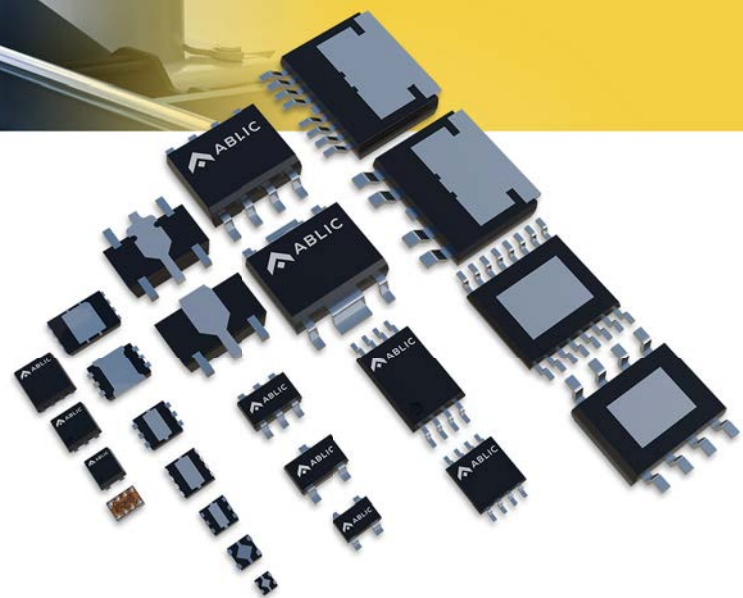


# Product Catalog

Sensors

2025



**ABLIC Inc.**

## Table of Contents

| Features  | Series Name          | Page |
|---|----------------------|------|
| <b>Product Lineup</b>   |                      |      |
| Hall Effect ICs (Magnetic Sensor ICs)   |                      | II   |
| Magnetic sensor ICs (Hall effect ICs) General-use (Hi-Speed/Hi-Volt) Zero Crossing Latch                                |                      | II   |
| Temperature Sensor ICs  |                      | II   |
| <b>Hall Effect ICs (Magnetic Sensor ICs)</b>  |                      |      |
| Omnipolar/Unipolar Detection Type Hall Effect Switch IC   | S-5712A/B/C Series   | 1    |
| High-speed Low Voltage Operation Omnipolar / Unipolar Detection Type Hall Effect Switch IC                              | S-5712E Series       | 2    |
| High-Speed / Middle-Speed Low Current Consumption / Omnipolar / Unipolar Detection Type Hall Effect Switch IC           | S-5715 Series        | 3    |
| Low Current Consumption / Omnipolar / Unipolar Detection Type Hall Effect Switch IC                                     | S-5716 Series        | 4    |
| Low Voltage Operation Omnipolar / Unipolar Detection Type Hall Effect Switch IC with Switchable Detection Pole Function | S-5718 Series        | 5    |
| Low Voltage Operation High-Speed Bipolar Hall Effect Latch IC   | S-5724 Series        | 6    |
| High-Speed Bipolar Hall Effect Latch IC   | S-5725 Series        | 7    |
| High-speed Unipolar Detection Type Hall Effect Switch IC  | S-57B1 Series        | 8    |
| High-speed Bipolar Hall Effect Latch IC   | S-57M1 Series        | 9    |
| <b>Magnetic sensor ICs (Hall effect ICs) General-use (Hi-Speed/Hi-Volt) Zero Crossing Latch</b>                         |                      |      |
| High-Withstand Voltage High-Speed Unipolar Detection Type Hall Effect Switch IC   | S-5731 Series        | 10   |
| 125°C Operation High-Withstand Voltage High-Speed Bipolar Hall Effect Latch IC  | S-5741 B Series      | 11   |
| 125°C Operation High-withstand Voltage High-speed Bipolar Hall Effect Latch IC  | S-5743 A Series      | 12   |
| 125°C Operation, High-withstand Voltage, High-speed Omnipolar Detection Type Hall Effect Switch IC                      | S-575D B Series      | 13   |
| 125°C Operation, High-withstand Voltage, High-speed Unipolar Detection Type Hall Effect Switch IC                       | S-575S/5N B Series   | 14   |
| 125°C Operation, High-Withstand Voltage, High-Speed, Bipolar Hall Effect Latch IC                                       | S-576B B Series      | 15   |
| 125°C Operation High-Withstand Voltage, High-Speed, Zero Crossing Latch Hall Effect IC                                  | S-576Z B Series      | 16   |
| Extended operation temperature range, High-withstand voltage, High-speed, Zero Crossing Latch Hall Effect IC            | S-576Z R Series      | 17   |
| <b>Temperature Sensor ICs</b>   |                      |      |
| Temperature Switch IC with  | S-5841 Series        | 18   |
| Temperature Switch IC (Thermostat IC)   | S-5844A Series       | 19   |
| High-accuracy Digital Temperature Sensor with Thermostat Function   | S-5852A Series       | 20   |
| CMOS Temperature Sensor IC  | S-5813A/14A Series   | 21   |
| CMOS Temperature Sensor IC  | S-58LM20A Series     | 22   |
| Temperature Sensor IC   | S-8110C/8120C Series | 23   |
| Built-in ARP Function 2-wire Serial EEPROM with Temperature Sensor  | S-585AA              | 24   |
| <b>Packages</b>   |                      |      |
| Package List  |                      | 25   |

## Hall Effect ICs (Magnetic Sensor ICs)

[Hall Effect ICs \(Magnetic Sensor ICs\) on ablic.com](#)

| Series Name        | Pole detection            | Drive cycle typ. [ms]                    | Current consumption typ. [μA] | Supply voltage min. [V] | Supply voltage max. [V] | Magnetic sensitivity Bop typ. [±mT] | Operation temp. min. [°C] | Operation temp. max. [°C] | Package          | Page |
|--------------------|---------------------------|--|-------------------------------|-------------------------|-------------------------|-------------------------------------|---------------------------|---------------------------|------------------|------|
| <b>S-5712A/B/C</b> | Omnipolar, S pole, N pole | 5.70, 6.05, 50.50, 50.85, 204.05, 204.10 | 1.0, 1.4, 2.0, 6.0, 12        | 1.60                    | 3.5                     | 1.8, 3.0, 4.5, 7.0                  | -40                       | 85                        | SNT-4A, SOT-23-3 | 1    |
| <b>S-5712E</b>     | Omnipolar, S pole, N pole | 0.05, 0.10                               | 640                           | 1.60                    | 3.5                     | 3.0, 4.5, 7.0                       | -40                       | 85                        | SNT-4A, SOT-23-3 | 2    |
| <b>S-5715</b>      | Omnipolar, S pole, N pole | 0.05, 0.10, 0.90, 1.25, 5.70, 6.05       | 13, 26, 60, 155, 1400         | 2.70                    | 5.5                     | 3.0                                 | -40                       | 85                        | SNT-4A, SOT-23-3 | 3    |
| <b>S-5716</b>      | Omnipolar, S pole, N pole | 50.50, 50.85                             | 2.6, 4.0                      | 2.70                    | 5.5                     | 1.8, 3.0, 3.4, 4.5, 7.0             | -40                       | 85                        | SNT-4A, SOT-23-3 | 4    |
| <b>S-5718</b>      | Omnipolar, S pole, N pole | 5.70, 50.50, 102.10                      | 1.4, 2.0, 12                  | 1.45                    | 3.6                     | 1.8, 3.0, 4.5                       | -40                       | 85                        | SNT-4A           | 5    |
| <b>S-5724</b>      | Bipolar                   | 0.05, 1.25, 6.05                         | 6.0, 26, 640                  | 1.60                    | 3.5                     | 3.0                                 | -40                       | 85                        | SNT-4A, SOT-23-3 | 6    |
| <b>S-5725</b>      | Bipolar                   | 0.05, 1.25, 6.05                         | 13, 60, 1400                  | 2.70                    | 5.5                     | 0.8, 1.8, 3.0, 7.0                  | -40                       | 85                        | SNT-4A, SOT-23-3 | 7    |
| <b>S-57B1</b>      | S pole                    | 0.05                                     | 1400                          | 2.70                    | 5.5                     | 3.0                                 | -40                       | 125                       | SOT-23-3         | 8    |
| <b>S-57M1</b>      | Bipolar                   | 0.05                                     | 1400                          | 2.70                    | 5.5                     | 3.0                                 | -40                       | 125                       | SNT-4A, SOT-23-3 | 9    |

