# DATA SHEET

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|---|---|
| Part No. | AN41023A |
| Package Code No. | HSOP042-P-0400D |

Contents

# AN41023A

## 4.5-ch. linear driver IC for CD, MD and DVD Player

### ■ Overview

AN41023A is a 4.5-ch. Liner driver IC incorporating the high-power operational amplifier system and suitable for CD and MD actuator and motor driver applications.
(ch.1 & ch.2: Actuator, ch.3: Spindle, ch4A: Traverse, ch.4B: Loading)

### ■ Features

- Wide output dynamic range: Maximum output voltage of 6 V(typ.) when $SV_{CC}$ = $PV_{CC}$ = 8 V and RL = 8Ω
- Built-in general purpose operational amplifier in each input part of ch.1, ch.2, ch.3 and ch.4A, and compatible for both linear input and PWM input.
- Built-in a channel switching, ch.4A for traverse and ch.4B for loading.
- Selectable loading mode among forward, reverse, brake and stand-by by the digital signal from a microcomputer.
- Built-in stand-by function.
- Built-in thermal shutdown circuit.

### ■ Applications

- CD, MD and DVD-Player actuator and motor driver applications.

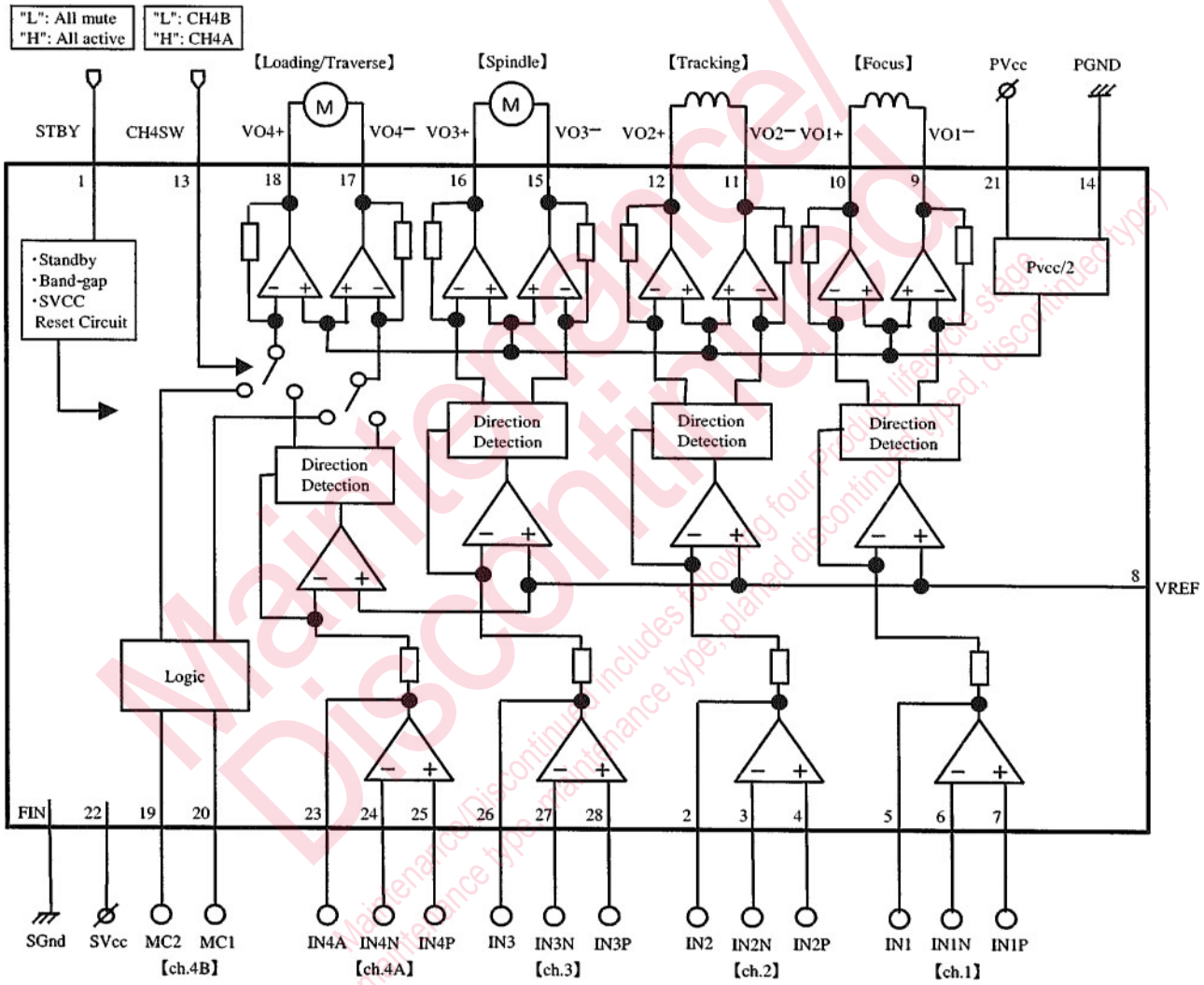
### ■ Package

- 28-pin plastic small outline package with heat slug (SOP type)

