Product Catalog

Automotive ICs (Memory ICs, Magnetic sensor ICs, Amplifiers, Timer ICs)
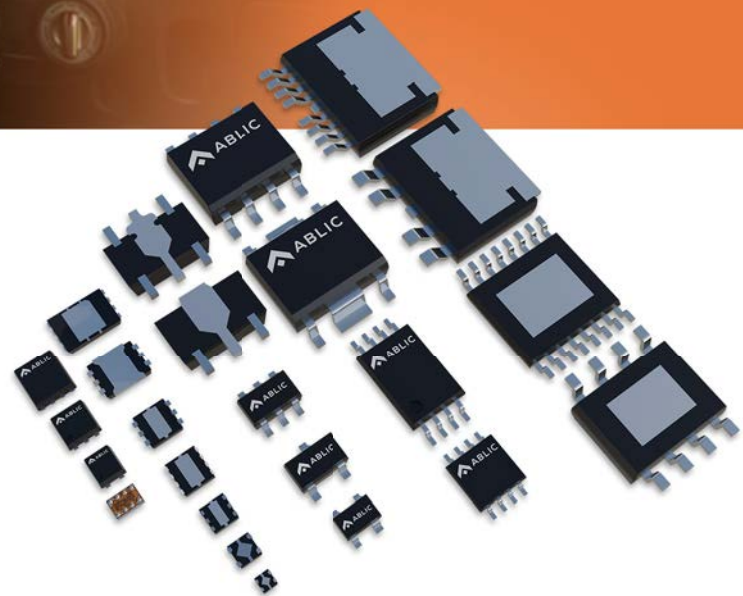
2025

ABLIC Inc.

Table of Contents

Automotive Serial EEPROMs (SPI, I²C, Microwire)

Automotive Serial EEPROMs (SPI, I²C, Microwire) on ablic.com

Series Name	Interface	Density [bit]	Operating voltage min. [V]	Operating voltage max. [V]	Clock frequency max. [MHz]	Write time max. [ms]	Endurance (85°C)	Data retention [years]	Operation temp. min. [°C]	Operation temp. max. [°C]	Package	Page
S-25A010A/020A/040A	SPI bus	1 K, 2 K, 4 K	2.50	5.50	6.50	4.0	1 million	50	-40	125	8-pin SOP, 8-pin TSSOP, TMSOP-8	1
S-25A080A/160A/320A, S-25A080B/160B/320B	SPI bus	8 K, 16K, 32K	2.50	5.50	6.50	4.0, 5.0	0.7 million, 1 million	50	-40	125	8-pin SOP, 8-pin TSSOP, TMSOP-8	2
S-25A640A/640B	SPI bus	64K	2.50	5.50	5.00, 6.50	4.0, 5.0	0.7 million, 1 million	50	-40	125	8-pin SOP, 8-pin TSSOP, TMSOP-8	3
S-25A128B	SPI bus	128K	2.50	5.50	6.50	5.0	0.7 million	50	-40	125	8-pin SOP, 8-pin TSSOP	4
S-25A256B	SPI bus	256K	2.50	5.50	5.00	5.0	0.7 million	50	-40	125	8-pin SOP	5
S-25C010A/020A/040A H	SPI bus	1 K, 2 K, 4 K	2.50	5.50	6.50	4.0	1 million	50	-40	105	8-pin SOP, 8-pin TSSOP, TMSOP-8	6
S-25C080A0H	SPI bus	8 K	2.50	5.50	6.50	4.0	1 million	50	-40	105	8-pin SOP, 8-pin TSSOP	7
S-25C160A0H	SPI bus	16K	2.50	5.50	5.00	5.0	0.3 million	25	-40	105	8-pin SOP, 8-pin TSSOP, TMSOP-8	8
S-25C320A/640A H	SPI bus	32K, 64K	2.50	5.50	5.00	5.0	0.3 million	25	-40	105	8-pin SOP, 8-pin TSSOP, TMSOP-8	9
S-25C128A0H	SPI bus	128K	2.50	5.50	5.00	5.0	0.3 million	25	-40	105	8-pin SOP, 8-pin TSSOP	10
S-24CS01A/02A/04A H	2-wire (I²C)	1 K, 2 K, 4 K	2.55	5.50	0.35	10.0	1 million	20	-40	105	8-pin SOP, 8-pin TSSOP, TMSOP-8	11
S-24C08CH	2-wire (I²C)	8 K	2.50	5.50	0.40	5.0	0.3 million	25	-40	105	8-pin SOP, 8-pin TSSOP, TMSOP-8	12
S-24C16CH	2-wire (I²C)	16K	2.50	5.50	0.40	5.0	0.3 million	25	-40	105	8-pin SOP, 8-pin TSSOP, TMSOP-8	13
S-24C32C/64C H	2-wire (I²C)	32K, 64K	2.50	5.50	0.40	5.0	0.3 million	25	-40	105	8-pin SOP, 8-pin TSSOP, TMSOP-8	14
S-24C128CH	2-wire (I²C)	128K	2.50	5.50	0.40	5.0	0.3 million	25	-40	105	8-pin SOP, 8-pin TSSOP	15
S-93S46A/56A/66A	3-wire (Microwire)	1 K, 2 K, 4 K	4.00	5.50	1.00	10.0	1 million	20	-40	150	8-pin SOP	16
S-93A46B/56B/66B/76B/86B	3-wire (Microwire)	1 K, 2 K, 4 K, 8 K, 16K	2.50	5.50	2.00	4.0	1 million	50	-40	125	8-pin SOP, 8-pin TSSOP, TMSOP-8, HSNT-8(2030)	17
S-93C46C/56C/66C/76C/86C H	3-wire (Microwire)	1 K, 2 K, 4 K, 8 K, 16K	1.60	5.50	2.00	4.0	1 million	50	-40	105	8-pin SOP, 8-pin TSSOP, TMSOP-8, HSNT-8(2030)	18

Automotive Magnetic sensor ICs (Hall effect ICs)

Automotive Magnetic sensor ICs (Hall effect ICs) 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
S-57TZ S	ZCL	8	500	2.7	26.0	-	-40	150	TSOT-23-3S, HSNT-6(2025)	19
S-57RB S	Bipolar	8	500	2.7	26.0	0.5, 2.2, 3.0, 6.0, 10.0	-40	150	TSOT-23-3S, HSNT-6(2025)	20
S-57P1 S	Bipolar	8	500	2.7	26.0	0.5, 1.5, 2.2, 3.0	-40	150	SOT-23-3S	21
S-57K1 A	Bipolar	8	500	3.5	26.0	3.0, 6.0	-40	125	SOT-23-3	22
S-57GS/GN S	S pole, N pole	8	500	2.7	26.0	3.0, 6.0, 10.0, 15.0	-40	150	TSOT-23-3S, HSNT-6(2025)	23
S-57GD S	Omnipolar	16	500	2.7	26.0	3.0, 6.0, 10.0, 15.0	-40	150	TSOT-23-3S, HSNT-6(2025)	24
S-57A1 A	S pole, N pole	16	250	3.5	26.0	3.0, 6.0	-40	125	SOT-23-3	25

Automotive Real-time Clock (RTC)

Series Name	Features	Interface	Current consumption (3.0V, 25°C) [µA]	Operation voltage min. [V]	Operation voltage max. [V]	Operation temp. min. [°C]	Operation temp. max. [°C]	Package	Page
S-35190A H	Clock correction, free user register	3-wire	0.25	1.3	5.5	-40	105	8-Pin SOP, 8-Pin TSSOP	26
S-35390A H	Clock correction, free user register	2-wire	0.25	1.3	5.5	-40	105	8-Pin SOP, 8-Pin TSSOP	27

Automotive Convenience Timer

Series Name	Features	Quartz Crystal	Current consumption typ. [µA]	Operating voltage min. [V]	Operating voltage max. [V]	Operation temp. min. [°C]	Operation temp. max. [°C]	Package	Page
S-35710 A	2-wire (I^{2}C-bus)	External	0.20	1.8	5.5	-40	125	TMSOP-8	28
S-35710M A	Built-in Quartz Crystal, 2-wire (I^{2}C-bus)	Built-in	0.25	1.8	5.5	-40	125	HSOP-8Q	29
S-35720 A	With interrupt time setting pin	External	0.20	1.8	5.5	-40	125	TMSOP-8	30
S-35730 A	Clock pulse output with frequency setting pin	External	0.70	1.8	5.5	-40	125	TMSOP-8	31
S-35740 A	2-wire (I^{2}C-bus) interval timer	External	0.20	1.8	5.5	-40	125	TMSOP-8	32
S-35770 A	2-wire (I^{2}C-bus) counter	-	0.01	1.5	5.5	-40	125	TMSOP-8	33

