

# EM-1011

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

EM-1011 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  
3.5~18V

Hall Element  
Continuous  
Excitation

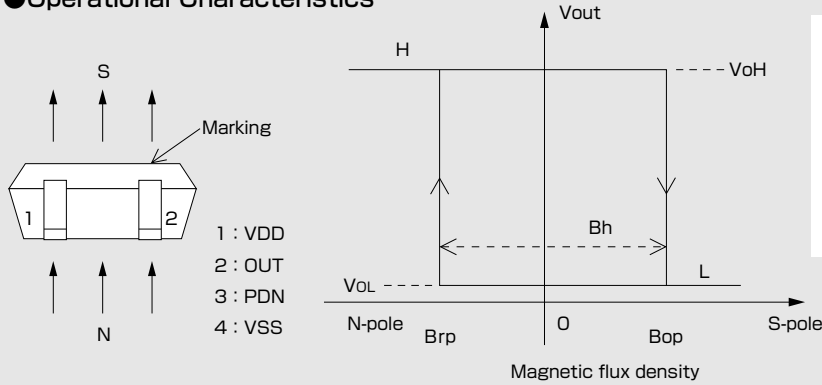
High Sensitivity  
Bop:3mT

Output  
Open Drain

SMT

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

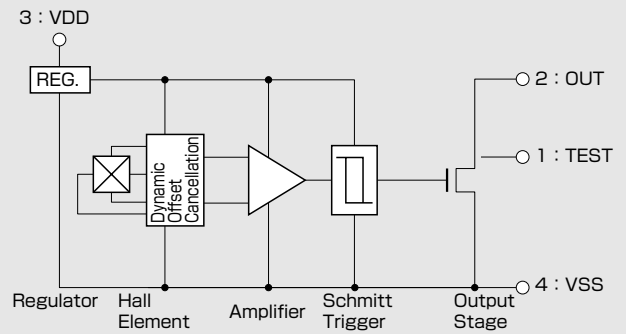
## ●Operational Characteristics



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

| Item                        | Symbol            | Limit     | Unit |
|-----------------------------|-------------------|-----------|------|
| Supply Voltage              | VDD               | -0.3 ~ 25 | V    |
| Output Current              | I <sub>sink</sub> | 12        | mA   |
| Output Supply Voltage       | V <sub>out</sub>  | -0.3 ~ 25 | V    |
| Operating Temperature Range | Topr              | -30 ~ 115 | °C   |
| Storage Temperature Range   | Tstg              | -40 ~ 125 | °C   |

## ●Functional Block Diagram



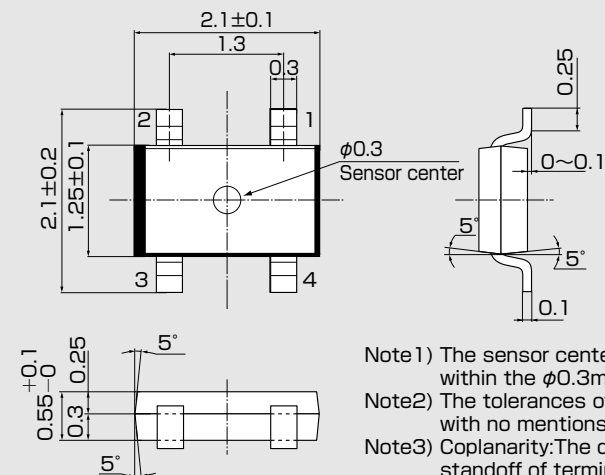
## ●Magnetic and Electrical Characteristics (Ta=25°C VDD=12V)

| Item                      | Symbol            | Conditions                      | Min. | Typ. | Max. | Unit |
|---------------------------|-------------------|---------------------------------|------|------|------|------|
| Supply Voltage            | VDD               |                                 | 3.5  |      | 18   | V    |
| Operating Point           | B <sub>OP</sub>   |                                 | 0.5  | 3    | 6    | mT   |
| Release Point             | B <sub>rp</sub>   |                                 | -6   | -3   | -0.5 | mT   |
| Hysteresis                | B <sub>h</sub>    |                                 | 1    | 6    | 12   | mT   |
| Output Saturation Voltage | V <sub>sat</sub>  | OUT="L" I <sub>sink</sub> =10mA |      | 0.2  | 0.4  | V    |
| Output Leakage Current    | I <sub>leak</sub> | OUT="H"                         |      |      | 1    | μA   |
| Supply Current            | I <sub>DD</sub>   | OUT="H"                         | 0.5  | 3    | 6    | mA   |

