

[查询"BU52013HFV"供应商](#)

|                |   |
|----------------|---|
| STRUCTURE      | Silicon Monolithic Integrated Circuit   |
| TYPE           | <b>BU52013 HFV</b>  |
| PRODUCT SERIES | Hall effect Switch  |
| FUNCTION       | 1) High sensitivity ( $B_{OP}$ TYP $-3.0\text{mT}$ )<br>2) Low supply current(TYP $3.5\mu\text{A}$ )<br>3) Small package(TYP $1.60 \times 1.60 \times 0.60\text{mm}$ )<br>4) CMOS output type |

**●ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )**

| PARAMETERS                  | SYMBOL    | LIMIT           | UNIT             |
|-----------------------------|-----------|-----------------|------------------|
| Power Supply Voltage        | $V_{DD}$  | $-0.1 \sim 4.5$ | V                |
| Output Current              | $I_{OUT}$ | $\pm 0.5$       | mA               |
| Operating Temperature Range | $T_{opr}$ | $-40 \sim 85$   | $^\circ\text{C}$ |
| Storage Temperature Range   | $T_{stg}$ | $-40 \sim 125$  | $^\circ\text{C}$ |

**·Status of this document**

The Japanese version of this document is the formal specification. A customer may use this translation version only for a reference to help reading the formal version. If there are any difference in translation version of this document, formal version takes priority.

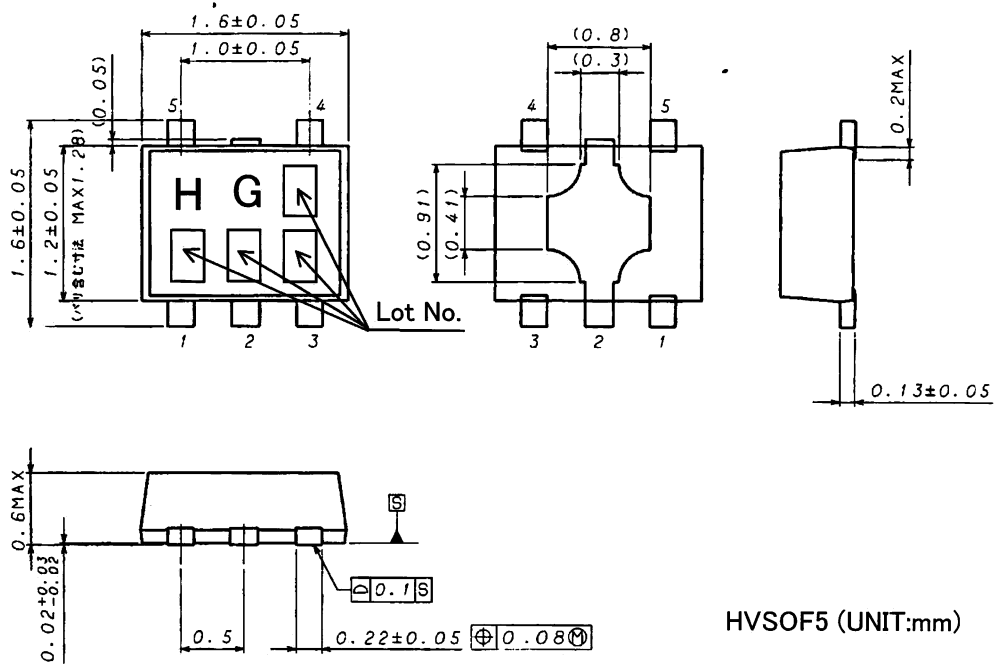
●MAGNETIC, ELECTRICAL CHARACTERISTICS ( $V_{DD} = 1.80V, T_a = 25^\circ C$ )

| PARAMETERS          | SYMBOL         | LIMIT            |      |      | UNIT    | CONDITIONS                            |
|---------------------|----------------|------------------|------|------|---------|---------------------------------------|
|                     |                | MIN              | TYP  | MAX  |         |                                       |
| Supply Voltage      | $V_{DD}$       | 1.65             | 1.80 | 3.30 | V       |                                       |
| Operate Point       | $B_{opN}$      | -5.0             | -3.0 | -    | mT      |                                       |
| Release Point       | $B_{rpN}$      | -                | -2.1 | -0.6 | mT      |                                       |
| Period              | $T_p$          | -                | 50   | 100  | ms      |                                       |
| Output High Voltage | $V_{OH}$       | $V_{DD}$<br>-0.2 | -    | -    | V       | $B_{rpN} < B$<br>$I_{out} = -0.5mA$ ※ |
| Output Low Voltage  | $V_{OL}$       | -                | -    | 0.2  | V       | $B < B_{opN}$<br>$I_{out} = +0.5mA$ ※ |
| Supply Current1     | $I_{DD1(AVG)}$ | -                | 3.5  | 5.5  | $\mu A$ | $V_{DD} = 1.8V, Average$              |
| Supply Current2     | $I_{DD2(AVG)}$ | -                | 6.5  | 9.0  | $\mu A$ | $V_{DD} = 2.7V, Average$              |

※B=Magnetic Flux Density  
1mT=10Gauss

Radiation hardness is not designed.