Automotive Operational Amplifiers

Series Name	Features	Number of circuits	Input Rail-to-Rail	Operating voltage min. [V]	Operating voltage max. [V]	Current consumption (per circuit) [µA]	Input offset voltage max. [mV] (All temp.)	Input offset voltage drift [µV/°C]	Gain bandwidth product [kHz]	Slew rate [V/µs]	Operation temp. min. [°C]	Operation temp. max. [°C]	Package	Page
S-19630A	High-withstand voltage, High-accuracy, Zero-drift amplifier, Rail-to-Rail	2 circuits	Yes	4.00	36.00	250	0.05	0.025	1200	0.45	-40	125	TMSOP-8	34
S-19611A	Low voltage operation, Zero-drift amplifier, Rail-to-Rail	2 circuits	Yes	2.65	5.50	200	0.10	0.100	320	0.22	-40	105	TMSOP-8	35
S-19610A		2 circuits	-	2.70	5.50	1000	6.00	3.000	3000	2.00	-40	125	TMSOP-8	36

S-25A010A/020A/040A

FOR AUTOMOTIVE 125°C OPERATION
SPI SERIAL E^{2}PROM

This IC is a SPI serial E^{2}PROM which operates under the high temperature, at high speed, with the wide range operation for automotive components. This IC has the capacity of 1 K-bit, 2 K-bit, 4 K-bit and the organization of 128 words × 8-bit, 256 words × 8-bit, 512 words × 8-bit. Page write and Sequential read are available.

Caution　**Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.**

■ Features

- Operating voltage range
    - Read:　　　　　　　　　　2.5 V to 5.5 V
    - Write:　　　　　　　　　　2.5 V to 5.5 V
- Operation frequency:　　　　6.5 MHz max.
- Write time:　　　　　　　　4.0 ms max.
- SPI mode (0, 0) and (1, 1)
- Page write:　　　　　　　　16 bytes / page
- Sequential read
- Write protect:　　　　　　　Software, Hardware
    - Protect area:　　　　　　25%, 50%, 100%
- Monitoring of a write memory state by the status register
- Function to prevent malfunction by monitoring clock pulse
- Write protect function during the low power supply voltage
- CMOS schmitt input ($\overline{CS}$, SCK, SI, $\overline{WP}$, $\overline{HOLD}$)
- Endurance[*1]:　　　　　　　10^6 cycle / word[*2] (Ta = +25°C)
    　　　　　　　　　　　　5×10^5 cycle / word[*2] (Ta = +125°C)
- Data retention:　　　　　　100 years　(Ta = +25°C)
    　　　　　　　　　　　　 50 years　(Ta = +125°C)
- Memory capacity
    - S-25A010A:　　　　　　 1 K-bit
    - S-25A020A:　　　　　　 2 K-bit
    - S-25A040A:　　　　　　 4 K-bit
- Initial delivery state:　　　　FFh, BP1 = 0, BP0 = 0
- Burn-in specification:　　　　Wafer level burn-in
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free[*3]
- AEC-Q100 qualified[*4]

*1.　Refer to "■ **Endurance**" for details.
*2.　For each address (Word: 8-bit)
*3.　Refer to "■ **Product Name Structure**" for details.
*4.　Contact our sales office for details.

Remark　Refer to "**3.　Product name list**" in "■ **Product Name Structure**" for details of package and product.

■ Packages

- 8-Pin SOP (JEDEC)

(5.0 × 6.0 × t1.75 mm)

- 8-Pin TSSOP

(3.0 × 6.4 × t1.1 mm)

- TMSOP-8

(2.9 × 4.0 × t0.8 mm)

ABLIC Inc.
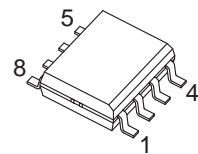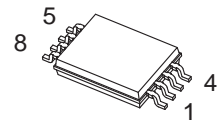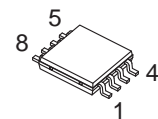
S-25A080A/160A/320A, S-25A080B/160B/320B

FOR AUTOMOTIVE 125°C OPERATION
SPI SERIAL E²PROM

This IC is a SPI serial E²PROM which operates under the high temperature, at high speed, with the wide range operation for automotive components. This IC has the capacity of 8 K-bit, 16 K-bit, 32 K-bit and the organization of 1024 words × 8-bit, 2048 words × 8-bit, 4096 words × 8-bit. Page write and Sequential read are available.

Caution   Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.

■ Features

- Operating voltage range
  - Read: 2.5 V ~ 5.5 V
  - Write: 2.5 V ~ 5.5 V
- Operation frequency: 6.5 MHz max.
- Write time
  - S-25A080A/160A/320A: 4.0 ms max.
  - S-25A080B/160B/320B: 5.0 ms max.
- SPI mode (0, 0) and (1, 1)
- Page write: 32 bytes / page
- Sequential read
- Write protect: Software, Hardware
  - Protect area: 25%, 50%, 100%
- Monitoring of a write memory state by the status register
- Function to prevent malfunction by monitoring clock pulse
- Write protect function during the low power supply voltage
- CMOS schmitt input ($\overline{\text{CS}}$, SCK, SI, $\overline{\text{WP}}$, $\overline{\text{HOLD}}$)
- Endurance[1]
  - S-25A080A/160A/320A: 10^6 cycle / word[2] (Ta = +25°C)
    - 5×10^5 cycle / word[2] (Ta = +125°C)
  - S-25A080B/160B/320B: 10^6 cycle / word[2] (Ta = +25°C)
    - 3×10^5 cycle / word[2] (Ta = +125°C)
- Data retention: 100 years (Ta = +25°C)
  - 50 years (Ta = +125°C)
- Memory capacity
  - S-25A080A, S-25A080B: 8 K-bit
  - S-25A160A, S-25A160B: 16 K-bit
  - S-25A320A, S-25A320B: 32 K-bit
- Initial delivery state: FFh, SRWD = 0, BP1 = 0, BP0 = 0
- Burn-in specification: Wafer level burn-in
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free[3]
- AEC-Q100 qualified[4]

*1.   Refer to "■ **Endurance**" for details.
*2.   For each address (Word: 8-bit)
***3.**   Refer to "■ **Product Name Structure**" for details.
*4.   Contact our sales office for details.

   **Remark**   Refer to "**3.   Product name list**" in "■ **Product Name Structure**" for details of package and product.

■ Packages

- 8-Pin SOP (JEDEC)

(5.0 × 6.0 × t1.75 mm)

- 8-Pin TSSOP

(3.0 × 6.4 × t1.1 mm)

- TMSOP-8

(2.9 × 4.0 × t0.8 mm)

ABLIC Inc.
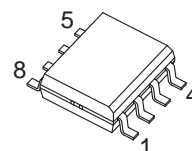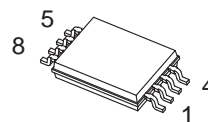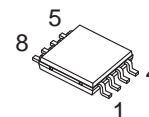
S-25A640A, S-25A640B

FOR AUTOMOTIVE 125°C OPERATION
SPI SERIAL E²PROM

This IC is a SPI serial E²PROM which operates under the high temperature, at high speed, with the wide range operation for automotive components. This IC has the capacity of 64 K-bit and the organization of 8192 words × 8-bit. Page write and Sequential read are available.

Caution **Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.**

■ Features

- Operating voltage range
  - Read: 2.5 V ~ 5.5 V
  - Write: 2.5 V ~ 5.5 V
- Operation frequency
  - S-25A640A: 5.0 MHz max.
  - S-25A640B: 6.5 MHz max.
- Write time
  - S-25A640A: 4.0 ms max.
  - S-25A640B: 5.0 ms max.
- SPI mode (0, 0) and (1, 1)
- Page write: 32 bytes / page
- Sequential read
- Write protect: Software, Hardware
  - Protect area: 25%, 50%, 100%
- Monitoring of a write memory state by the status register
- Function to prevent malfunction by monitoring clock pulse
- Write protect function during the low power supply voltage
- CMOS schmitt input ($\overline{CS}$, SCK, SI, $\overline{WP}$, $\overline{HOLD}$)
- Endurance[1]
  - S-25A640A: 10^6 cycle / word[2] (Ta = +25°C)
    - 5×10^5 cycle / word[2] (Ta = +125°C)
  - S-25A640B: 10^6 cycle / word[2] (Ta = +25°C)
    - 3×10^5 cycle / word[2] (Ta = +125°C)
- Data retention: 100 years (Ta = +25°C)
  - 50 years (Ta = +125°C)
- Memory capacity: 64 K-bit
- Initial delivery state: FFh, SRWD = 0, BP1 = 0, BP0 = 0
- Burn-in specification: Wafer level burn-in
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free[3]
- AEC-Q100 qualified[4]

*1. Refer to "■ **Endurance**" for details.
*2. For each address (Word: 8-bit)
*3. Refer to "■ **Product Name Structure**" for details.
*4. Contact our sales office for details.