## Magnetic sensor ICs (Hall effect ICs) General-use (Hi-Speed/Hi-Volt) Zero Crossing Latch

[Magnetic sensor ICs \(Hall effect ICs\) General-use \(Hi-Speed/Hi-Volt\) on ablic.com](#)

| Series Name        | Pole detection      | Output delay time typ. [μs] | Chopping frequency typ. [kHz] | Supply voltage min. [V] | Supply voltage max. [V] | Magnetic sensitivity Bop typ. [±mT] | Operation temp. min. [°C] | Operation temp. max. [°C] | Package                  | Page |
|--------------------|---------------------|-----------------------------|-------------------------------|-------------------------|-------------------------|-------------------------------------|---------------------------|---------------------------|--------------------------|------|
| <b>S-5731</b>      | S pole, N pole      | 16                          | 250                           | 3.5                     | 26.0                    | 3.0, 6.0                            | -40                       | 85                        | SOT-23-3                 | 10   |
| <b>S-5741 B</b>    | Bipolar             | 8                           | 500                           | 3.5                     | 26.0                    | 1.8, 3.0, 6.0                       | -40                       | 125                       | SOT-23-3S                | 11   |
| <b>S-5743 A</b>    | Bipolar             | 8                           | 500                           | 2.7                     | 26.0                    | 0.5, 1.5, 2.2, 3.0                  | -40                       | 125                       | SOT-23-3S                | 12   |
| <b>S-575D B</b>    | Omnipolar           | 16                          | 500                           | 2.7                     | 26.0                    | 3.0, 6.0, 10.0, 15.0                | -40                       | 125                       | TSOT-23-3S, HSNT-6(2025) | 13   |
| <b>S-575S/5N B</b> | S pole, N pole      | 8                           | 500                           | 2.7                     | 26.0                    | 3.0, 6.0, 10.0, 15.0                | -40                       | 125                       | TSOT-23-3S, HSNT-6(2025) | 14   |
| <b>S-576B B</b>    | Bipolar             | 8                           | 500                           | 2.7                     | 26.0                    | 0.5, 2.2, 3.0, 6.0, 10.0            | -40                       | 125                       | TSOT-23-3S, HSNT-6(2025) | 15   |
| <b>S-576Z B</b>    | Zero Crossing Latch | 8                           | 500                           | 2.7                     | 26.0                    | -                                   | -40                       | 125                       | TSOT-23-3S, HSNT-6(2025) | 16   |
| <b>S-576Z R</b>    | Zero Crossing Latch | 8                           | 500                           | 2.7                     | 26.0                    | -                                   | -50                       | 150                       | TSOT-23-3S               | 17   |

## Temperature Sensor ICs

[Temperature Sensor ICs on ablic.com](#)

| Series Name          | Features                                   | Sensitivity / Type | Detection temp. min. [°C] | Detection temp. max. [°C] | Supply voltage min. [V] | Supply voltage max. [V] | Current consumption [μA] | Temp. accuracy [±°C] | Operation temp. min. [°C] | Operation temp. max. [°C] | Package                        | Page |
|----------------------|--|--------------------|---------------------------|---------------------------|-------------------------|-------------------------|--------------------------|----------------------|---------------------------|---------------------------|--------------------------------|------|
| <b>S-5841</b>        | Temp switch                                | Hysteresis         | 40                        | 100                       | 2.20                    | 10.0                    | 10.00                    | 2.5                  | -40                       | 125                       | SOT-23-5, SNT-6A               | 18   |
| <b>S-5844A</b>       | Temp switch                                | Hysteresis         | 50                        | 100                       | 1.65                    | 5.5                     | 0.18                     | 2.5                  | -40                       | 125                       | SOT-23-5, SNT-4A, HSNT-4(1010) | 19   |
| <b>S-5852A</b>       | Digital output                             | 0.0625°C           | -40                       | 125                       | 1.70                    | 3.6                     | 40.00                    | 1.0                  | -40                       | 125                       | HSNT-8(2030)                   | 20   |
| <b>S-5813A/5814A</b> | Analog output                              | -11.04mV/°C        | -30                       | 100                       | 2.40                    | 10.0                    | 4.00                     | 2.5, 5.0             | -40                       | 100                       | SNT-4A                         | 21   |
| <b>S-58LM20A</b>     | Analog output                              | -11.77mV/°C        | -55                       | 130                       | 2.40                    | 5.5                     | 4.50                     | 2.5                  | -55                       | 130                       | SC-82AB, SNT-4A, WLP-4B        | 22   |
| <b>S-8110C/8120C</b> | Analog output                              | -8.20mV/°C         | -30                       | 100                       | 2.40                    | 10.0                    | 4.50                     | 2.5, 5.0             | -40                       | 100                       | SC-82AB, SNT-4A                | 23   |
| <b>S-585AA</b>       | With ARP function / EEPROM, Digital output | 0.0625°C           | -40                       | 125                       | 1.70                    | 3.6                     | 40.00                    | 1.0                  | -40                       | 125                       | DFN-8(2030)B                   | 24   |

# S-5712A/B/C Series

## LOW VOLTAGE OPERATION OMNIPOLAR / UNIPOLAR DETECTION TYPE HALL EFFECT SWITCH IC

This IC, developed by CMOS technology, is a high-accuracy Hall effect switch IC that operates at a low voltage and low current consumption. The output voltage changes when this IC detects the intensity level of magnetic flux density. Using this IC with a magnet makes it possible to detect the open / close in various devices.

High-density mounting is possible by using the small SOT-23-3 or the super-small SNT-4A package.

Due to its low voltage operation and low current consumption, this IC is suitable for battery-operated portable devices. Also, due to its high-accuracy magnetic characteristics, this IC can make operation's dispersion in the system combined with magnet smaller.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- Pole detection\*1: Detection of omnipolar, S pole or N pole
- Output logic\*1: Active "L", active "H"
- Output form\*1: Nch open-drain output, CMOS output
- Magnetic sensitivity\*1:
  - B<sub>OP</sub> = 1.8 mT typ.
  - B<sub>OP</sub> = 3.0 mT typ.
  - B<sub>OP</sub> = 4.5 mT typ.
  - B<sub>OP</sub> = 7.0 mT typ.
- Operating cycle (current consumption)\*1:
  - Product with omnipolar detection
    - t<sub>CYCLE</sub> = 5.70 ms (I<sub>DD</sub> = 12.0 μA) typ.
    - t<sub>CYCLE</sub> = 50.50 ms (I<sub>DD</sub> = 2.0 μA) typ.
    - t<sub>CYCLE</sub> = 204.10 ms (I<sub>DD</sub> = 1.0 μA) typ.
  - Product with S pole or N pole detection
    - t<sub>CYCLE</sub> = 6.05 ms (I<sub>DD</sub> = 6.0 μA) typ.
    - t<sub>CYCLE</sub> = 50.85 ms (I<sub>DD</sub> = 1.4 μA) typ.
    - t<sub>CYCLE</sub> = 204.05 ms (I<sub>DD</sub> = 1.0 μA) typ.
- Power supply voltage range: V<sub>DD</sub> = 1.6 V to 3.5 V
- Operation temperature range: T<sub>a</sub> = -40°C to +85°C
- Lead-free (Sn 100%), halogen-free

\*1. The option can be selected.

### ■ Applications

- Mobile phone, smart phone
- Notebook PC, tablet PC
- Digital video camera
- Plaything, portable game
- Home appliance

### ■ Packages

- SOT-23-3
- SNT-4A

# S-5712E Series

## HIGH-SPEED LOW VOLTAGE OPERATION OMNIPOLAR / UNIPOLAR DETECTION TYPE HALL EFFECT SWITCH IC

This IC, developed by CMOS technology, is a high-accuracy Hall effect switch IC that operates at a low voltage with a high-speed detection. The output voltage changes when this IC detects the intensity level of magnetic flux density. Using this IC with a magnet makes it possible to detect the open / close in various devices.

High-density mounting is possible by using the small SOT-23-3 or the super-small SNT-4A package.

Due to its low voltage operation and low current consumption, this IC is suitable for battery-operated portable devices. Also, due to its high-accuracy magnetic characteristics, this IC can make operation's dispersion in the system combined with magnet smaller.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- |  |   |
|--|---|
| • Pole detection*1:                      | Detection of omnipolar, S pole or N pole  |
| • Output logic*1:                        | Active "L", active "H"  |
| • Output form*1:                         | Nch open-drain output, CMOS output  |
| • Magnetic sensitivity*1:                | B <sub>OP</sub> = 3.0 mT typ.<br>B <sub>OP</sub> = 4.5 mT typ.<br>B <sub>OP</sub> = 7.0 mT typ.   |
| • Operating cycle (current consumption): | Product with omnipolar detection<br>t <sub>CYCLE</sub> = 0.10 ms (I <sub>DD</sub> = 640 μA) typ.<br>Product with S pole or N pole detection<br>t <sub>CYCLE</sub> = 0.05 ms (I <sub>DD</sub> = 640 μA) typ. |
| • Power supply voltage range:            | V <sub>DD</sub> = 1.6 V to 3.5 V  |
| • Operation temperature range:           | T <sub>a</sub> = -40°C to +85°C   |
| • Lead-free (Sn 100%), halogen-free      |   |

\*1. The option can be selected.

### ■ Applications

- Mobile phone, smart phone
- Notebook PC, tablet PC
- Digital video camera
- Plaything, portable game
- Home appliance

### ■ Packages

- SOT-23-3
- SNT-4A

# S-5715 Series

## HIGH-SPEED / MIDDLE-SPEED LOW CURRENT CONSUMPTION BOTH POLES / UNIPOLAR DETECTION TYPE HALL IC

The S-5715 Series, developed by CMOS technology, is a high-accuracy Hall IC that operates with high-speed / middle-speed detection and low current consumption.