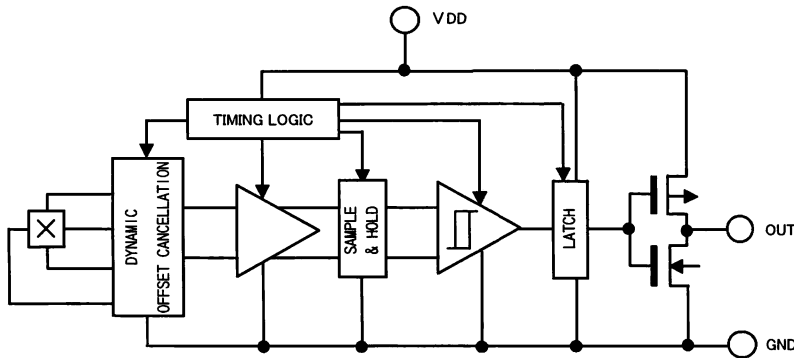
● PACKAGE OUTLINES



● PIN DESCRIPTION

| PIN No. | NAME | FUNCTION     | COMMENT               |
|---------|------|--------------|-----------------------|
| 1       | N.C. |              | OPEN or Short to GND. |
| 2       | GND  | GROUND       |                       |
| 3       | N.C. |              | OPEN or Short to GND. |
| 4       | VDD  | POWER SUPPLY |                       |
| 5       | OUT  | OUTPUT       |                       |

## ● BLOCK DIAGRAM



## ● CAUTIONS ON USE

## 1) Absolute Maximum Ratings

An excess in the absolute maximum ratings, such as supply voltage, temperature range of operating conditions, etc., can break down devices, thus making impossible to identify breaking mode such as a short circuit or an open circuit. If any special mode exceeding the absolute maximum ratings is assumed, consideration should be given to take physical safety measures including the use of fuses, etc.

## 2) GND voltage

Make setting of the potential of the GND terminal so that it will be maintained at the minimum in any operating state.

## 3) Thermal design

Perform thermal design in which there are adequate margins by taking into account the permissible dissipation (Pd) in actual states of use.

## 4) Pin short and mistake fitting

When mounting the IC on the PCB, pay attention to the orientation of the IC. If there is a placement mistake, the IC may be burned up.

## 5) Operation in strong electromagnetic field

Be noted that using ICs in the strong electromagnetic field can malfunction them.

## 6) Mutual impedance

Use short and wide wiring tracks for the power supply and ground to keep the mutual impedance as small as possible. Use a capacitor to keep ripple to a minimum.

## 7) Ground wiring pattern

If small-signal GND and large-current GND are provided, It will be recommended to separate the large-current GND pattern from the small-signal GND pattern and establish a single ground at the reference point of the set PCB so that resistance to the wiring pattern and voltage fluctuations due to a large current will cause no fluctuations in voltages of the small-signal GND. Pay attention not to cause fluctuations in the GND wiring pattern of external parts as well.

## Appendix

---

### Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).

Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

#### About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.

Thank you for your accessing to ROHM product informations.  
More detail product informations and catalogs are available,  
please contact your nearest sales office.

Please contact our sales offices for details ;

|                         |                           |                            |
|-------------------------|---------------------------|----------------------------|
| U.S.A / San Diego       | TEL : +1(858)625-3630     | FAX : +1(858)625-3670      |
| Atlanta                 | TEL : +1(770)754-5972     | FAX : +1(770)754-0691      |
| Dallas                  | TEL : +1(972)312-8818     | FAX : +1(972)312-0330      |
| Germany / Dusseldorf    | TEL : +49(2154)9210       | FAX : +49(2154)921400      |
| United Kingdom / London | TEL : +44(1)908-282-666   | FAX : +44(1)908-282-528    |
| France / Paris          | TEL : +33(0)1 56 97 30 60 | FAX : +33(0) 1 56 97 30 80 |
| China / Hong Kong       | TEL : +852(2)740-6262     | FAX : +852(2)375-8971      |
| Shanghai                | TEL : +86(21)6279-2727    | FAX : +86(21)6247-2066     |
| Dilian                  | TEL : +86(411)8230-8549   | FAX : +86(411)8230-8537    |
| Beijing                 | TEL : +86(10)8525-2483    | FAX : +86(10)8525-2489     |
| Taiwan / Taipei         | TEL : +866(2)2500-6956    | FAX : +866(2)2503-2869     |
| Korea / Seoul           | TEL : +82(2)8182-700      | FAX : +82(2)8182-715       |
| Singapore               | TEL : +65-6332-2322       | FAX : +65-6332-5662        |
| Malaysia / Kuala Lumpur | TEL : +60(3)7958-8355     | FAX : +60(3)7958-8377      |
| Philippines / Manila    | TEL : +63(2)807-6872      | FAX : +63(2)809-1422       |
| Thailand / Bangkok      | TEL : +66(2)254-4890      | FAX : +66(2)256-6334       |

Japan /  
(Internal Sales)

|          |  |                       |                       |
|----------|--|-----------------------|-----------------------|
| Tokyo    | 2-1-1, Yaesu, Chuo-ku, Tokyo 104-0082  | TEL : +81(3)5203-0321 | FAX : +81(3)5203-0300 |
| Yokohama | 2-4-8, Shin Yokohama, Kohoku-ku, Yokohama, Kanagawa 222-8575                                 | TEL : +81(45)476-2131 | FAX : +81(45)476-2128 |
| Nagoya   | Dainagayo Building 9F 3-28-12, Meieki, Nakamura-ku, Nagoya, Aichi 450-0002                   | TEL : +81(52)581-8521 | FAX : +81(52)561-2173 |
| Kyoto    | 579-32 Higashi Shiokouji-cho, Karasuma Nishi-iru, Shiokoujidori, Shimogyo-ku, Kyoto 600-8216 | TEL : +81(75)311-2121 | FAX : +81(75)314-6559 |

(Contact address for overseas customers in Japan)

|          |                       |                        |
|----------|-----------------------|------------------------|
| Yokohama | TEL : +81(45)476-9270 | FAX : +81(045)476-9271 |
|----------|-----------------------|------------------------|