B_{rp}S$ $\lvert B_{rp}N\rvert$		1.1	2.2	3.7*	mT
Hysteresis	B_{hS} $\lvert B_{hN}\rvert$		0.3*	0.8	1.5*	mT
Period	T_p			50	100	ms
Output High Voltage	VOH	Io=−0.5mA	VDD −0.4			V
Output Low Voltage	VOL	Io=+0.5mA			0.4	V
Supply Current	IDD	Average		6.5	9	μA

1 [mT] =10 [Gauss]

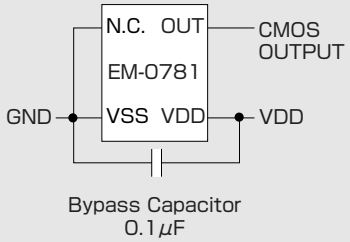
The characteristics with 「*」 marks are design targets.

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

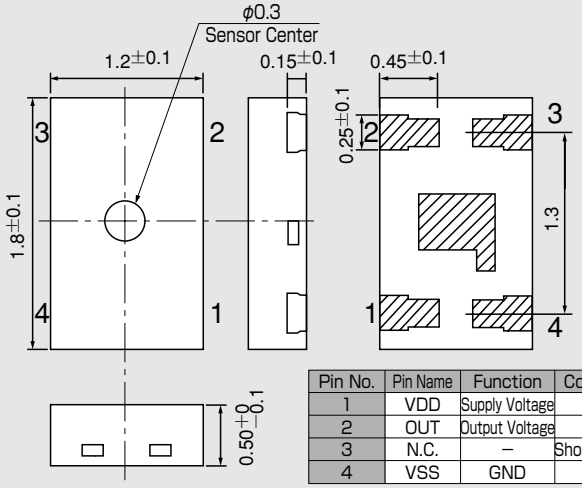
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Point	$B_{OP}S$ $\lvert B_{OP}N\rvert$		1.2	3.0	4.4	mT
Release Point	$B_{rp}S$ $\lvert B_{rp}N\rvert$		0.9	2.2	4.1	mT
Hysteresis	B_{hS} $\lvert B_{hN}\rvert$		0.1	0.8	1.7	mT

Note) The above specifications are design targets.

●Application Circuit



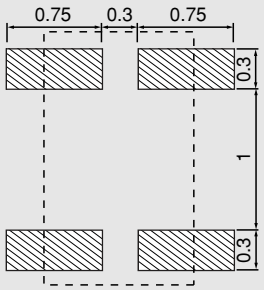
●Package (Unit:mm)



Pin No.	Pin Name	Function	Comment
1	VDD	Supply Voltage	
2	OUT	Output Voltage	
3	N.C.	–	Short to GND
4	VSS	GND	

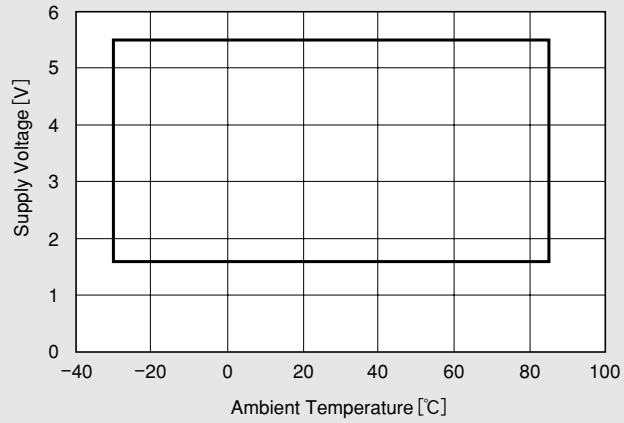
※Note1) The sensor center is located within the φ0.3mm circle.
Note2) The tolerances of dimensions with no mentions is ±0.1mm.
Note3) Coplanarity:The differnces between standoff of terminals are max.50μm.
Note4) Shaded area is plating area

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

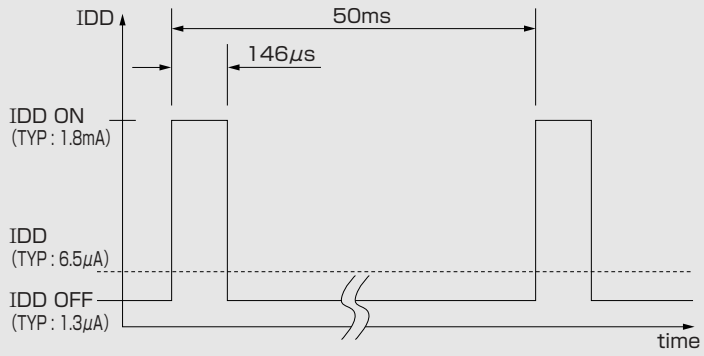


Note5) The center shadow area of the bottom of HIC does not need to be soldered.
This area shares the lead frame with VSS inside the package and please be careful not to short this area to pins except No.4.

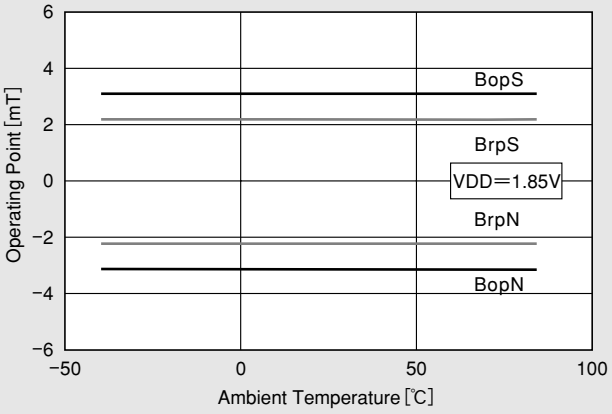
●Supply Voltage



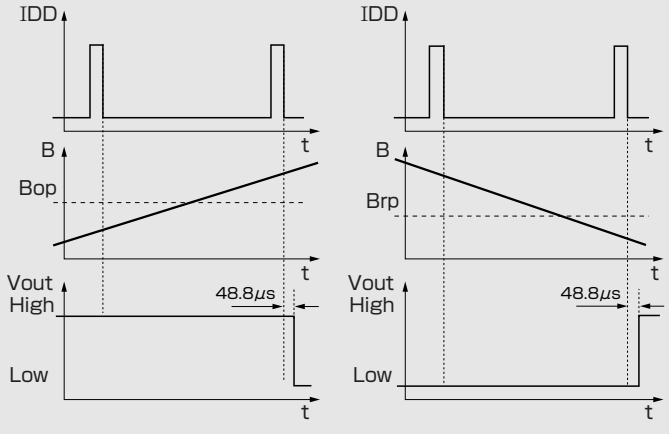
●IDD Pulse Driving (VDD=1.85V)



●Temparature Dependence of Bop. Brp



●Function Timing Chart



Operating Point Timing　　Release Point Timing

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

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June 2, 2010