The output voltage changes when the S-5715 Series detects the intensity level of flux density. Using the S-5715 Series with a magnet makes it possible to detect the open / close and rotation state in various devices.

High-density mounting is possible by using the small SOT-23-3 or the super-small SNT-4A packages.

Due to its high-accuracy magnetic characteristics, the S-5715 Series can make operation's dispersion in the system combined with magnet smaller.

**Caution** This product is intended to use in general electronic devices such as consumer electronics, office equipment, and communications devices. Before using the product in medical equipment or automobile equipment including car audio, keyless entry and engine control unit, contact to ABLIC Inc. is indispensable.

### ■ Features

- |   |  |
|---|--|
| • Pole detection <sup>*1</sup> :                        | Detection of both poles, S pole or N pole              |
| • Detection logic for magnetism <sup>*1</sup> :         | Active "L", active "H"                                 |
| • Output form <sup>*1</sup> :                           | Nch open-drain output, CMOS output                     |
| • Magnetic sensitivity:                                 | $B_{OP} = 3.0 \text{ mT typ.}$                         |
| • Operating cycle (current consumption) <sup>*1</sup> : | Product with both poles detection                      |
|   | $t_{CYCLE} = 0.10 \text{ ms (1400 } \mu\text{A) typ.}$ |
|   | $t_{CYCLE} = 0.90 \text{ ms (155 } \mu\text{A) typ.}$  |
|   | $t_{CYCLE} = 5.70 \text{ ms (26 } \mu\text{A) typ.}$   |
|   | Product with S pole or N pole detection                |
|   | $t_{CYCLE} = 0.05 \text{ ms (1400 } \mu\text{A) typ.}$ |
|   | $t_{CYCLE} = 1.25 \text{ ms (60 } \mu\text{A) typ.}$   |
|   | $t_{CYCLE} = 6.05 \text{ ms (13 } \mu\text{A) typ.}$   |
| • Power supply voltage range:                           | $V_{DD} = 2.7 \text{ V to } 5.5 \text{ V}$             |
| • Operation temperature range:                          | $T_a = -40^\circ\text{C to } +85^\circ\text{C}$        |
| • Lead-free (Sn 100%), halogen-free <sup>*2</sup>       |  |

\*1. The option can be selected.

\*2. Refer to "■ Product Name Structure" for details.

### ■ Applications

- Plaything, portable game
- Home appliance
- Housing equipment
- Industrial equipment

### ■ Packages

- SOT-23-3
- SNT-4A

# S-5716 Series

## LOW CURRENT CONSUMPTION OMNIPOLAR / UNIPOLAR DETECTION TYPE HALL EFFECT SWITCH IC

This IC, developed by CMOS technology, is a high-accuracy Hall effect switch IC that operates with low current consumption.

The output voltage changes when this IC detects the intensity level of magnetic flux density. Using this IC with a magnet makes it possible to detect the open / close in various devices.

High-density mounting is possible by using the small SOT-23-3 package or the super small SNT-4A package.

Due to its high-accuracy magnetic characteristics, this IC can make operation's dispersion in the system combined with magnet smaller.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- |  |   |
|--|---|
| • Pole detection*1:                      | Detection of omnipolar, S pole or N pole  |
| • Output logic*1:                        | Active "L", active "H"  |
| • Output form*1:                         | Nch open-drain output, CMOS output  |
| • Magnetic sensitivity*1:                | B <sub>OP</sub> = 1.8 mT typ.<br>B <sub>OP</sub> = 3.0 mT typ.<br>B <sub>OP</sub> = 3.4 mT typ.<br>B <sub>OP</sub> = 4.5 mT typ.<br>B <sub>OP</sub> = 7.0 mT typ.   |
| • Operating cycle (current consumption): | Product with omnipolar detection<br>t <sub>CYCLE</sub> = 50.50 ms (I <sub>DD</sub> = 4.0 μA) typ.<br>Product with S pole or N pole detection<br>t <sub>CYCLE</sub> = 50.85 ms (I <sub>DD</sub> = 2.6 μA) typ. |
| • Power supply voltage range:            | V <sub>DD</sub> = 2.7 V to 5.5 V  |
| • Operation temperature range:           | T <sub>a</sub> = -40°C to +85°C   |
| • Lead-free (Sn 100%), halogen-free      |   |

\*1. The option can be selected.

### ■ Applications

- Plaything, portable game
- Home appliance
- Housing equipment
- Industrial equipment

### ■ Packages

- SOT-23-3
- SNT-4A

# S-5718 Series

## LOW VOLTAGE OPERATION OMNIPOLAR / UNIPOLAR DETECTION TYPE HALL EFFECT SWITCH IC WITH SWITCHABLE DETECTION POLE FUNCTION

This IC, developed by CMOS technology, is a high-accuracy Hall effect switch IC with switchable detection pole function that operates at a low voltage and low current consumption.

The output voltage changes when this IC detects the intensity level of magnetic flux density of the polarity according to the input pin status. The inclusion of a switchable detection pole function makes it possible to reduce the number of parts and realize a variety of different systems by using this IC with a magnet. High-density mounting is possible by using the super small SNT-4A package.

Due to its low voltage operation and low current consumption, this IC is suitable for battery-operated portable devices. Its high-accuracy magnetic characteristics also allow this IC to reduce operation dispersion in magnet combination systems.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales office.

### ■ Features

- |   |  |
|---|--|
| • Switchable detection pole function:                     | Omnipolar detection, S pole detection, N pole detection  |
| • Output logic <sup>*1</sup> :                            | Active "L"<br>Active "H"   |
| • Output form:  | CMOS output  |
| • Magnetic sensitivity (hysteresis width) <sup>*1</sup> : | B <sub>OP</sub> = 1.8 mT typ. (B <sub>HYS</sub> = 0.7 mT typ.)<br>B <sub>OP</sub> = 3.0 mT typ. (B <sub>HYS</sub> = 0.8 mT typ.)<br>B <sub>OP</sub> = 3.0 mT typ. (B <sub>HYS</sub> = 1.3 mT typ.)<br>B <sub>OP</sub> = 4.5 mT typ. (B <sub>HYS</sub> = 1.0 mT typ.)<br>B <sub>OP</sub> = 4.5 mT typ. (B <sub>HYS</sub> = 2.5 mT typ.) |
| • Operating cycle (current consumption) <sup>*1</sup> :   | t <sub>CYCLE</sub> = 102.1 ms typ. (I <sub>DD</sub> = 1.4 μA typ.)<br>t <sub>CYCLE</sub> = 50.5 ms typ. (I <sub>DD</sub> = 2.0 μA typ.)<br>t <sub>CYCLE</sub> = 5.7 ms typ. (I <sub>DD</sub> = 12.0 μA typ.)   |
| • Power supply voltage range <sup>*2</sup> :              | V <sub>DD</sub> = 1.45 V to 3.6 V  |
| • Operation temperature range:                            | T <sub>a</sub> = -40°C to +85°C  |
| • Lead-free (Sn 100%), halogen-free                       |  |

\*1. The option can be selected.

\*2. Power supply voltage range is different by optional combination.

### ■ Applications

- Mobile phone, smart phone
- Notebook PC, tablet PC
- Wearable device
- Plaything, portable game
- Home appliance

### ■ Package

- SNT-4A



# S-5724 Series

## LOW VOLTAGE OPERATION HIGH-SPEED BIPOLAR HALL EFFECT LATCH IC

The S-5724 Series, developed by CMOS technology, is a high-accuracy hall effect latch IC that operates at a low voltage with a high-sensitivity, a high-speed detection and low current consumption.

The output voltage changes when the S-5724 Series detects the intensity level of magnetic flux density and a polarity change. Using the S-5724 Series with a magnet makes it possible to detect the rotation status in various devices.

High-density mounting is possible by using the small SOT-23-3 or the super-small SNT-4A packages.

Due to its high-accuracy magnetic characteristics, the S-5724 Series can make operation's dispersion in the system combined with magnet smaller.

**Caution** This product is intended to use in general electronic devices such as consumer electronics, office equipment, and communications devices. Before using the product in medical equipment or automobile equipment including car audio, keyless entry and engine control unit, it is imperative to contact our sales representatives.

### ■ Features

- |  |   |
|--|---|
| • Pole detection:                          | Bipolar latch   |
| • Output logic*1:                          | V <sub>OUT</sub> = "L" at S pole detection<br>V <sub>OUT</sub> = "H" at S pole detection  |
| • Output form*1:                           | Nch open-drain output, CMOS output  |
| • Magnetic sensitivity:                    | B <sub>OP</sub> = 3.0 mT typ.   |
| • Operating cycle (current consumption)*1: | t <sub>CYCLE</sub> = 50 μs (I <sub>DD</sub> = 640.0 μA) typ.<br>t <sub>CYCLE</sub> = 1.25 ms (I <sub>DD</sub> = 26.0 μA) typ.<br>t <sub>CYCLE</sub> = 6.05 ms (I <sub>DD</sub> = 6.0 μA) typ. |
| • Power supply voltage range:              | V <sub>DD</sub> = 1.6 V to 3.5 V  |
| • Operation temperature range:             | T <sub>a</sub> = -40°C to +85°C   |
| • Built-in power-down circuit:             | Extends battery life (only SNT-4A)  |
| • Lead-free (Sn 100%), halogen-free        |   |

\*1. The option can be selected.