Remark Refer to "**3. Product name list**" in "■ **Product Name Structure**" for details of package and product.

■ Packages

- 8-Pin SOP (JEDEC)

(5.0 × 6.0 × t1.75 mm)

- 8-Pin TSSOP

(3.0 × 6.4 × t1.1 mm)

- TMSOP-8

(2.9 × 4.0 × t0.8 mm)

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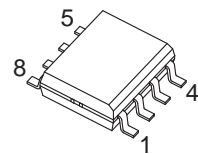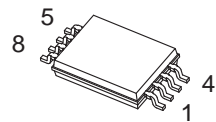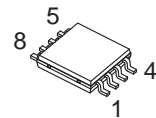
S-25A128B

FOR AUTOMOTIVE 125°C OPERATION
SPI SERIAL E^{2}PROM

This IC is a SPI serial E^{2}PROM which operates under the high temperature, at high speed, with the wide range operation for automotive components. This IC has the capacity of 128 K-bit and the organization of 16384 words × 8-bit. Page write and Sequential read are available.

Caution   Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.

■ Features

- Operating voltage range
  - Read: 2.5 V ~ 5.5 V
  - Write: 2.5 V ~ 5.5 V
- Operation frequency: 6.5 MHz max.
- Write time: 5.0 ms max.
- SPI mode (0, 0) and (1, 1)
- Page write: 64 bytes / page
- Sequential read
- Write protect: Software, Hardware
  - Protect area: 25%, 50%, 100%
- Monitoring of a write memory state by the status register
- Function to prevent malfunction by monitoring clock pulse
- Write protect function during the low power supply voltage
- CMOS schmitt input ($\overline{CS}$, SCK, SI, $\overline{WP}$, $\overline{HOLD}$)
- Endurance[1]: 10^6 cycle / word[2] (Ta = +25°C)
                                3×10^5 cycle / word[2] (Ta = +125°C)
- Data retention: 100 years (Ta = +25°C)
                                 50 years (Ta = +125°C)
- Memory capacity: 128 K-bit
- Initial delivery state: FFh, SRWD = 0, BP1 = 0, BP0 = 0
- Burn-in specifications: Wafer level burn-in
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free[3]
- AEC-Q100 qualified[4]

[1].   Refer to "■ **Endurance**" for details.
[2].   For each address (Word: 8-bit)
[3].   Refer to "■ **Product Name Structure**" for details.
[4].   Contact our sales office for details.

Remark   Refer to "**3.   Product name list**" in "■ **Product Name Structure**" for details of package and product.

■ Packages

- 8-Pin SOP (JEDEC)

(5.0 × 6.0 × t1.75 mm)

- 8-Pin TSSOP

(3.0 × 6.4 × t1.1 mm)

ABLIC Inc.
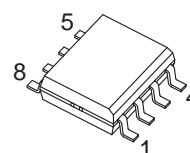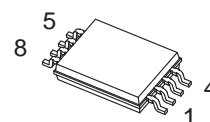
S-25A256B

FOR AUTOMOTIVE 125°C OPERATION
SPI SERIAL E^{2}PROM

This IC is a SPI serial E^{2}PROM which operates under the high temperature, at high speed, with the wide range operation for automotive components. This IC has the capacity of 256 K-bit and the organization of 32768 words × 8-bit. Page write and Sequential read are available.

Caution   **Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.**

■ Features

- Operating voltage range
    - Read: 2.5 V ~ 5.5 V
    - Write: 2.5 V ~ 5.5 V
- Operation frequency: 5.0 MHz max.
- Write time: 5.0 ms max.
- SPI mode (0, 0) and (1, 1)
- Page write: 64 bytes / page
- Sequential read
- Write protect: Software, Hardware
    - Protect area: 25%, 50%, 100%
- Monitoring of a write memory state by the status register
- Function to prevent malfunction by monitoring clock pulse
- Write protect function during the low power supply voltage
- CMOS schmitt input ($\overline{CS}$, SCK, SI, $\overline{WP}$, $\overline{HOLD}$)
- Endurance[1]: 10^6 cycle / word [2] (Ta = +25°C)
                              3×10^5 cycle / word [2] (Ta = +125°C)
- Data retention: 100 years (Ta = +25°C)
                               50 years (Ta = +125°C)
- Memory capacity: 256 K-bit
- Initial delivery state: FFh, SRWD = 0, BP1 = 0, BP0 = 0
- Burn-in specifications: Wafer level burn-in
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free[3]
- AEC-Q100 qualified[4]

[1].   Refer to "■ **Endurance**" for details.
**[2].**   For each address (Word: 8-bit)
[3].   Refer to "■ **Product Name Structure**" for details.
[4].   Contact our sales office for details.

Remark   Refer to "**3.   Product name list**" in "■ **Product Name Structure**" for details of package and product.

■ Package

- 8-Pin SOP (JEDEC)
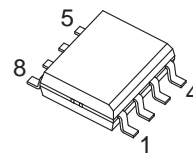
(5.0 × 6.0 × t1.75 mm)

S-25C010A/020A/040A H Series

105°C OPERATION
SPI SERIAL E^{2}PROM FOR AUTOMOTIVE

The S-25C010A/020A/040A H series devices are high-temperature operation SPI serial E^{2}PROMs for automotive components. The S-25C010A/020A/040A H series has the capacity of 1 K-bit, 2 K-bit, and 4 K-bit, and the organization is 128 words × 8-bit, 256 words × 8- bit, and 512 words × 8-bit, respectively.
Page write and sequential read are available.

Caution   **Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.**

■ Features

- Operating voltage range: Read   2.5 V to 5.5 V
                                  Write   2.5 V to 5.5 V
- Operation frequency: 6.5 MHz (4.5 V to 5.5 V)
- Write time: 4.0 ms max.
- SPI mode (0, 0) and (1, 1)
- Page write: 16 bytes / page
- Sequential read
- Monitors write to the memory by a status register
- Write protect: Software, Hardware
  Protect area: 25%, 50%, 100%
- Function to prevent malfunction by monitoring clock pulse
- Write protect function during the low power supply voltage
- CMOS schmitt input ($\overline{CS}$, SCK, SI, $\overline{WP}$, $\overline{HOLD}$)
- Endurance: 10^6 cycles/word[1] (Ta = +85°C)
                    8×10^5 cycles/word[1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
                        50 years (Ta = +105°C)
- Memory capacitance: S-25C010A   1 K-bit
                            S-25C020A   2 K-bit
                            S-25C040A   4 K-bit
- Initial delivery state: FFh, BP1 = 0, BP0 = 0
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[2]

   [1]. For each address (Word: 8-bit)
   [2]. Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP
- TMSOP-8

ABLIC Inc.

S-25C080A H Series

105°C OPERATION
SPI SERIAL E²PROM FOR AUTOMOTIVE

The S-25C080A H series devices are high-temperature operation SPI serial E²PROMs for automotive components.
The S-25C080A H series has the capacity of 8 K-bit and the organization is 1024 words × 8-bit. Page write and sequential read are available.

Caution **Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.**

■ Features

- Operating voltage range: Read   2.5 V to 5.5 V
           Write   2.5 V to 5.5 V
- Operation frequency: 6.5 MHz (4.5 V to 5.5 V)
- Write time: 4.0 ms max.
- SPI mode (0, 0) and (1, 1)
- Page write   32 bytes / page
- Sequential read
- Monitors write to the memory by a status register
- Write protect: Software, Hardware
- Protect area: 25%, 50%, 100%
- Function to prevent malfunction by monitoring clock pulse
- Write protect function during the low power supply voltage
- CMOS schmitt input ($\overline{CS}$, SCK, SI, $\overline{WP}$, $\overline{HOLD}$)
- Endurance: 10^6 cycles/word[1] (Ta = +85°C)
           8×10^5 cycles/word[1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
           50 years (Ta = +105°C)
- Memory capacitance: 8 K-bit
- Initial delivery state: FFh, SRWD = 0, BP1 = 0, BP0 = 0
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[2]

  [1]. For each address (Word: 8-bit)
  [2]. Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP

ABLIC Inc.