### ■ Type

- Silicon monolithic bipolar IC

■ Application Circuit Example



■ Pin Descriptions

| Pin No. | Pin name | Type | Description |
|---|---|---|---|
| 1 | STBY | Input | Stand-by input |
| 2 | IN2 | Input | Driver 2 input |
| 3 | IN2N | Input | Driver 2 negative input |
| 4 | IN2P | Input | Driver 2 positive input |
| 5 | IN1 | Input | Driver 1 input |
| 6 | IN1N | Input | Driver 1 negative input |
| 7 | IN1P | Input | Driver 1 positive input |
| 8 | VREF | Input | VREF input |
| 9 | VO1– | Output | Driver 1 negative output |
| 10 | VO1+ | Output | Driver 1 positive output |
| 11 | VO2– | Output | Driver 2 negative output |
| 12 | VO2+ | Output | Driver 2 positive output |
| 13 | CH4SW | Input | CH4 input select |
| 14 | PGND | Ground | Ground for driver |
| 15 | VO3– | Output | Driver 3 negative output |
| 16 | VO3+ | Output | Driver 3 positive output |
| 17 | VO4– | Output | Driver 4 negative output |
| 18 | VO4+ | Output | Driver 4 positive output |
| 19 | MC2 | Input | MC2 input |
| 20 | MC1 | Input | MC1 input |
| 21 | $PV_{CC}$ | Power supply | Power supply for diver |
| 22 | $SV_{CC}$ | Power supply | Power supply |
| 23 | IN4A | Input | Driver 4 input |
| 24 | IN4N | Input | Driver 4 negative input |
| 25 | IN4P | Input | Driver 4 positive input |
| 26 | IN3 | Input | Driver 3 input |
| 27 | IN3N | Input | Driver 3 negative input |
| 28 | IN3P | Input | Driver 3 positive input |
| FIN | SGND | Ground | Ground |

## ■ Absolute Maximum Ratings

| A No. | Parameter | Symbol | Rating | Unit | Notes |
|---|---|---|---|---|---|
| 1 | Supply voltage | $SV_{CC}$<br>$PV_{CC}$ | 14 | V | *1 |
| 2 | Supply voltage | $ISV_{CC}$<br>$IPV_{CC}$ | 0.2<br>1.2 | A | *2 |
| 3 | Power dissipation | $P_D$ | 582 | mW | *3 |
| 4 | Operating ambient temperature | $T_{opr}$ | –40 to +85 | °C | *4 |
| 5 | Storage temperature | $T_{stg}$ | –55 to +150 | °C | *4 |
| 6 | Supply voltage application range | $V_{CC}$ | – 0.3 to +14.0 | V | — |
| 7 | Driver output current | $I_{O(n)}$ | ±1.0 | A | *5 |
| 8 | Control signal input voltage | $V_n$ | 0 to $SV_{CC}$ | V | *6 |

Notes) *1 : The values under the condition not exceeding the above absolute maximum ratings and the power dissipation.

*2 : Make sure that all channels operate within 1 A current flow.

*3 : The power dissipation shown is the value at $T_a$ = 85°C for the independent (unmounted) IC package with out a heat sink.
When using this IC, refer to the $P_D$-$T_a$ diagram of the package standard page 4 and use under the condition not exceeding the allowable value.

*4 : Except for the power dissipation, operating ambient temperature, and storage temperature, all ratings are for $T_a$ = 25°C.

*5 : At $I_{O(n)}$, "n" is Pin No., n = 9, 10, 11, 12, 15, 16, 17, 18.
Do not apply current or voltage from external sources to any pin not listed above. For the current denotation, (+) means current flowing into IC (–) means current flowing out from IC.

*5 : At $I_{O(n)}$, "n" is Pin No., n = 1, 2, 3, 4, 5, 6, 7, 8, 13, 19, 20, 23, 24, 25, 26, 27, 28.
Do not apply current or voltage from external sources to any pin not listed above. For the current denotation, (+) means current flowing into IC (–) means current flowing out from IC.

## ■ Operating supply voltage range

| Parameter | Symbol | Rangs | Unit | Notes |
|---|---|---|---|---|
| Supply voltage range | $SV_{CC}$<br>$PV_{CC}$ | 4.5 to 13.5 | V | * |

Note) * : Operate on the condition $PV_{CC} \leq SV_{CC}$
The values under the condition not exceeding the above absolute maximum ratings and the power dissipation.

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