### ■ Applications

- Digital still camera
- Plaything, portable game
- Home appliance

### ■ Packages

- SOT-23-3
- SNT-4A

# S-5725 Series

## HIGH-SPEED BIPOLAR HALL EFFECT LATCH IC

This IC, developed by CMOS technology, is a high-accuracy hall effect latch IC that operates with a high-sensitivity, a high-speed detection and low current consumption.

The output voltage changes when this IC detects the intensity level of magnetic flux density and a polarity change. Using the S-5725 Series with a magnet makes it possible to detect the rotation status in various devices.

High-density mounting is possible by using the small SOT-23-3 or the super-small SNT-4A packages.

Due to its high-accuracy magnetic characteristics, this IC can make operation's dispersion in the system combined with magnet smaller.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- |  |   |
|--|---|
| • Pole detection:                          | Bipolar latch   |
| • Output logic*1:                          | V <sub>OUT</sub> = "L" at S pole detection<br>V <sub>OUT</sub> = "H" at S pole detection  |
| • Output form*1:                           | Nch open-drain output, CMOS output  |
| • Magnetic sensitivity*1:                  | B <sub>OP</sub> = 0.8 mT typ.<br>B <sub>OP</sub> = 1.8 mT typ.<br>B <sub>OP</sub> = 3.0 mT typ.<br>B <sub>OP</sub> = 7.0 mT typ.  |
| • Operating cycle (current consumption)*1: | t <sub>CYCLE</sub> = 50 μs (I <sub>DD</sub> = 1400.0 μA) typ.<br>t <sub>CYCLE</sub> = 1.25 ms (I <sub>DD</sub> = 60.0 μA) typ.<br>t <sub>CYCLE</sub> = 6.05 ms (I <sub>DD</sub> = 13.0 μA) typ. |
| • Power supply voltage range:              | V <sub>DD</sub> = 2.7 V to 5.5 V  |
| • Operation temperature range:             | T <sub>a</sub> = -40°C to +85°C   |
| • Built-in power-down circuit:             | Extends battery life (only SNT-4A)  |
| • Lead-free (Sn 100%), halogen-free        |   |

\*1. The option can be selected.

### ■ Applications

- Plaything, portable game
- Home appliance
- Housing equipment
- Industrial equipment

### ■ Packages

- SOT-23-3
- SNT-4A

# S-57B1 Series

## 125°C OPERATION HIGH-SPEED UNIPOLAR DETECTION TYPE HALL IC

This IC, developed by CMOS technology, is a high-accuracy Hall IC that operates with a high-sensitivity, a high-speed detection and low current consumption.

The output voltage changes when this IC detects the intensity level of flux density. Using this IC with a magnet makes it possible to detect the open / close and rotation state in various devices. High-density mounting is possible by using the small SOT-23-3 package. Due to its high-accuracy magnetic characteristics, this IC can make operation's dispersion in the system combined with magnet smaller.

ABLIC Inc. offers a "magnetism simulation service" that provides the ideal combination of magnets and our Hall ICs for customer systems. Our magnetism simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetism simulation service, contact our sales office.

### ■ Features

- |                                     |  |
|-------------------------------------|--|
| • Pole detection:                   | Detection of S pole                              |
| • Detection logic for magnetism*1:  | Active "L", active "H"                           |
| • Output form*1:                    | Nch open drain output, CMOS output               |
| • Magnetic sensitivity*1:           | $B_{OP} = 3.0 \text{ mT typ.}$                   |
|                                     | $B_{OP} = 4.5 \text{ mT typ.}$                   |
|                                     | $B_{OP} = 7.0 \text{ mT typ.}$                   |
| • Operating cycle:                  | $t_{CYCLE} = 50 \mu\text{s typ.}$                |
| • Power supply voltage range:       | $V_{DD} = 2.7 \text{ V to } 5.5 \text{ V}$       |
| • Operation temperature range:      | $T_a = -40^\circ\text{C to } +125^\circ\text{C}$ |
| • Lead-free (Sn 100%), halogen-free |  |

\*1. The Option can be selected.

### ■ Applications

- Motor
- Housing equipment
- Industrial equipment

### ■ Package

- SOT-23-3

# S-57M1 Series

## HIGH-SPEED, BIPOLAR HALL EFFECT LATCH IC

This IC, developed by CMOS technology, is a high-accuracy Hall IC that operates with a high-sensitivity, a high-speed detection and low current consumption.

The output voltage level changes when this IC detects the intensity level of magnetic flux density and a polarity change.

Using this IC with a magnet makes it possible to detect the rotation status in various devices.

High-density mounting is possible by using the small SOT-23-3 or the super-small SNT-4A package.

Due to its high-accuracy magnetic characteristics, this IC can make operation's dispersion in the system combined with magnet smaller.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- |  |  |
|--|--|
| • Pole detection:                        | Bipolar latch                                |
| • Output logic*1:                        | $V_{OUT} = "L"$ at S pole detection          |
|  | $V_{OUT} = "H"$ at S pole detection          |
| • Output form*1:                         | Nch open-drain output, CMOS output           |
| • Magnetic sensitivity:                  | $B_{OP} = 3.0$ mT typ.                       |
| • Operation cycle (current consumption): | $t_{CYCLE} = 50$ $\mu$ s (1400 $\mu$ A) typ. |
| • Power supply voltage range:            | $V_{DD} = 2.7$ V to 5.5 V                    |
| • Operation temperature range:           | $T_a = -40^{\circ}$ C to $+125^{\circ}$ C    |
| • Lead-free (Sn 100%), halogen-free      |  |

\*1. The option can be selected.

### ■ Applications

- Motor
- Housing equipment
- Industrial equipment

### ■ Packages

- SOT-23-3
- SNT-4A

# S-5731 Series

## HIGH-WITHSTAND VOLTAGE HIGH-SPEED UNIPOLAR DETECTION TYPE HALL EFFECT SWITCH IC

This IC, developed by CMOS technology, is a unipolar detection type Hall effect switch IC with high-withstand voltage, high-speed detection and high-accuracy magnetic characteristics.

The output voltage changes when this IC detects the intensity level of magnetic flux density. Using this IC with a magnet makes it possible to detect the open / close and rotation status in various devices.

This IC includes an output current limit circuit.

High-density mounting is possible by using the small SOT-23-3 package.

Due to its high-accuracy magnetic characteristics, this IC can make operation's dispersion in the system combined with magnet smaller.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales office.

### ■ Features

- |   |  |
|---|--|
| • Pole detection <sup>*1</sup> :        | Detection of S pole, detection of N pole                           |
| • Output logic <sup>*1</sup> :          | Active "L", active "H"   |
| • Output form <sup>*1</sup> :           | Nch open-drain output,<br>Nch driver + built-in pull-up resistor   |
| • Magnetic sensitivity <sup>*1</sup> :  | $B_{OP} = 3.0 \text{ mT typ.}$ ,<br>$B_{OP} = 6.0 \text{ mT typ.}$ |
| • Chopping frequency:                   | $f_C = 250 \text{ kHz typ.}$                                       |
| • Output delay time:                    | $t_D = 16.0 \mu\text{s typ.}$                                      |
| • Power supply voltage range:           | $V_{DD} = 3.5 \text{ V to } 26.0 \text{ V}$                        |
| • Built-in regulator                    |  |
| • Built-in output current limit circuit |  |
| • Operation temperature range:          | $T_a = -40^\circ\text{C to } +85^\circ\text{C}$                    |
| • Lead-free (Sn 100%), halogen-free     |  |

\*1. The option can be selected.

### ■ Applications

- Home appliance
- DC brushless motor
- Housing equipment
- Industrial equipment

### ■ Package

- SOT-23-3

# S-5741 B Series

## 125°C OPERATION HIGH-WITHSTAND VOLTAGE HIGH-SPEED BIPOLAR HALL EFFECT LATCH IC

This IC, developed by CMOS technology, is a bipolar Hall effect latch IC with high-withstand voltage, high-speed detection and high-accuracy magnetic characteristics.

The output voltage changes when this IC detects the intensity level of magnetic flux density and a polarity change. Using this IC with a magnet makes it possible to detect the rotation status in various devices. This IC includes an output current limit circuit.

High-density mounting is possible by using the small SOT-23-3S package.

Due to its high-accuracy magnetic characteristics, this IC can make operation's dispersion in the system combined with magnet smaller.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- |   |   |
|---|---|
| • Pole detection:                       | Bipolar latch   |
| • Output logic*1:                       | V <sub>OUT</sub> = "L" at S pole detection<br>V <sub>OUT</sub> = "H" at S pole detection        |
| • Output form*1:                        | Nch open-drain output<br>Nch driver + built-in pull-up resistor                                 |
| • Magnetic sensitivity*1:               | B <sub>OP</sub> = 1.8 mT typ.<br>B <sub>OP</sub> = 3.0 mT typ.<br>B <sub>OP</sub> = 6.0 mT typ. |
| • Chopping frequency:                   | f <sub>C</sub> = 500 kHz typ.   |
| • Output delay time:                    | t <sub>D</sub> = 8.0 μs typ.  |
| • Power supply voltage range:           | V <sub>DD</sub> = 3.5 V to 26.0 V   |
| • Built-in regulator                    |   |
| • Built-in output current limit circuit |   |
| • Operation temperature range:          | T <sub>a</sub> = -40°C to +125°C  |
| • Lead-free (Sn 100%), halogen-free     |   |

\*1. The option can be selected.