S-25C160A H Series

105°C OPERATION
SPI SERIAL E²PROM FOR AUTOMOTIVE

The S-25C160A H series devices are high-temperature operation SPI serial E²PROMs for automotive components. The S-25C160A H series has the capacity of 16 K-bit and the organization of 2048 words × 8-bit. Page write and sequential read are available.

Caution   Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.

■ Features

- Operating voltage range: Read   2.5 V to 5.5 V
                                   Write   2.5 V to 5.5 V
- Operation frequency: 5.0 MHz (2.5 V to 5.5 V)
- Write time: 5.0 ms max.
- SPI mode (0, 0) and (1, 1)
- Page write: 32 bytes / page
- Sequential read
- Monitors write to the memory by a status register
- Write protect: Software, Hardware
  Protect area: 25%, 50%, 100%
- Function to prevent malfunction by monitoring clock pulse
- Write protect function during the low power supply voltage
- CMOS schmitt input ($\overline{CS}$, SCK, SI, $\overline{WP}$, $\overline{HOLD}$)
- Endurance: 10^6 cycles/word[1] (Ta = +25°C)
                               3×10^5 cycles/word[1] (Ta = +85°C)
                               2×10^5 cycles/word[1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
                               30 years (Ta = +85°C)
                               25 years (Ta = +105°C)
- Memory capacitance: 16 K-bit
- Initial delivery state: FFh, SRWD = 0, BP1 = 0, BP0 = 0
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[2]

  [1]. For each address (Word: 8-bit)
  [2]. Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP
- TMSOP-8

ABLIC Inc.

S-25C320A/640A H Series

105°C OPERATION
SPI SERIAL E²PROM FOR AUTOMOTIVE

The S-25C320A/640A H series devices are high-temperature operation SPI serial E²PROMs for automotive components. The S-25C320A/640A H series has the capacity of 32 K-bit and 64 K-bit, and the organization is 4096 words $\times$ 8-bit, 8192 words $\times$ 8-bit, respectively.
Page write and sequential read are available.

Caution   Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.

■ Features

- Operating voltage range: Read   2.5 V to 5.5 V
                                                Write   2.5 V to 5.5 V
- Operation frequency: 5.0 MHz (2.5 V to 5.5 V)
- Write time: 5.0 ms max.
- SPI mode (0, 0) and (1, 1)
- Page write   32 bytes / page
- Sequential read
- Monitors write to the memory by a status register
- Write protect: Software, Hardware
  Protect area: 25%, 50%, 100%
- Function to prevent malfunction by monitoring clock pulse
- Write protect function during the low power supply voltage
- CMOS schmitt input ($\overline{CS}$, SCK, SI, $\overline{WP}$, $\overline{HOLD}$)
- Endurance: 10^6 cycles/word[1] (Ta = +25°C)
                                             3×10^5 cycles/word[1] (Ta = +85°C)
                                             2×10^5 cycles/word[1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
                                             30 years (Ta = +85°C)
                                             25 years (Ta = +105°C)
- Memory capacitance: S-25C320A   32 K-bit
                                             S-25C640A   64 K-bit
- Initial delivery state: FFh, SRWD = 0, BP1 = 0, BP0 = 0
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[2]

  [1]. For each address (Word: 8-bit)
  [2]. Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP
- TMSOP-8

S-25C128A H Series

105°C OPERATION
SPI SERIAL E^{2}PROM FOR AUTOMOTIVE

The S-25C128A H series devices are high-temperature operation SPI serial E^{2}PROMs for automotive components.
The S-25C128A H series has the capacity of 128 K-bit and the organization of 16384 words × 8-bit. Page write and sequential read are available.

Caution Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.

■ Features

- Operating voltage range: Read 2.5 V to 5.5 V
  Write 2.5 V to 5.5 V
- Operation frequency: 5.0 MHz (2.5 V to 5.5 V)
- Write time: 5.0 ms max.
- SPI mode (0, 0) and (1, 1)
- Page write: 64 bytes / page
- Sequential read
- Monitors write to the memory by a status register
- Write protect: Software, Hardware
  Protect area: 25%, 50%, 100%
- Function to prevent malfunction by monitoring clock pulse
- Write protect function during the low power supply voltage
- CMOS schmitt input ($\overline{\text{CS}}$, SCK, SI, $\overline{\text{WP}}$, $\overline{\text{HOLD}}$)
- Endurance: 10^6 cycles/word[1] (Ta = +25°C)
  3×10^5 cycles/word[1] (Ta = +85°C)
  2×10^5 cycles/word[1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
  30 years (Ta = +85°C)
  25 years (Ta = +105°C)
- Memory capacitance: 128 K-bit
- Initial delivery state: FFh, SRWD = 0, BP1 = 0, BP0 = 0
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[2]

  [1]. For each address (Word: 8-bit)
  [2]. Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP

S-24CS01A/02A/04A H Series

FOR AUTOMOTIVE 105°C OPERATION
2-WIRE SERIAL E²PROM

The S-24CS01A/02A/04A H series is a high temperature operation 2-wire serial E²PROM for automotive components. The S-24CS01A/02A/04A H series has the capacity of 1 K-bit, 2 K-bit and 4 K-bit, and the organization is 128 words × 8 bits, 256 words × 8 bits and 512 words × 8 bits.
Page write and sequential read are available.

Caution **Before using the product in automobile control unit or medical equipment, it is imperative to contact our sales representatives.**

■ Features

- Operating voltage range: Read   2.55 V to 5.5 V (Ta = −40°C to +105°C)
                               Write   2.55 V to 5.5 V (Ta = −40°C to +105°C)
- Page write: 8 bytes / page (S-24CS01A/02A)
                               16 bytes / page (S-24CS04A)
- Sequential read
- Operating Frequency: 400 kHz (V$_{CC}$ = 2.55 V to 5.5 V, Ta = −40°C to +85°C)
                               350 kHz (V$_{CC}$ = 2.55 V to 5.5 V, Ta = +85°C to +105°C)
- Write time: 10.0 ms max.
- Write protect function during the low power supply voltage
- Endurance: 10^6 cycles/word[*1] (Ta = +85°C)
                               5×10^5 cycles/word[*1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
                               20 years (Ta = +105°C)
- Memory capacity: S-24CS01A   1 Kbit
                               S-24CS02A   2 Kbit
                               S-24CS04A   4 Kbit
- Write protect: 100%
- Initial delivery state: FFh
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free

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

■ Packages

- 8-Pin SOP(JEDEC)
- 8-Pin TSSOP
- TMSOP-8

S-24C08C H Series

FOR AUTOMOTIVE 105°C OPERATION
2-WIRE SERIAL E²PROM

The S-24C08C H series is a high temperature operation 2-wire serial E²PROMs for automotive components. The S-24C08C H series has the capacity of 8 K-bit, and the organization is 1024 words × 8-bit. Page write and sequential read are available.

Caution Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.

■ Features

- Operation voltage range: Read   2.5 V to 5.5 V
                             Write   2.5 V to 5.5 V
- Page write: 16 bytes / page
- Sequential read
- Operation frequency: 400 kHz (V_{CC} = 2.5 V to 5.5 V)
- Write time: 5.0 ms max.
- Noise suppression: Schmitt trigger and noise filter on input pins (SCL, SDA)
- Write protect function during the low power supply voltage
- Endurance: 10^6 cycles / word[*1] (Ta = +25°C)
              3×10^5 cycles / word[*1] (Ta = +85°C)
              2×10^5 cycles / word[*1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
                   30 years (Ta = +85°C)
                   25 years (Ta = +105°C)
- Memory capacity: 8 K-bit
- Write protect: 100%
- Initial delivery state: FFh
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[*2]

  ***1.** For each address (Word: 8-bit)
  ***2.** Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP
- TMSOP-8

ABLIC Inc.

S-24C16C H Series

FOR AUTOMOTIVE 105°C OPERATION
2-WIRE SERIAL E^{2}PROM

The S-24C16C H series is a high temperature operation 2-wire serial E^{2}PROM for automotive components. The S-24C16C H series has the capacity of 16 K-bit, and the organization is 2048 words × 8-bit. Page write and sequential read are available.

Caution   Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.

