

# EM-6781

Shipped in packet-tape reel(3000pcs/Reel)

EM-6781 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

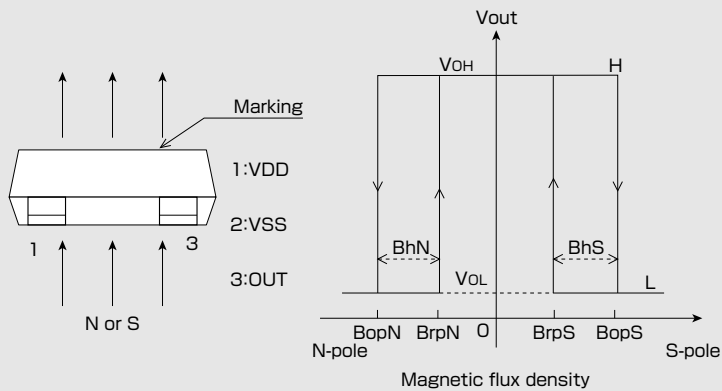
Hall Element Pulse Excitation

High Sensitivity Bop:3mT

Output CMOS

SMT

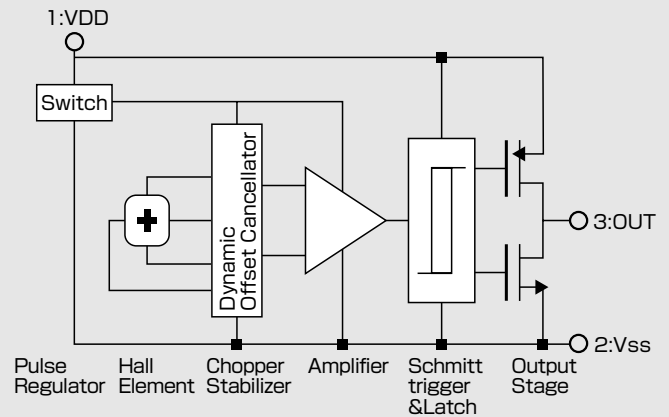
## ●Operational Characteristics



## ●Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Limit	Unit
Supply Voltage	VDD	-0.1 ~ 6.0	V
Output Current	I <sub>out</sub>	±0.5	mA
Operating Temperature Range	Topr	-30 ~ 85	°C
Storage Temperature Range	Tstg	-40 ~ 125	°C

## ●Functional Block Diagram



## ●Magnetic ① and Electrical Characteristics (Ta=25°C VDD=1.85V)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	VDD		1.6		5.5	V
Operating Point	B <sub>OpS</sub>  B <sub>OpN</sub>		1.4*	3.0	4.0	mT
Release Point	B <sub>rpS</sub>  B <sub>rpN</sub>		1.1	2.2	3.7*	mT
Hysteresis	B <sub>hS</sub>  B <sub>hN</sub>		0.3*	0.8	1.5*	mT
Period	T <sub>p</sub>			50	100	ms
Output High Voltage	VOH	I <sub>o</sub> =-0.5mA	VDD-0.4			V
Output Low Voltage	VOL	I <sub>o</sub> =+0.5mA			0.4	V
Supply Current	IDD	Average		6.5	9	μA

1 [mT]=10 [Gauss]

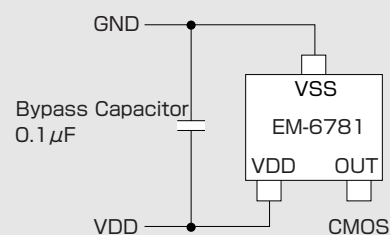
The characteristics with [\*] marks are design targets.

## ●Magnetic Characteristics ② (Ta=-30°C~85°C VDD=1.85V)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Point	B <sub>OpS</sub>  B <sub>OpN</sub>		1.2	3.0	4.4	mT
Release Point	B <sub>rpS</sub>  B <sub>rpN</sub>		0.9	2.2	4.1	mT
Hysteresis	B <sub>hS</sub>  B <sub>hN</sub>		0.1	0.8	1.7	mT

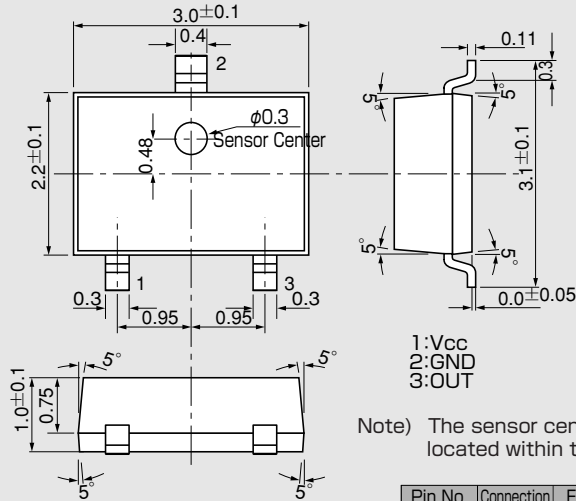
Note) The above specifications are design targets.