### ■ Applications

- Home appliance
- DC brushless motor
- Housing equipment
- Industrial equipment

### ■ Package

- SOT-23-3S

# S-5743 A Series

## 125°C OPERATION HIGH-WITHSTAND VOLTAGE HIGH-SPEED BIPOLAR HALL EFFECT LATCH IC

This IC, developed by CMOS technology, is a high-accuracy hall effect latch IC that operates with high temperature and high-withstand voltage.

The output voltage changes when this IC detects the intensity level of magnetic flux density and a polarity change. Using this IC with a magnet makes it possible to detect the rotation status in various devices.

This IC includes an output current limit circuit.

High-density mounting is possible by using the small SOT-23-3S package.

Due to its high-accuracy magnetic characteristics, this IC enables the user to reduce the operational variation in the system.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales office.

### ■ Features

- |   |  |
|---|--|
| • Pole detection:                       | Bipolar latch                                    |
| • Output logic*1:                       | $V_{OUT} = "L"$ at S pole detection              |
|   | $V_{OUT} = "H"$ at S pole detection              |
| • Output form:                          | Nch open-drain output                            |
| • Magnetic sensitivity*1:               | $B_{OP} = 0.5 \text{ mT typ.}$                   |
|   | $B_{OP} = 1.5 \text{ mT typ.}$                   |
|   | $B_{OP} = 2.2 \text{ mT typ.}$                   |
|   | $B_{OP} = 3.0 \text{ mT typ.}$                   |
| • Chopping frequency:                   | $f_C = 500 \text{ kHz typ.}$                     |
| • Output delay time:                    | $t_D = 8.0 \mu\text{s typ.}$                     |
| • Power supply voltage range:           | $V_{DD} = 2.7 \text{ V to } 26.0 \text{ V}$      |
| • Built-in regulator                    |  |
| • Built-in output current limit circuit |  |
| • Operation temperature range:          | $T_a = -40^\circ\text{C to } +125^\circ\text{C}$ |
| • Lead-free (Sn 100%), halogen-free     |  |

\*1. The option can be selected.

### ■ Applications

- Power tool
- Home appliance
- DC brushless motor
- Housing equipment
- Industrial equipment

### ■ Package

- SOT-23-3S

# S-575D B Series

## 125°C OPERATION, HIGH-WITHSTAND VOLTAGE, HIGH-SPEED, OMNIPOLAR DETECTION TYPE HALL EFFECT SWITCH IC

This IC, developed by CMOS technology, is a high-accuracy Hall effect switch IC that operates with high temperature and high-withstand voltage.

The output voltage level changes when this IC detects the intensity level of magnetic flux density. Using this IC with a magnet makes it possible to detect the open / close in various devices.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- Uses a thin (t0.80 mm max.) TSOT-23-3S or ultra-thin (t0.50 mm max.) HSNT-6(2025) package, contributing to the enhancement of the designs of devices
- Contributes to accurate mechanism operation with high-accuracy magnetic characteristics (Refer to "■ Magnetic Characteristics" for details.)
- Contributes to device safe design with a built-in output current limit circuit

### ■ Specifications

- Pole detection: Omnipolar detection
- Output logic\*1: Active "L"  
Active "H"
- Output form\*1: Nch open-drain output  
Nch driver + built-in pull-up resistor (1.2 kΩ typ.)
- Magnetic sensitivity\*1: B<sub>OP</sub> = 3.0 mT typ.  
B<sub>OP</sub> = 6.0 mT typ.  
B<sub>OP</sub> = 10.0 mT typ.  
B<sub>OP</sub> = 15.0 mT typ.
- Chopping frequency: f<sub>C</sub> = 500 kHz typ.
- Output delay time: t<sub>D</sub> = 16.0 μs typ.
- Power supply voltage range\*2: V<sub>DD</sub> = 2.7 V to 26.0 V
- Built-in regulator
- Built-in output current limit circuit
- Operation temperature range: Ta = -40°C to +125°C
- Lead-free (Sn 100%), halogen-free

\*1. The option can be selected.

\*2. V<sub>DD</sub> = 2.7 V to 5.5 V when output form is Nch driver + built-in pull-up resistor (1.2 kΩ typ.)

### ■ Applications

- Home appliance
- Housing equipment
- Industrial equipment

### ■ Packages

- TSOT-23-3S
- HSNT-6(2025)



# S-575S/5N B Series

## 125°C OPERATION, HIGH-WITHSTAND VOLTAGE, HIGH-SPEED, UNIPOLAR DETECTION TYPE HALL EFFECT SWITCH IC

This IC, developed by CMOS technology, is a high-accuracy Hall effect switch IC that operates with high temperature and high-withstand voltage.

The output voltage level changes when this IC detects the intensity level of magnetic flux density. Using this IC with a magnet makes it possible to detect the open / close in various devices.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- Uses a thin (t0.80 mm max.) TSOT-23-3S or ultra-thin (t0.50 mm max.) HSNT-6(2025) package, contributing to the enhancement of the designs of devices
- Contributes to accurate mechanism operation with high-accuracy magnetic characteristics (Refer to "■ Magnetic Characteristics" for details.)
- Contributes to device safe design with a built-in output current limit circuit

### ■ Specifications

- Pole detection: Unipolar detection
- Output logic\*1: Active "L"  
Active "H"
- Output form\*1: Nch open-drain output  
Nch driver + built-in pull-up resistor (1.2 kΩ typ.)
- Magnetic sensitivity\*1:  $B_{OP} = 3.0 \text{ mT typ.}$   
 $B_{OP} = 6.0 \text{ mT typ.}$   
 $B_{OP} = 10.0 \text{ mT typ.}$   
 $B_{OP} = 15.0 \text{ mT typ.}$
- Chopping frequency:  $f_C = 500 \text{ kHz typ.}$
- Output delay time:  $t_D = 8.0 \mu\text{s typ.}$
- Power supply voltage range\*2:  $V_{DD} = 2.7 \text{ V to } 26.0 \text{ V}$
- Built-in regulator
- Built-in output current limit circuit
- Operation temperature range:  $T_a = -40^\circ\text{C to } +125^\circ\text{C}$
- Lead-free (Sn 100%), halogen-free

\*1. The option can be selected.

\*2.  $V_{DD} = 2.7 \text{ V to } 5.5 \text{ V}$  when output form is Nch driver + built-in pull-up resistor (1.2 kΩ typ.)

### ■ Applications

- Home appliance
- Housing equipment
- Industrial equipment

### ■ Packages

- TSOT-23-3S
- HSNT-6(2025)

# S-576B B Series

## 125°C OPERATION, HIGH-WITHSTAND VOLTAGE, HIGH-SPEED, BIPOLAR HALL EFFECT LATCH IC

This IC, developed by CMOS technology, is a high-accuracy Hall effect latch IC that operates with high temperature and high-withstand voltage.

The output voltage level changes when this IC detects the intensity level of magnetic flux density and a polarity change. Using this IC with a magnet makes it possible to detect the rotation status in various devices.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- Uses a thin (t0.80 mm max.) TSOT-23-3S or ultra-thin (t0.50 mm max.) HSNT-6(2025) package, allowing for device miniaturization
- Contributes to reduction of mechanism operation dispersion with high-accuracy magnetic characteristics (Typ. value  $\pm 1.0$  mT) (Refer to "■ Magnetic Characteristics" for details.)
- Contributes to device safe design with a built-in output current limit circuit

### ■ Specifications

- Pole detection: Bipolar latch
- Output logic\*1:  $V_{OUT} = "L"$  at S pole detection  
 $V_{OUT} = "H"$  at S pole detection
- Output form\*1: Nch open-drain output  
Nch driver + built-in pull-up resistor (1.2 k $\Omega$  typ.)
- Magnetic sensitivity\*1:  $B_{OP} = 0.5$  mT typ.  
 $B_{OP} = 2.2$  mT typ.  
 $B_{OP} = 3.0$  mT typ.  
 $B_{OP} = 6.0$  mT typ.  
 $B_{OP} = 10.0$  mT typ.
- Chopping frequency:  $f_C = 500$  kHz typ.
- Output delay time:  $t_D = 8.0$   $\mu$ s typ.
- Power supply voltage range\*2:  $V_{DD} = 2.7$  V to 26.0 V
- Built-in regulator
- Built-in output current limit circuit
- Operation temperature range:  $T_a = -40^\circ\text{C}$  to  $+125^\circ\text{C}$
- Lead-free (Sn 100%), halogen-free

\*1. The option can be selected.

\*2.  $V_{DD} = 2.7$  V to 5.5 V when output form is Nch driver + built-in pull-up resistor (1.2 k $\Omega$  typ.)