■ Features

- Operation voltage range: Read   2.5 V to 5.5 V
                                    Write   2.5 V to 5.5 V
- Page write: 16 bytes / page
- Sequential read
- Operation frequency: 400 kHz (V_{CC} = 2.5 V to 5.5 V)
- Write time: 5.0 ms max.
- Noise suppression   Schmitt trigger and noise filter on input pins (SCL, SDA)
- Write protect function during the low power supply voltage
- Endurance: 10^6 cycles / word[*1] (Ta = +25°C)
                                    3×10^5 cycles / word[*1] (Ta = +85°C)
                                    2×10^5 cycles / word[*1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
                                    30 years (Ta = +85°C)
                                    25 years (Ta = +105°C)
- Memory capacity: 16 K-bit
- Write protect: 100%
- Initial delivery state: FFh
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[*2]

  ***1.** For each address (Word: 8-bit)
  ***2.** Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP
- TMSOP-8

ABLIC Inc.

S-24C32C/64C H Series

FOR AUTOMOTIVE 105°C OPERATION
2-WIRE SERIAL E^{2}PROM

The S-24C32C/64C H series is a high temperature operation 2-wire serial E^{2}PROM for automotive components. The S-24C32C/64C H series has the capacity of 32 K-bit and 64 K-bit, and the organization is 4096 words × 8-bit, 8192 words × 8-bit, respectively. Page write and sequential read are available.

Caution   Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.

■ Features

- Operating voltage range: Read   2.5 V to 5.5 V
  Write   2.5 V to 5.5 V
- Page write: 32 bytes / page
- Sequential read
- Operation frequency: 400 kHz (V$_{CC}$ = 2.5 V to 5.5 V)
- Write time: 5.0 ms max.
- Noise suppression: Schmitt trigger and noise filter on input pins (SCL, SDA)
- Write protect function during the low power supply voltage
- Endurance: 10^6 cycles/word[1] (Ta = +25°C)
  3×10^5 cycles/word[1] (Ta = +85°C)
  2×10^5 cycles/word[1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
  30 years (Ta = +85°C)
  25 years (Ta = +105°C)
- Memory capacity: S-24C32C   32 K-bit
  S-24C64C   64 K-bit
- Write protect: 100%
- Initial delivery state: FFh
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[2]

  [1]. For each address (Word: 8-bit)
  [2]. Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP
- TMSOP-8

S-24C128C H Series

FOR AUTOMOTIVE 105°C OPERATION
2-WIRE SERIAL E^{2}PROM

The S-24C128C H series is a high temperature operation 2-wire serial E^{2}PROM for automotive components. The S-24C128C H series has the capacity of 128 K-bit, and the organization is 16384 words × 8-bit. Page write and sequential read are available.

Caution   **Before using the product in automobile control unit or medical equipment, contact to ABLIC Inc. is indispensable.**

■ Features

- Operating voltage range: Read   2.5 V to 5.5 V
-   Write   2.5 V to 5.5 V
- Page write: 64 bytes / page
- Sequential read
- Operation frequency: 400 kHz (V$_{CC}$ = 2.5 V to 5.5 V)
- Write time: 5.0 ms max.
- Noise suppression: Schmitt trigger and noise filter on input pins (SCL, SDA)
- Write protect function during the low power supply voltage
- Endurance: 10^6 cycles/word[*1] (Ta = +25°C)
- 3×10^5 cycles/word[*1] (Ta = +85°C)
- 2×10^5 cycles/word[*1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
-   30 years (Ta = +85°C)
-   25 years (Ta = +105°C)
- Memory capacity: 128 K-bit
- Write protect: 100%
- Initial delivery state: FFh
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[*2]

  *1. For each address (Word: 8-bit)
  *2. Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP

ABLIC Inc.

S-93S46A/56A/66A

FOR AUTOMOTIVE 150°C OPERATION
3-WIRE SERIAL E^{2}PROM

This IC is a high temperature operation 3-wire serial E^{2}PROM for automotive components. This IC has the capacity of 1 K-bit, 2 K-bit and 4 K-bit, and the organization is 64 words × 16-bit, 128 words × 16-bit and 256 words × 16-bit, respectively. Sequential read is available, at which time addresses are automatically incremented in 16-bit blocks. The communication method is by the Microwire bus.

Caution **Before using the product in automobile control unit or medical equipment, it is imperative to contact our sales representatives.**

■ Features

- Operation voltage range
  - Read: 4.0 V to 5.5 V (Ta = −40°C to +150°C)
  - Write: 4.0 V to 5.5 V (Ta = −40°C to +150°C)
- Operation frequency: 1 MHz
  (4.5 V to 5.5 V, Ta = −40°C to +150°C)
- Write time: 10.0 ms max.
- Sequential read
- Write protect function during the low power supply voltage
- Function to protect against write due to erroneous instruction recognition
- CMOS schmitt input (CS, SK)
- Endurance[*1]: 2×10^5 cycle / word[*2] (Ta = +150°C)
- Data retention: 100 years (Ta = +25°C)
  50 years (Ta = +125°C)
  20 years (Ta = +150°C)
- Memory capacity
  - S-93S46A: 1 K-bit
  - S-93S56A: 2 K-bit
  - S-93S66A: 4 K-bit
- Initial delivery state: FFFFh
- Burn-in specification: Wafer level burn-in
- Operation temperature range: Ta = −40°C to +150°C
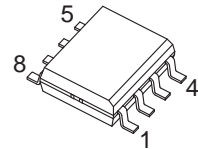- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[*3]

[*1]. Refer to "■ **Endurance**" for details.
[*2]. For each address (Word: 16-bit)
[*3]. Contact our sales representatives for details.

■ Package

- 8-Pin SOP (JEDEC)

(5.0 × 6.0 × t1.75 mm)

S-93A46B/56B/66B/76B/86B

FOR AUTOMOTIVE 125°C OPERATION
3-WIRE SERIAL E^{2}PROM

This IC is a high temperature operation 3-wire serial E^{2}PROM for automotive components. This IC has the capacity of 1 K-bit, 2 K-bit, 4 K-bit, 8 K-bit and 16 K-bit, and the organization is 64 words × 16-bit, 128 words × 16-bit, 256 words × 16-bit, 512 words × 16-bit and 1024 words × 16-bit, respectively. Sequential read is available, at which time addresses are automatically incremented in 16-bit blocks. The communication method is by the Microwire bus.

Caution **Before using the product in automobile control unit or medical equipment, it is imperative to contact our sales representatives.**

■ Features

- Memory capacity
  - S-93A46B: 1 K-bit (64-word × 16-bit)
  - S-93A56B: 2 K-bit (128-word × 16-bit)
  - S-93A66B: 4 K-bit (256-word × 16-bit)
  - S-93A76B: 8 K-bit (512-word × 16-bit)
  - S-93A86B: 16 K-bit (1024-word × 16-bit)
- Operation voltage range
  - Read: 2.5 V to 5.5 V
  - Write: 2.5 V to 5.5 V
- Operation frequency: 2.0 MHz max.
- Write time: 4.0 ms max.
- Sequential read
- CMOS schmitt input (CS, SK, DI)
- Write protect function during the low power supply voltage
- Function to protect against write due to erroneous instruction recognition
- Endurance: 10^6 cycle / word[1] (Ta = +85°C)
  - 8×10^5 cycle / word[1] (Ta = +105°C)
  - 5×10^5 cycle / word[1] (Ta = +125°C)
- Data retention: 100 years (Ta = +25°C)
  - 50 years (Ta = +125°C)
- Initial delivery state: FFFFh
- Wafer level burn-in (standard specification)
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified [2]

[1]. For each address (Word: 16-bit)
[2]. Contact our sales representatives for details.

■ Packages

- 8-Pin SOP (JEDEC)

(5.0 × 6.0 × t1.75 mm)

- 8-Pin TSSOP

(3.0 × 6.4 × t1.1 mm)

- TMSOP-8

(2.9 × 4.0 × t0.8 mm)

- HSNT-8(2030)

(3.0 × 2.0 × t0.5 mm)

ABLIC Inc.
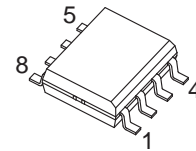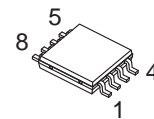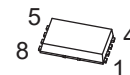
S-93C46C/56C/66C/76C/86C H Series

FOR AUTOMOTIVE 105°C OPERATION
3-WIRE SERIAL E^{2}PROM

This IC is a high speed, low current consumption, 3-wire serial E^{2}PROM with a wide operating voltage range. This IC has the capacity of 1 K-bit, 2 K-bit, 4 K-bit, 8 K-bit and 16 K-bit, and the organization is 64 words × 16-bit, 128 words × 16-bit, 256 words × 16-bit, 512 words × 16-bit and 1024 words × 16-bit, respectively. Sequential read is available, at which time addresses are automatically incremented in 16-bit blocks. The communication method is by the Microwire bus.