## ●Application Circuit



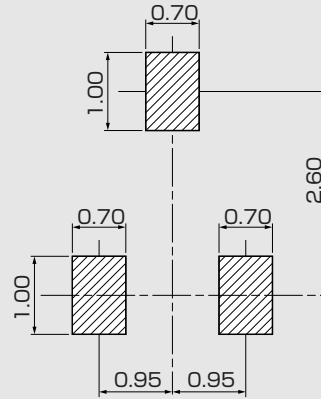
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●Package (Unit:mm)

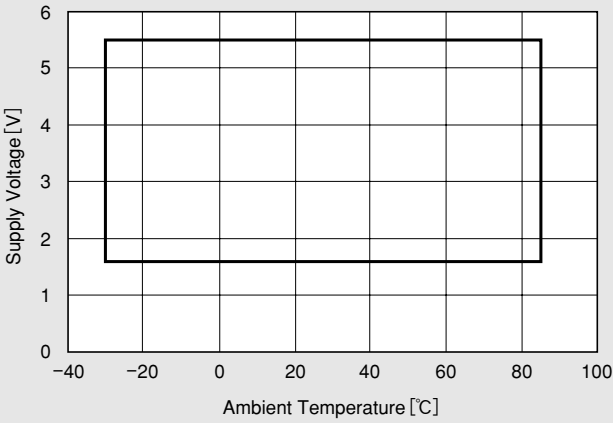


Pin No.	Connection	Function
1	VDD	Supply Voltage
2	VSS	GND
3	OUT	Output Voltage

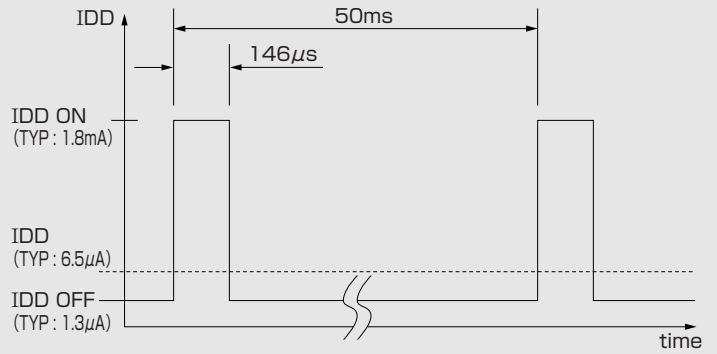
●(For reference only)Land Pattern (Unit:mm)



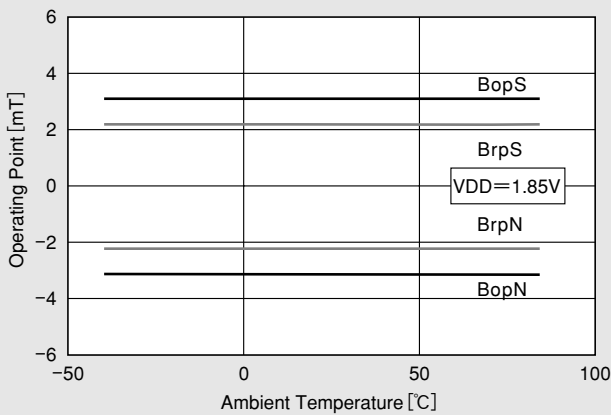
●Supply Voltage



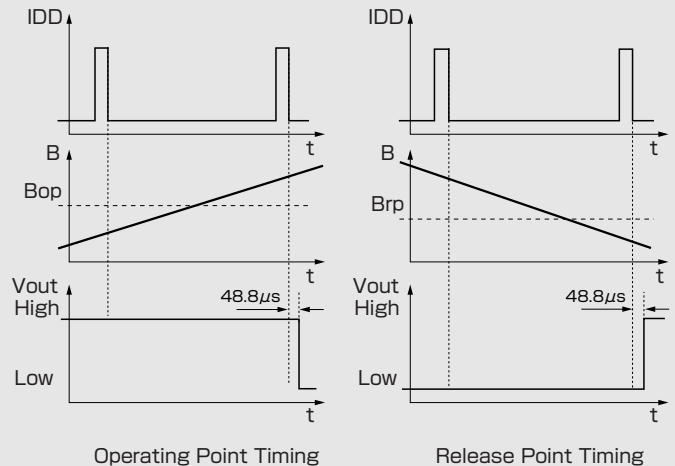
●IDD Pulse Driving (VDD=1.85V)



●Temperature Dependence of Bop, Brp



●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

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April 4, 2012