### ■ Applications

- DC brushless motor
- Power tool
- Home appliance
- Housing equipment
- Industrial equipment

### ■ Packages

- TSOT-23-3S
- HSNT-6(2025)

# S-576Z B Series

## 125°C OPERATION, HIGH-WITHSTAND VOLTAGE, HIGH-SPEED, ZERO CROSSING LATCH HALL EFFECT IC

This IC, developed by CMOS technology, is a high-accuracy Hall effect IC that operates with high temperature and high-withstand voltage.

The IC switches output voltage level when the IC detects magnetic flux density (magnetic field) polarity changes. The Zero Crossing Latch detection method realizes polarity changes detection with the higher accuracy than the conventional bipolar latch method. Using this IC with a magnet makes it possible to detect the rotation status in various devices.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- Uses a thin (t0.80 mm max.) TSOT-23-3S or ultra-thin (t0.50 mm max.) HSNT-6(2025) package, allowing for device miniaturization
- Contributes to reduction of mechanism operation dispersion through high accuracy detection of magnetic flux density (magnetic field) polarity changes
- Contributes to device safe design with a built-in output current limit circuit

### ■ Specifications

- Pole detection: Zero Crossing Latch detection
- Output logic\*1:  $V_{OUT} = "L"$  at S pole detection  
 $V_{OUT} = "H"$  at S pole detection
- Output form\*1: Nch open-drain output  
Nch driver + built-in pull-up resistor (1.2 kΩ typ.)
- Zero crossing latch point:  $B_Z = 0.0$  mT typ.
- Release point (S pole)\*1:  $B_{RS} = 3.0$  mT typ.  
 $B_{RS} = 6.0$  mT typ.
- Chopping frequency:  $f_C = 500$  kHz typ.
- Output delay time:  $t_D = 8.0$  μs typ.
- Power supply voltage range\*2:  $V_{DD} = 2.7$  V to 26.0 V
- Built-in regulator
- Built-in output current limit circuit
- Operation temperature range:  $T_a = -40^\circ\text{C}$  to  $+125^\circ\text{C}$
- Lead-free (Sn 100%), halogen-free

\*1. The option can be selected.

\*2.  $V_{DD} = 2.7$  V to 5.5 V when output form is Nch driver + built-in pull-up resistor (1.2 kΩ typ.)

### ■ Applications

- DC brushless motor
- Home appliance
- Housing equipment
- Industrial equipment

### ■ Packages

- TSOT-23-3S
- HSNT-6(2025)

# S-576Z R Series

## EXTENDED OPERATION TEMPERATURE RANGE, HIGH-WITHSTAND VOLTAGE, HIGH-SPEED, ZERO CROSSING LATCH HALL EFFECT IC

This IC, developed by CMOS technology, is a high-accuracy Hall effect IC that operates with high-withstand voltage over a wide operation temperature range.

The IC switches output voltage level when the IC detects magnetic flux density (magnetic field) polarity changes. The Zero Crossing Latch detection method realizes polarity changes detection with the higher accuracy than the conventional bipolar latch method. Using this IC with a magnet makes it possible to detect the rotation status in various devices.

ABLIC Inc. offers a "magnetic simulation service" that provides the ideal combination of magnets and our Hall effect ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

For more information regarding our magnetic simulation service, contact our sales representatives.

### ■ Features

- In addition to maintaining the performance of the existing S-576Z B Series, the operation temperature range has been extended (−50°C to +150°C)
- Uses a thin (t0.80 mm max.) TSOT-23-3S package, allowing for device miniaturization
- Contributes to reduction of mechanism operation dispersion through high accuracy detection of magnetic flux density (magnetic field) polarity changes
- Contributes to device safe design with a built-in output current limit circuit

### ■ Specifications

- Pole detection: Zero Crossing Latch detection
- Output logic\*1:  $V_{OUT} = "L"$  at S pole detection  
 $V_{OUT} = "H"$  at S pole detection
- Output form\*1: Nch open-drain output  
Nch driver + built-in pull-up resistor (1.2 kΩ typ.)
- Zero crossing latch point:  $B_Z = 0.0$  mT typ.
- Release point (S pole)\*1:  $B_{RS} = 3.0$  mT typ.  
 $B_{RS} = 6.0$  mT typ.
- Chopping frequency:  $f_C = 500$  kHz typ.
- Output delay time:  $t_D = 8.0$  μs typ.
- Power supply voltage range\*2:  $V_{DD} = 2.7$  V to 26.0 V
- Built-in regulator
- Built-in output current limit circuit
- Operation temperature range:  $T_a = -50^\circ\text{C}$  to  $+150^\circ\text{C}$
- Lead-free (Sn 100%), halogen-free

\*1. The option can be selected.

\*2.  $V_{DD} = 2.7$  V to 5.5 V when output form is Nch driver + built-in pull-up resistor (1.2 kΩ typ.)

### ■ Applications

- Infrastructure equipment
- Outdoor brushless DC motor
- Home appliance
- Housing equipment
- Industrial equipment

### ■ Package

- TSOT-23-3S

# S-5841 Series

## TEMPERATURE SWITCH IC (THERMOSTAT IC)

The S-5841 Series is a temperature switch IC (thermostat IC) which detects the temperature with a temperature accuracy of  $\pm 2.5^{\circ}\text{C}$ . The output inverts when temperature reaches the detection temperature. The S-5841 Series restores the output voltage when the temperature drops to the level of release temperature.

The S-5841 Series operates at the lower power supply voltage of 2.2 V and its current consumption is 10  $\mu\text{A}$  typ. due to CMOS configuration.

A temperature sensor with the negative temperature coefficient, a reference voltage generation circuit, a comparator and a delay circuit are integrated on one chip, and enclosed into the packages SOT-23-5 and SNT-6A.

### ■ Features

- Detection temperature:  $T_{\text{DET}} = +40^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ ,  $+1^{\circ}\text{C}$  step, detection accuracy:  $\pm 2.5^{\circ}\text{C}$
- Low voltage operation:  $V_{\text{DD}} = 2.2 \text{ V min.}$   
(Detection temperature =  $+55^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ ,  $T_{\text{a}} = -40^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ )
- Low current consumption:  $I_{\text{DD}} = 10 \mu\text{A typ.}$  ( $T_{\text{a}} = +25^{\circ}\text{C}$ )
- Hysteresis temperature can be switched in  $0^{\circ}\text{C}$ ,  $2^{\circ}\text{C}$ ,  $4^{\circ}\text{C}$  and  $10^{\circ}\text{C}$ .
- Selectable output logic in active "H" or "L"
- Selectable output form in CMOS or Nch open drain
- Operation temperature range:  $T_{\text{a}} = -40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Lead-free, Sn 100%, halogen-free<sup>\*1</sup>

\*1. Refer to "■ Product Name Structure" for details.

### ■ Applications

- Fan control
- Air conditioning system
- Various electronic devices

### ■ Packages

- SOT-23-5
- SNT-6A

# S-5844A Series

## TEMPERATURE SWITCH IC (THERMOSTAT IC)

The S-5844A Series is a temperature switch IC (thermostat IC) which detects the temperature with a temperature accuracy of  $\pm 2.5^{\circ}\text{C}$ . The output inverts when temperature reaches the detection temperature. The S-5844A Series restores the output voltage when the temperature drops to the level of release temperature.

The S-5844A Series operates at the lower power supply voltage of 1.65 V and its current consumption is 0.18  $\mu\text{A}$  typ. due to CMOS configuration.

A temperature sensor with the negative temperature coefficient, a reference voltage generation circuit and a comparator are integrated on one chip, and enclosed into the packages SOT-23-5 and SNT-4A, and the super-small package HSNT-4 (1010).

### ■ Features

- Detection temperature:  $T_{\text{DET}} = +50^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ ,  $+5^{\circ}\text{C}$  step, detection accuracy:  $\pm 2.5^{\circ}\text{C}$
- Low voltage operation:  $V_{\text{DD}} = 1.65 \text{ V min.}$
- Low current consumption:  $I_{\text{DD}} = 0.18 \mu\text{A typ.}$  ( $T_{\text{a}} = +25^{\circ}\text{C}$ )
- Hysteresis temperature: selectable in  $5^{\circ}\text{C}$ ,  $10^{\circ}\text{C}$ ,  $15^{\circ}\text{C}$  or  $20^{\circ}\text{C}$
- Selectable output logic in active "H" or active "L"
- Selectable output form in CMOS or Nch open-drain
- Operation temperature range:  $T_{\text{a}} = -40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Lead-free (Sn 100%), halogen-free

### ■ Applications

- Fan control
- Air conditioning system
- Mobile phone
- Game console
- Various electronic devices

### ■ Packages

- SOT-23-5
- SNT-4A
- HSNT-4 (1010)

# S-5852A Series

## HIGH-ACCURACY DIGITAL TEMPERATURE SENSOR WITH THERMOSTAT FUNCTION

The S-5852A Series is a high-accuracy digital temperature sensor with thermostat function, which operates in 1.7 V to 3.6 V voltage ranges. The S-5852A Series interfaces with exteriors via I<sup>2</sup>C-bus and operates at 1.0 MHz maximum. The temperature detection signal is output by using the thermostat function which can be set by the I<sup>2</sup>C-bus. Moreover, a substantial reduction in current consumption may be achieved by using the shutdown mode which can be set by the I<sup>2</sup>C-bus.