1 [mT] = 10 [Gauss]

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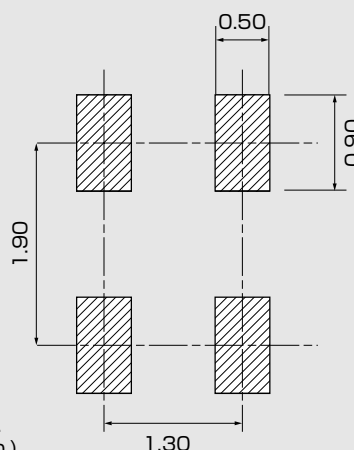
●Package (Unit:mm)



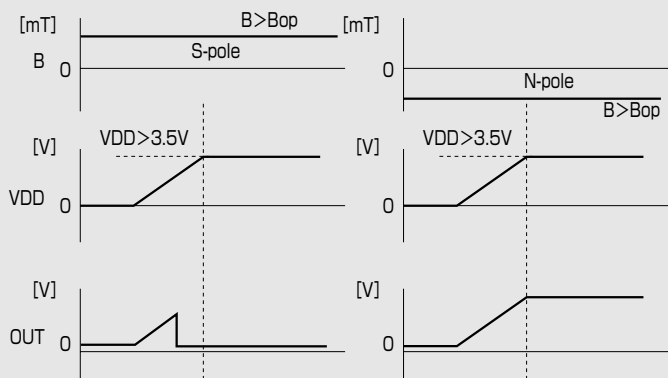
| Pin No. | Connection | Function       | Comment |
|---------|------------|----------------|---------|
| 1       | TEST       | TEST           | N.C     |
| 2       | OUT        | Output Voltage |         |
| 3       | VDD        | Supply Voltage |         |
| 4       | VSS        | GND            |         |

- Note 1) The sensor center is located within the  $\phi 0.3$ mm circle.
- Note 2) The tolerances of dimensions with no mentions is  $\pm 0.1$ mm.
- Note 3) Coplanarity: The differences between standoff of terminals are max. 0.1 mm.
- Note 4) The sensor part is located 0.4mm (typ.) far from marking surface.

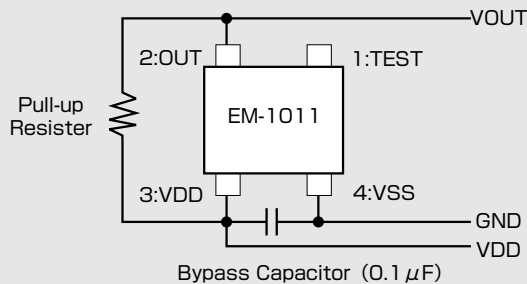
●(For reference only) Land Pattern (Unit:mm)



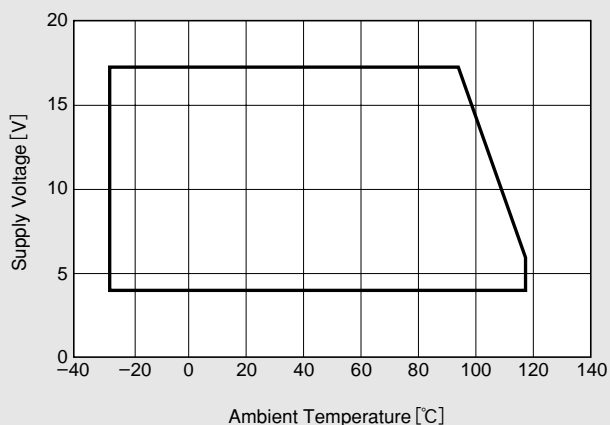
●Output during start-up period



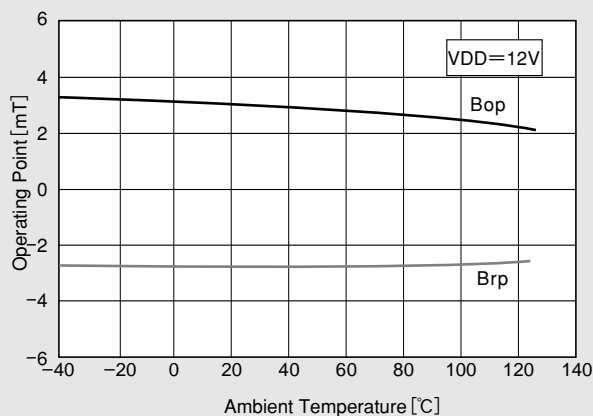
●Application Circuit



●Supply Voltage



●Temperature Dependence of Bop, Brp



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