Caution   Before using the product in automobile control unit or medical equipment, it is imperative to contact our sales representatives.

■ Features

- Memory capacity
  - S-93C46C: 1 K-bit (64-word × 16-bit)
  - S-93C56C: 2 K-bit (128-word × 16-bit)
  - S-93C66C: 4 K-bit (256-word × 16-bit)
  - S-93C76C: 8 K-bit (512-word × 16-bit)
  - S-93C86C: 16 K-bit (1024-word × 16-bit)
- Operation voltage range
  - Read: 1.6 V to 5.5 V
  - Write: 1.8 V to 5.5 V
- Operation frequency: 2.0 MHz max.
- Write time: 4.0 ms max.
- Sequential read
- Write protect function during the low power supply voltage
- Function to protect against write due to erroneous instruction recognition
- Endurance: 10^6 cycle / word[*1] (Ta = +85°C)
  - 8×10^5 cycle / word[*1] (Ta = +105°C)
- Data retention: 100 years (Ta = +25°C)
  - 50 years (Ta = +105°C)
- Initial delivery state: FFFFh
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[*2]

[*1].   For each address (Word: 16-bit)
[*2].   Contact our sales representatives for details.
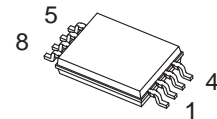
■ Packages

- 8-Pin SOP (JEDEC)


(5.0 × 6.0 × t1.75 mm)

- 8-Pin TSSOP

(3.0 × 6.4 × t1.1 mm)

- TMSOP-8

(2.9 × 4.0 × t0.8 mm)

- HSNT-8(2030)

(3.0 × 2.0 × t0.5 mm)

ABLIC Inc.
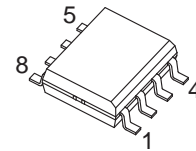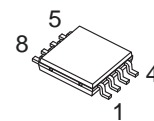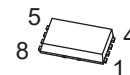
S-57TZ S Series

AUTOMOTIVE, 150°C OPERATION, HIGH-WITHSTAND VOLTAGE, HIGH-SPEED, ZCL[TM] 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 ZCL (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.

Caution **This product can be used in vehicle equipment and in-vehicle equipment. Before using the product for these purposes, it is imperative to 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
- Suitable for devices which require high quality due to the production system of this IC which certifies automotive application quality
- Contributes to device safe design with a built-in reverse voltage protection circuit and output current limit circuit

■ Specifications

- Pole detection: ZCL 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.
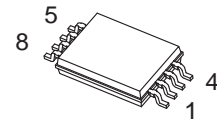- Release point (S pole)[1]: B_{RS} = 3.0 mT typ.
  B_{RS} = 6.0 mT typ.
- Chopping frequency: f_C = 500 kHz typ.
- Output delay time: t_D = 8.0 μs typ.
- Power supply voltage range[2]: V_{DD} = 2.7 V to 26.0 V
- Built-in regulator
- Built-in reverse voltage protection circuit
- Built-in output current limit circuit
- Operation temperature range: Ta = −40°C to +150°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[3]

*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.)
*3. Contact our sales representatives for details.

■ Applications

- DC brushless motor for automotive applications
- Automobile equipment
- Housing equipment
- Industrial equipment

■ Packages

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

ABLIC Inc.

S-57RB S Series

AUTOMOTIVE, 150°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.

ABLIC Inc. offers FIT rate calculated based on actual customer usage conditions in order to support customer functional safety design.
For more information regarding our FIT rate calculation, contact our sales representatives.

Caution **This product can be used in vehicle equipment and in-vehicle equipment. Before using the product for these purposes, it is imperative to 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 ± 1.0 mT) (Refer to "■ **Magnetic Characteristics**" for details.)
- Our production system certifies automotive application quality, which allows for use in devices which require high quality
- Contributes to device safe design with a built-in reverse voltage protection circuit and 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 kΩ 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 μs typ.
- Power supply voltage range[2]: V_{DD} = 2.7 V to 26.0 V
- Built-in regulator
- Built-in reverse voltage protection circuit
- Built-in output current limit circuit
- Operation temperature range: Ta = −40°C to +150°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[3]

  [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.)
  [3]. Contact our sales representatives for details.

■ Applications

- DC brushless motor for automotive applications
- Automobile equipment
- Housing equipment
- Industrial equipment

■ Packages

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

ABLIC Inc.

S-57P1 S Series

FOR AUTOMOTIVE 150°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 a reverse voltage protection circuit and 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.

Caution   This product can be used in vehicle equipment and in-vehicle equipment. Before using the product in the purpose, contact to ABLIC Inc. is indispensable.

■ 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 mT typ.
  B_{OP} = 1.5 mT typ.
  B_{OP} = 2.2 mT typ.
  B_{OP} = 3.0 mT typ.
- Chopping frequency: f_C = 500 kHz typ.
- Output delay time: t_D = 8.0 μs typ.
- Power supply voltage range: V_{DD} = 2.7 V to 26.0 V
- Built-in regulator
- Built-in reverse voltage protection circuit
- Built-in output current limit circuit
- Operation temperature range: Ta = −40°C to +150°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified [2]

[1]. The option can be selected.
[2]. Contact our sales office for details.

■ Applications

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

■ Package

- SOT-23-3S

ABLIC Inc.

S-57K1 A Series

FOR AUTOMOTIVE 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 a reverse voltage protection circuit and 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.

Caution   This product can be used in vehicle equipment and in-vehicle equipment. Before using the product in the purpose, contact to ABLIC Inc. is indispensable.

■ 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,
                                        Nch driver + built-in pull-up resistor
- Magnetic sensitivity[1]: B_{OP} = 3.0 mT typ.
                                        B_{OP} = 6.0 mT typ.
- Chopping frequency: f_C = 500 kHz typ.
- Output delay time: t_D = 8.0 μs typ.
- Power supply voltage range: V_{DD} = 3.5 V to 26.0 V
- Built-in regulator
- Built-in reverse voltage protection circuit
- Built-in output current limit circuit
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[2]

*1. The option can be selected.
*2. Contact our sales office for details.

■ Applications

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

■ Package

- SOT-23-3

ABLIC Inc.

S-57GS/GN S Series

AUTOMOTIVE, 150°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.

ABLIC Inc. offers FIT rate calculated based on actual customer usage conditions in order to support customer functional safety design.

For more information regarding our FIT rate calculation, contact our sales representatives.

Caution   This product can be used in vehicle equipment and in-vehicle equipment. Before using the product for these purposes, it is imperative to 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.)
- Suitable for devices which require high quality due to the production system of this IC which certifies automotive application quality
- Contributes to device safe design with a built-in reverse voltage protection circuit and 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 mT typ.
                                          B_{OP} = 6.0 mT typ.
                                          B_{OP} = 10.0 mT typ.
                                          B_{OP} = 15.0 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 reverse voltage protection circuit
- Built-in output current limit circuit
- Operation temperature range: Ta = −40°C to +150°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[3]

    *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.)
    *3. Contact our sales representatives for details.

■ Applications

- Automobile equipment
- Housing equipment
- Industrial equipment

■ Packages

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

ABLIC Inc.

S-57GD S Series

AUTOMOTIVE, 150°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.

ABLIC Inc. offers FIT rate calculated based on actual customer usage conditions in order to support customer functional safety design.

For more information regarding our FIT rate calculation, contact our sales representatives.

Caution **This product can be used in vehicle equipment and in-vehicle equipment. Before using the product for these purposes, it is imperative to 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.)
- Suitable for devices which require high quality due to the production system of this IC which certifies automotive application quality
- Contributes to device safe design with a built-in reverse voltage protection circuit and 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_{OP} = 3.0 mT typ.
  B_{OP} = 6.0 mT typ.
  B_{OP} = 10.0 mT typ.
  B_{OP} = 15.0 mT typ.
- Chopping frequency: f_C = 500 kHz typ.
- Output delay time: t_D = 16.0 μs typ.
- Power supply voltage range[*2]: V_{DD} = 2.7 V to 26.0 V
- Built-in regulator
- Built-in reverse voltage protection circuit
- Built-in output current limit circuit
- Operation temperature range: Ta = −40°C to +150°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[*3]

> ***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.)
> ***3.** Contact our sales representatives for details.