The operation of the S-5852A Series is explained in the user's manual. Contact our sales representatives for more information.

**Caution** This product is intended to use in general electronic devices such as consumer electronics, office equipment, and communications devices. Before using the product in medical equipment or automobile equipment including car audio, keyless entry and engine control unit, it is imperative to contact our sales representatives.

### ■ Features

- Temperature accuracy, high-accuracy temperature range\*1:  $\pm 0.5^{\circ}\text{C}$  typ. /  $\pm 1.0^{\circ}\text{C}$  max. ( $T_a = 0^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$ )  
 $\pm 0.5^{\circ}\text{C}$  typ. /  $\pm 1.0^{\circ}\text{C}$  max. ( $T_a = +75^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$ )
- Temperature resolution: 0.5°C, 0.25°C, 0.125°C, 0.0625°C  
(Selectable by the resolution register)
- Temperature sample rate: 7 samples / s min.
- Hysteresis width: No hysteresis, 1.5°C, 3.0°C, 6.0°C  
(Selectable by the configuration register)
- Current consumption:  
  Shutdown mode at serial bus non-active:  $I_{DD3} = 0.3 \mu\text{A}$  typ.,  $I_{DD3} = 3.0 \mu\text{A}$  max.  
  Active mode at serial bus non-active:  $I_{DD1} = 40.0 \mu\text{A}$  typ.,  $I_{DD1} = 100.0 \mu\text{A}$  max.
- Operation voltage range: 1.7 V to 3.6 V
- Operation frequency: 1.0 MHz max. ( $V_{DD} = 2.2 \text{ V}$  to  $3.6 \text{ V}$ )  
400 kHz max. ( $V_{DD} = 1.7 \text{ V}$  to  $3.6 \text{ V}$ )
- Thermostat function: Dual trip mode, single trip mode  
(Selectable by the configuration register)
- Noise suppression: Schmitt trigger and noise filter on input pins (SCL, SDA)
- Operation temperature range:  $T_a = -40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Lead-free (Sn 100%), halogen-free

\*1. The option of the high-accuracy temperature range can be selected.

### ■ Applications

- Solid state drive
- Hard disk drive
- Notebook PC, tablet PC
- Refrigerator
- Air conditioning system

### ■ Package

- HSNT-8(2030)

# S-5813A/5814A Series

## CMOS TEMPERATURE SENSOR IC

The S-5813A/5814A Series is a family of high-precision temperature sensor ICs on a single chip with a linear output voltage for temperature changes.

Each chip is composed of a temperature sensor, a constant current circuit, and an operational amplifier.

The operating ambient temperature is from  $-40^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ . These devices have much better linearity than other temperature sensors such as thermistors, and can be used for a wide range of temperature control applications.

### ■ Features

- Temperature accuracy
  - S-5813A Series :  $\pm 5.0^{\circ}\text{C}$  ( $-30^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ )
  - S-5814A Series :  $\pm 2.5^{\circ}\text{C}$  ( $-30^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ )
- Linear output voltage
  - $-11.04\text{ mV}/^{\circ}\text{C}$  typ.
  - $T_a = -30^{\circ}\text{C}$  :  $2.582\text{ V}$  typ.
  - $T_a = +30^{\circ}\text{C}$  :  $1.940\text{ V}$  typ.
  - $T_a = +100^{\circ}\text{C}$  :  $1.145\text{ V}$  typ.
- Nonlinearity
  - $\pm 0.5\%$  typ. ( $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ )
- Wide power supply voltage operation
  - $V_{\text{DD}} = 2.4\text{ V}$  to  $10.0\text{ V}$  ( $+25^{\circ}\text{C}$ )
- Low current consumption
  - $4.0\text{ }\mu\text{A}$  typ. ( $+25^{\circ}\text{C}$ )
- Built-in operational amplifier
- Output voltage referred to  $V_{\text{SS}}$
- Lead-free (Sn 100%), halogen-free

### ■ Applications

- Compensation of high-frequency circuits such as cellular phones and radio equipment
- Compensation of oscillation frequency in crystal oscillator
- LCD contrast compensation
- Compensation of amplifier gain
- Compensation of auto focus circuits
- Temperature detection in battery management
- Overheating prevention for charged batteries or halogen lights

### ■ Package

- SNT-4A



# S-58LM20A Series

## CMOS TEMPERATURE SENSOR IC

The S-58LM20A Series is a high-accuracy temperature sensor IC on a single chip, provides output voltage which is linear against the temperature change.

Each chip consists of a temperature sensor, a constant current circuit, and an operational amplifier.

The operating ambient temperature is from  $-55^{\circ}\text{C}$  to  $130^{\circ}\text{C}$ . This IC has much better linearity than other conventional temperature sensors such as thermistor, it is possible to achieve the extensive application for temperature control.

### ■ Features

- |   |  |
|---|--|
| • Accuracy against temperature                    | $\pm 2.5^{\circ}\text{C}$ ( $-55^{\circ}\text{C}$ to $+130^{\circ}\text{C}$ )  |
| • Linear output voltage                           | $-11.77\text{ mV}/^{\circ}\text{C}$ Typ.<br>$T_a = -30^{\circ}\text{C}$ : 2.205 V Typ.<br>$T_a = +30^{\circ}\text{C}$ : 1.515 V Typ.<br>$T_a = +130^{\circ}\text{C}$ : 0.303 V Typ.        |
| • Nonlinearity                                    | $\pm 0.4\%$ Typ. ( $-20$ to $+80^{\circ}\text{C}$ )  |
| • Operation in wide range of power supply voltage | $V_{\text{DD}} = 2.4$ to $5.5\text{ V}$ ( $-30^{\circ}\text{C}$ to $+130^{\circ}\text{C}$ )<br>$V_{\text{DD}} = 2.7$ to $5.5\text{ V}$ ( $-55^{\circ}\text{C}$ to $+130^{\circ}\text{C}$ ) |
| • Low current consumption                         | $4.5\text{ }\mu\text{A}$ Typ. ( $+25^{\circ}\text{C}$ ) $6.0\text{ }\mu\text{A}$ Max. ( $-55^{\circ}\text{C}$ to $+130^{\circ}\text{C}$ )  |
| • Built-in operational amplifier                  |  |
| • Output voltage referred to $V_{\text{SS}}$      |  |
| • Lead-free, Sn 100%, halogen-free*1              |  |

\*1. Refer to "■ Product Name Structure" for details.

### ■ Applications

- Compensation of high-frequency circuits such as cellular phones and radio equipment
- Compensation of oscillation frequency in crystal oscillator
- LCD contrast compensation
- Compensation of amplifier gain
- Compensation of auto focus circuits
- Temperature detection in battery management
- Overheating prevention for charged batteries or halogen lights

### ■ Package

- SC-82AB
- SNT-4A
- WLP-4B

# S-8110C/8120C Series

## CMOS TEMPERATURE SENSOR IC

The S-8110C/8120C Series is a family of high-precision temperature sensor ICs on a single chip with a linear output voltage for temperature changes.

Each chip is composed of a temperature sensor, a constant current circuit, and an operational amplifier.

It can be used at temperatures ranging from  $-40^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ . These devices have much better linearity than other temperature sensors such as thermistors, and can be used for a wide range of temperature control applications.

### ■ Features

- Temperature accuracy
  - S-8110C Series:  $\pm 5.0^{\circ}\text{C}$  ( $-30^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ )
  - S-8120C Series:  $\pm 2.5^{\circ}\text{C}$  ( $-30^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ )
- Linear output voltage
  - $-8.20\text{ mV}/^{\circ}\text{C}$  typ.
  - $T_a = -30^{\circ}\text{C}$ :  $1.951\text{ V}$  typ.
  - $T_a = +30^{\circ}\text{C}$ :  $1.474\text{ V}$  typ.
  - $T_a = +100^{\circ}\text{C}$ :  $0.882\text{ V}$  typ.
- Nonlinearity
  - $\pm 0.5\%$  typ. ( $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ )
- Wide power supply voltage operation  $V_{\text{DD}} = 2.4\text{ V}$  to  $10.0\text{ V}$
- Low current consumption  $4.5\text{ }\mu\text{A}$  typ. ( $+25^{\circ}\text{C}$ )
- Built-in operational amplifier
- $V_{\text{SS}}$  standard output
- Lead-free, Sn 100%, halogen-free<sup>\*1</sup>

\*1. Refer to “■ Product Name Structure” for details.