■ Applications

- Automobile equipment
- Housing equipment
- Industrial equipment

■ Packages

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

ABLIC Inc.

S-57A1 A Series

FOR AUTOMOTIVE 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 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 a reverse voltage protection circuit and 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.

Caution **This product can be used in vehicle equipment and in-vehicle equipment. Before using the product in the purpose, contact to ABLIC Inc. is indispensable.**

■ Features

- Pole detection[1]:   Detection of S pole
                                              Detection of N pole
- Output logic[1]:   Active "L"
                                              Active "H"
- Output form[1]:   Nch open-drain output
                                              Nch driver + built-in pull-up resistor
- Magnetic sensitivity[1]: B_{OP} = 3.0 mT typ.
                                              B_{OP} = 6.0 mT typ.
- Chopping frequency: f_C = 250 kHz typ.
- Output delay time: t_D = 16.0 μs typ.
- Power supply voltage range: V_{DD} = 3.5 V to 26.0 V
- Built-in regulator
- Built-in reverse voltage protection circuit
- Built-in output current limit circuit
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[2]

[1]. The option can be selected.
[2]. Contact our sales office for details.

■ Applications

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

■ Package

- SOT-23-3

ABLIC Inc.

S-35190A H Series

FOR AUTOMOTIVE 105°C OPERATION
3-WIRE REAL-TIME CLOCK

The S-35190A H Series is a 105°C operation CMOS 3-wire real-time clock IC which operates with the very low current consumption in the wide range of operation voltage. The operation voltage is 1.3 V to 5.5 V so that the S-35190A H Series can be used for various power supplies from main supply to backup battery. Due to the 0.25 μA current consumption and wide range of power supply voltage at time keeping, the S-35190A H Series makes the battery life longer. In the system which operates with a backup battery, the included free registers can be used as the function for user's backup memory. Users always can take back the information in the registers which is stored before power-off the main power supply, after the voltage is restored.

The S-35190A H Series has the function to correct advance / delay of the clock data speed, in the wide range, which is caused by the crystal oscillation circuit's frequency deviation. Correcting according to the temperature change by combining this function and a temperature sensor, it is possible to make a high precise clock function which is not affected by the ambient temperature.

Caution **This product can be used in vehicle equipment and in-vehicle equipment. Before using the product in the purpose, contact to ABLIC Inc. is indispensable.**

■ Features

- Low current consumption: 0.25 μA typ. (V_{DD} = 3.0 V, Ta = +25°C)
- Wide range of operating voltage: 1.3 V to 5.5 V
- Built-in clock correction function
- Built-in free user register
- 3-wire (MICROWIRE) CPU interface
- Built-in alarm interrupter
- Built-in flag generator during detection of low power voltage or at power-on
- Auto calendar up to the year 2099, automatic leap year calculation function
- Built-in constant-voltage circuit
- Built-in 32.768 kHz crystal oscillation circuit (built-in C_d, external C_g)
- Operating temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[1]

*1. Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP

ABLIC Inc.

S-35390A H Series

FOR AUTOMOTIVE 105°C OPERATION
2-WIRE REAL-TIME CLOCK

The S-35390A H Series is a 105°C operation CMOS 2-wire real-time clock IC which operates with the very low current consumption in the wide range of operation voltage. The operation voltage is 1.3 V to 5.5 V so that the S-35390A H Series can be used for various power supplies from main supply to backup battery. Due to the 0.25 μA current consumption and wide range of power supply voltage at time keeping, the S-35390A H Series makes the battery life longer. In the system which operates with a backup battery, the included free registers can be used as the function for user's backup memory. Users always can take back the information in the registers which is stored before power-off the main power supply, after the voltage is restored.

The S-35390A H Series has the function to correct advance / delay of the clock data speed, in the wide range, which is caused by the crystal oscillation circuit's frequency deviation. Correcting according to the temperature change by combining this function and a temperature sensor, it is possible to make a high precise clock function which is not affected by the ambient temperature.

Caution   This product can be used in vehicle equipment and in-vehicle equipment. Before using the product in the purpose, contact to ABLIC Inc. is indispensable.

■ Features

- Low current consumption: 0.25 μA typ. (V_{DD} = 3.0 V, Ta = +25°C)
- Wide range of operating voltage: 1.3 V to 5.5 V
- Built-in clock correction function
- Built-in free user register
- 2-wire (I^2C-bus) CPU interface
- Built-in alarm interrupter
- Built-in flag generator during detection of low power voltage or at power-on
- Auto calendar up to the year 2099, automatic leap year calculation function
- Built-in constant voltage circuit
- Built-in 32.768 kHz crystal oscillation circuit (built-in C_d, external C_g)
- Operating temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[1]

[1]. Contact our sales office for details.

■ Packages

- 8-Pin SOP (JEDEC)
- 8-Pin TSSOP

ABLIC Inc.

S-35710 A Series

CONVENIENCE TIMER

AUTOMOTIVE, 125°C OPERATION, 2-WIRE TIMER

The convenience timer is a CMOS timer IC which operates with low current consumption, and is suitable for the time management of the relative time.

The S-35710 Series compares the timer value and the value written to the internal register, and outputs an interrupt signal when the values match each other.

The timer of the S-35710 Series is a 24-bit binary-up counter.

The internal register data can be set freely by users via a 2-wire serial interface. Consequently, the time before the occurrence of an interrupt signal can be set freely.

Caution   This product can be used in vehicle equipment and in-vehicle equipment. Before using the product for these purposes, it is imperative to contact our sales representatives.

■ Features

- Alarm interrupt function: Settable on the second time scale from 1 second to 194 days (Approximately half a year)
- Low current consumption: 0.2 μA typ. (Quartz crystal: C_L = 6.0 pF, V_{DD} = 3.0 V, Ta = +25°C)
- Wide range of operation voltage: 1.8 V to 5.5 V
- 2-wire (I^2C-bus) CPU interface
- Built-in 32.768 kHz crystal oscillation circuit
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[1]

[1].   Contact our sales representatives for details.

■ Application

- Time management of various systems during the sleep period

■ Package

- TMSOP-8

ABLIC Inc.

S-35710M A Series

CONVENIENCE TIMER

AUTOMOTIVE, 125°C OPERATION,
2-WIRE TIMER WITH BUILT-IN QUARTZ CRYSTAL

The convenience timer is a CMOS timer IC which operates with low current consumption, and is suitable for the time management of the relative time.

The S-35710M compares the timer value and the value written to the internal register and outputs an interrupt signal when the values match each other.

The timer of the S-35710M is a 24-bit binary-up counter.

The internal register data can be set freely by users via a 2-wire serial interface. Consequently, the time before the occurrence of an interrupt signal can be set freely.

Since the S-35710M has a built-in quartz crystal, a matching assessment of the IC and the quartz crystal is unnecessary. Moreover, the number of external parts can also be reduced.

Caution **This product can be used in vehicle equipment and in-vehicle equipment. Before using the product for these purposes, it is imperative to contact our sales representatives.**

■ Features

- Built-in 32.768 kHz quartz crystal
- Alarm interrupt function: Settable on the second time scale from 1 second to 194 days (Approximately half a year)
- Low current consumption: 0.25 μA typ. (V_{DD} = 3.0 V, Ta = +25°C)
- Wide range of operation voltage: 1.8 V to 5.5 V
- 2-wire (I^2C-bus) CPU interface
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100/Q200 qualified[1]

[1]. Contact our sales representatives for details.

■ Application

- Time management of various systems during the sleep period

■ Package

- HSOP-8Q

ABLIC Inc.

S-35720 A Series

CONVENIENCE TIMER

AUTOMOTIVE, 125°C OPERATION,
TIMER WITH INTERRUPT TIME SETTING PIN

The convenience timer is a CMOS timer IC which operates with low current consumption, and is suitable for the time management of the relative time.

The S-35720 Series compares the timer value and the value set to the SET0 pin and the SET1 pin, and outputs an interrupt signal when the values match each other.

The timer of the S-35720 Series is a 24-bit binary-up counter.

4 types of interrupt time can be selected depending on the SET0 pin and the SET1 pin settings.

Caution   This product can be used in vehicle equipment and in-vehicle equipment. Before using the product for these purposes, it is imperative to contact our sales representatives.