### ■ Applications

- Compensation of high-frequency circuits such as cellular phones and radio equipment
- Compensation of oscillation frequency in crystal oscillator
- LCD contrast compensation
- Compensation of amplifier gain
- Compensation of auto focus circuits
- Temperature detection in battery management
- Overheating prevention for charged batteries or halogen lights

### ■ Packages

- SC-82AB
- SNT-4A

# S-585AA

## BUILT-IN ARP FUNCTION 2-WIRE SERIAL E<sup>2</sup>PROM WITH TEMPERATURE SENSOR

This IC is a 2-wire serial E<sup>2</sup>PROM with temperature sensor built in Address Resolution Protocol (ARP) function which operates in 1.7 V to 3.6 V voltage ranges. This IC has the capacity of 4 K-bit and the organization of 2 pages × 256-word × 8-bit. Page write and sequential read are available.

This IC operates with the SMBus and I<sup>2</sup>C-Bus at 1.0 MHz maximum.

A substantial reduction in current consumption may be achieved by using shutdown mode which can be set by the I<sup>2</sup>C-Bus. In addition, the SMBus ARP function is supported; therefore, this IC is optimal for SSDs that communicate over the SMBus.

**Caution** This product is intended to use in general electronic devices such as consumer electronics, office equipment, and communications devices. Before using the product in medical equipment or automobile equipment including car audio, keyless entry and engine control unit, it is imperative to contact our sales representatives.

### ■ Features

#### E<sup>2</sup>PROM block

- Page write: 16 bytes / page
- Sequential read
- Write protect function during low power supply voltage
- Write protect: Individual software data protection for each of four 128-byte blocks
- Endurance: 10<sup>6</sup> cycle / word\*1 (Ta = +25°C)
- Data retention: 100 years (Ta = +25°C)
- Memory capacity: 4 K-bit
- Initial delivery state: FFh

#### Temperature sensor block

- Temperature accuracy: ±0.25°C typ. / ±1.0°C max. (Ta = 0°C to +85°C)  
±0.25°C typ. / ±1.5°C max. (Ta = -40°C to +125°C)
- Temperature sample rate: 8 samples / s min.
- Selectable hysteresis width: No hysteresis, 1.5°C, 3.0°C, 6.0°C

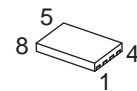
#### Overall

- Support for SMBus ARP function
- Support for Alert Response Address function (ARA)
- Support for Default Slave Address (DSA)
- Current consumption:
  - E<sup>2</sup>PROM in standby mode and temperature sensor in shutdown mode: 3.0 μA max.
  - E<sup>2</sup>PROM in standby mode and temperature sensor in active mode: 0.1 mA max.
  - E<sup>2</sup>PROM in read operation mode and temperature sensor in active mode: 0.4 mA max.
  - E<sup>2</sup>PROM in write operation mode and temperature sensor in active mode: 2.0 mA max.
- Operation voltage range: 1.7 V to 3.6 V
- Operation frequency: 1.0 MHz max. (V<sub>DD</sub> = 2.2 V to 3.6 V)  
400 kHz max. (V<sub>DD</sub> = 1.7 V to 3.6 V)
- Noise suppression: Schmitt trigger and noise filter on input pins (SCL, SDA)
- Operation temperature range: Ta = -40°C to +125°C
- Lead-free (Sn 100%), halogen-free

\*1. For each address (Word: 8-bit)

### ■ Package

- DFN-8(2030)B



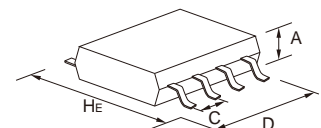
(3.0 × 2.0 × t0.8 mm max.)

## Package List

| Package Type        | Pin Count     | Package Name              | Package Size (mm) |      |          | Pitch (mm) |      |
|---------------------|---------------|---------------------------|-------------------|------|----------|------------|------|
|                     |               |                           | H <sub>E</sub>    | D    | A (max.) | C          |      |
| Lead insertion type | 3             | TO-92                     | 14.5              | 5.2  | 4.2      | 2.5/1.27   |      |
| Flat-lead type      | 3             | SOT-89-3                  | 4.0               | 4.5  | 1.6      | 1.5        |      |
|                     | 5             | SOT-89-5                  | 4.5               | 4.5  | 1.6      | 1.5        |      |
| Gull-wing type      | 4             | SC-82AB                   | 2.1               | 2.0  | 1.1      | 1.3        |      |
|                     | 5             | SC-88A                    | 2.1               | 2.0  | 1.1      | 0.65       |      |
|                     | 3             | SOT-23-3                  | 2.8               | 2.9  | 1.3      | 1.9        |      |
|                     | 3             | SOT-23-3S                 | 2.8               | 2.9  | 1.2      | 1.9        |      |
|                     | 3             | TSOT-23-3S                | 2.85              | 2.9  | 0.8      | 1.9        |      |
|                     | 5             | SOT-23-5                  | 2.8               | 2.9  | 1.3      | 0.95       |      |
|                     | 6             | SOT-23-6                  | 2.8               | 2.9  | 1.35     | 0.95       |      |
|                     | 6             | SOT-23-6W                 | 2.8               | 2.9  | 1.3      | 0.95       |      |
|                     | 8             | 8-Pin SOP (JEDEC)         | 6.0               | 5.02 | 1.75     | 1.27       |      |
|                     | 8             | 8-Pin TSSOP               | 6.4               | 3.0  | 1.1      | 0.65       |      |
|                     | 16            | 16-Pin TSSOP              | 6.4               | 5.1  | 1.1      | 0.65       |      |
|                     | 20            | 20-Pin TSSOP              | 6.4               | 6.5  | 1.2      | 0.65       |      |
|                     | 24            | 24-Pin SSOP               | 7.6               | 7.9  | 1.4      | 0.65       |      |
|                     | 8             | TMSOP-8                   | 4.0               | 2.9  | 0.8      | 0.65       |      |
|                     | 8             | HTMSOP-8                  | 4.0               | 2.9  | 0.8      | 0.65       |      |
|                     | 16            | HTSSOP-16                 | 6.4               | 5.12 | 1.1      | 0.65       |      |
|                     | 6             | HSOP-6                    | 6.0               | 5.02 | 1.75     | 1.91       |      |
|                     | 8             | HSOP-8A                   | 6.0               | 5.02 | 1.68     | 1.27       |      |
|                     | 8             | HSOP-8Q                   | 6.0               | 5.02 | 1.68     | 1.27       |      |
|                     | 5             | TO-252-5S(A)              | 6.5               | 6.5  | 1.4      | 1.27       |      |
|                     | 9             | TO-252-9S                 | 6.5               | 6.5  | 1.4      | 0.65       |      |
|                     | Non-lead type | 6                         | 6-Pin HSON(A)     | 3.0  | 2.9      | 0.9        | 0.95 |
|                     |               | 4                         | SNT-4A            | 1.6  | 1.2      | 0.5        | 0.65 |
|                     |               | 6                         | SNT-6A            | 1.8  | 1.57     | 0.5        | 0.5  |
|                     |               | 6                         | SNT-6A(H)         | 1.8  | 1.57     | 0.5        | 0.5  |
|                     |               | 8                         | SNT-8A            | 2.46 | 1.97     | 0.5        | 0.5  |
| 4                   |               | HSNT-4(0808)              | 0.8               | 0.8  | 0.4      | 0.4        |      |
| 4                   |               | HSNT-4(0808)B             | 0.8               | 0.8  | 0.41     | 0.4        |      |
| 4                   |               | HSNT-4(1010)              | 1.0               | 1.0  | 0.4      | 0.65       |      |
| 4                   |               | HSNT-4(1010)B             | 1.0               | 1.0  | 0.41     | 0.65       |      |
| 6                   |               | HSNT-6A                   | 2.46              | 1.96 | 0.5      | 0.5        |      |
| 6                   |               | HSNT-6(1212)              | 1.2               | 1.2  | 0.4      | 0.4        |      |
| 6                   |               | HSNT-6D<br>(HSNT-6(1618)) | 1.8               | 1.6  | 0.4      | 0.5        |      |
| 6                   |               | HSNT-6(2025)              | 2.46              | 1.96 | 0.5      | 0.5        |      |
| 8                   |               | HSNT-8(1616)              | 1.6               | 1.6  | 0.4      | 0.4        |      |
| 8                   |               | HSNT-8(1616)B             | 1.6               | 1.6  | 0.41     | 0.4        |      |
| 8                   |               | HSNT-8(2030)              | 3.0               | 2.0  | 0.5      | 0.5        |      |
| 6                   |               | DFN-6(1414)A              | 1.4               | 1.4  | 0.6      | 0.5        |      |
| 6                   |               | DFN-6(1518)A              | 1.8               | 1.5  | 0.33     | 0.5        |      |
| 8                   |               | DFN-8(1616)A              | 1.6               | 1.6  | 0.6      | 0.4        |      |
| 8                   |               | DFN-8(2020)A              | 2.0               | 2.0  | 0.6      | 0.5        |      |
| 8                   |               | DFN-8(2030)               | 3.0               | 2.0  | 0.5      | 0.5        |      |
| 8                   |               | DFN-8(2030)A              | 3.0               | 2.0  | 0.6      | 0.5        |      |
| 8                   |               | DFN-8(2030)B              | 3.0               | 2.0  | 0.8      | 0.5        |      |

Remarks 1. For more details, please refer to our website. [Package List on ablic.com](http://Package List on ablic.com)

2. Please contact our sales representatives regarding WLP package products.



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