■ Features

- Alarm interrupt function: Settable interrupt time
                                      Selectable as the option on the second time scale from 1 second to 194 days
                                      (Approximately half a year)
- Low current consumption: 0.2 µA typ. (Quartz crystal: C_L = 6.0 pF, V_{DD} = 3.0 V, Ta = +25°C)
- Wide range of operation voltage: 1.8 V to 5.5 V
- Built-in 32.768 kHz crystal oscillation circuit
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[1]

*1.   Contact our sales representatives for details.

■ Application

- Time management of various systems during the sleep period

■ Package

- TMSOP-8

ABLIC Inc.

S-35730 A Series

CONVENIENCE TIMER

AUTOMOTIVE, 125°C OPERATION, CLOCK PULSE OUTPUT, TIMER WITH FREQUENCY SETTING PIN

The convenience timer is a CMOS timer IC which operates with low current consumption, and is suitable for the time management of the relative time.

The S-35730 Series outputs the clock pulse.

4 types of clock pulse frequency can be selected from 1 Hz to 32.768 kHz depending on the SET0 pin and the SET1 pin settings.

Caution　**This product can be used in vehicle equipment and in-vehicle equipment. Before using the product in the purpose, contact to ABLIC Inc. is indispensable.**

■ Features

- Clock pulse output function:　　　　Settable clock pulse frequency, with an output control pin
- Low current consumption:　　　　　0.7 μA typ. (Quartz crystal: C_L = 6.0 pF, V_{DD} = 3.0 V, ENBL pin = "H", Ta = +25°C, FOUT pin = Nch open-drain output)
- Wide range of operation voltage:　1.8 V to 5.5 V
- Built-in 32.768 kHz crystal oscillation circuit
- Operation temperature range:　　　Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[1]

　*1.　Contact our sales office for details.

■ Applications

- Intermittent operation of various systems
- Regular status monitoring of various systems

■ Package

- TMSOP-8

ABLIC Inc.

S-35740 A Series

CONVENIENCE TIMER

AUTOMOTIVE, 125°C OPERATION, 2-WIRE INTERVAL TIMER

The convenience timer is a CMOS timer IC which operates with low current consumption, and is suitable for the time management of the relative time.

The S-35740 Series outputs the fixed-cycle interrupt signal. The frequency and duty ratio of the fixed-cycle interrupt signal can be set freely by users via a 2-wire serial interface.

The S-35740 Series has a 24-bit timer. For example, users can obtain the cumulative energization time of the system since the timer performs a count-up action every second.

Caution   This product can be used in vehicle equipment and in-vehicle equipment. Before using the product in the purpose, contact to ABLIC Inc. is indispensable.

■ Features

- Fixed-cycle interrupt signal output function: Settable frequency and duty ratio, with an output control pin
- Low current consumption: 0.2 μA typ.
   (Quartz crystal: C_L = 6.0 pF, V_{DD} = 3.0 V, ENBL pin = "H", Ta = +25°C)
- Wide range of operation voltage: 1.8 V to 5.5 V
- 2-wire (I^2C-bus) CPU interface
- Built-in 32.768 kHz crystal oscillation circuit
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[1]

   *1.   Contact our sales office for details.

■ Application

- Intermittent operation of various systems
- Regular status monitoring of various systems

■ Package

- TMSOP-8

ABLIC Inc.

S-35770 A Series

CONVENIENCE TIMER

AUTOMOTIVE, 125°C OPERATION, 2-WIRE COUNTER

The convenience timer is a CMOS timer IC which operates with low current consumption, and is suitable for the time management of the relative time.

The S-35770 Series counts the number of clocks input from an external device.

The counter of the S-35770 Series is a 24-bit binary-up counter.

The counter data can be read via a 2-wire serial interface.

Caution **This product can be used in vehicle equipment and in-vehicle equipment. Before using the product in the purpose, contact to ABLIC Inc. is indispensable.**

■ Features

- External clock signal count function: Countable from 0 to 16,777,215, with output pin for counter loop flag
- Low current consumption: 0.01 μA typ. (V_{DD} = 3.0 V, Ta = +25°C, out of communication (CLKIN pin = 0 V))
- Wide range of operation voltage: 1.5 V to 5.5 V
- 2-wire (I^2C-bus) CPU interface
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[1]

  *1. Contact our sales office for details.

■ Application

- Various pulse counters

■ Package

- TMSOP-8

ABLIC Inc.

S-19630A

AUTOMOTIVE, 125°C OPERATION, LOW INPUT OFFSET VOLTAGE CMOS OPERATIONAL AMPLIFIER

This IC incorporates a general purpose analog circuit in a small package. This is a zero-drift operational amplifier with Rail-to-Rail input and output, which uses chopper-stabilizing techniques to provide low input offset voltage.

The S-19630AB is a dual operational amplifier (2 circuits), which is suitable for applications requiring less offset voltage.

Caution **This product can be used in vehicle equipment and in-vehicle equipment. Before using the product for these purposes, it is imperative to contact our sales representatives.**

■ Features

- Low input offset voltage: V_{IO} = +50 µV max. (Ta = −40°C to +125°C)
- Low input offset voltage drift: $\frac{\Delta V_{IO}}{\Delta Ta}$ = ±25 nV/°C typ. (V_{DD} = 30.0 V, Ta = −40°C to +125°C)
- Operation power supply voltage range: V_{DD} = 4.0 V to 36.0 V
- Low current consumption (Per circuit): I_{DD} = 250 µA typ.
- Low input noise voltage: V_{NOISE_pp} = 0.8 µVpp typ. (f = 0.1 Hz to 10 Hz)
- Low input noise voltage density: V_{NOISE} = 25 nV/√Hz typ. (f = 1 kHz)
- Built-in output current limit circuit: Overcurrent limit when output pin is short-circuited
- Internal phase compensation: No external parts required
- Rail-to-Rail input and output
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[1]

    [1]. Contact our sales representatives for details.

■ Applications

- High-accuracy current detection
- Various sensor interfaces
- Strain gauge amplifier

■ Package

- TMSOP-8

S-19611A

AUTOMOTIVE, 105°C OPERATION,
LOW INPUT OFFSET VOLTAGE CMOS OPERATIONAL AMPLIFIER

This IC incorporates a general purpose analog circuit in a small package. This is a zero-drift operational amplifier with Rail-to-Rail input and output, which uses auto-zeroing techniques to provide low input offset voltage.
This IC is suitable for applications requiring less offset voltage.
The S-19611AB is a dual operational amplifier (2 circuits).

Caution   This product can be used in vehicle equipment and in-vehicle equipment. Before using the product for these purposes, it is imperative to contact our sales representatives.

■ Features

- Low input offset voltage: V_{IO} = +17 μV max. (Ta = +25°C)
                                                                      V_{IO} = +100 μV max. (Ta = −40°C to +105°C)
- Operation power supply voltage range: V_{DD} = 2.65 V to 5.50 V
- Low current consumption (Per circuit): I_{DD} = 200 μA typ.
- Internal phase compensation: No external parts required
- Rail-to-Rail input and output
- Operation temperature range: Ta = −40°C to +105°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[*1]

  *1.   Contact our sales representatives for details.

■ Applications

- High-accuracy current detection
- Various sensor interfaces
- Strain gauge amplifier

■ Package

- TMSOP-8

S-19610A

AUTOMOTIVE, 125°C OPERATION, CMOS OPERATIONAL AMPLIFIER

This IC incorporates a general purpose analog circuit in a small package. This is a CMOS type operational amplifier with phase compensation circuit, which operates at a low voltage and low current consumption.
The S-19610AB is a dual operational amplifier (2 circuits).

Caution   This product can be used in vehicle equipment and in-vehicle equipment. Before using the product in the purpose, contact to ABLIC Inc. is indispensable.

■ Features

- Low input offset voltage: V_{IO} = +6.0 mV max. (Ta = −40°C to +125°C)
- Operation power supply voltage range: V_{DD} = 2.70 V to 5.50 V
- Low current consumption (Per circuit): I_{DD} = 1.00 mA typ.
- Internal phase compensation: No external parts required
- Operation temperature range: Ta = −40°C to +125°C
- Lead-free (Sn 100%), halogen-free
- AEC-Q100 qualified[1]

   *1.   Contact our sales office for details.

■ Applications

- Current sensing
- Signal amplification
- Buffer
- Active filter

■ Package

- TMSOP-8

ABLIC Inc.

Package List

Package Type	Pin Count	Package Name	Package Size (mm)			Pitch (mm)
			H$_E$	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 (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

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