

Stepping Motor Drive IC AN8495SB

Overview

AN8495SB is a stepping-motor-driving IC, created by using a D-MOS process, and provides a maximum output of 30V at 1.5A. By the PWM drive and 2-bit constant-current-chopping-drive method, the winding 1-2 phase drive is possible.

Feature

- 4-phase input (W1-2 phase excitation)
- 2-bit current level switching.
- Built-in noise canceller.
- Built-in phase-change thru-current protection function.
- Built-in flywheel diode

Applications

- Printer , FAX ,PPC

Recommended Operating Range

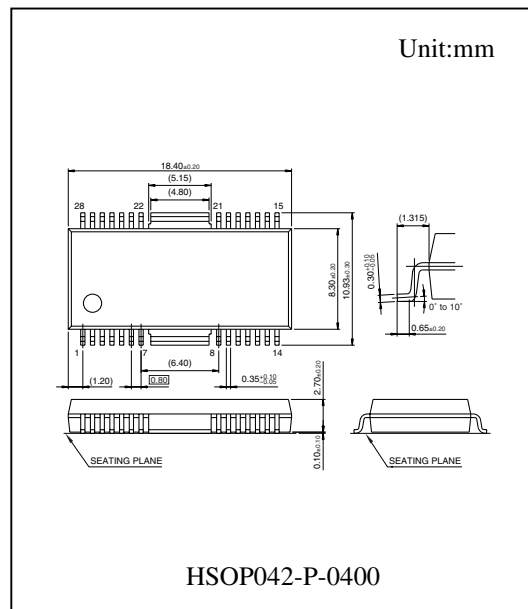
| | | |
|--------------------------------|-----|----------------|
| Operating supply voltage range | VCC | 4.75V to 5.25V |
| | VM | 18.0V to 28.0V |

Electrical Characteristics (Ta=25°C±2°C, Vcc=5.0V, VM=24V)

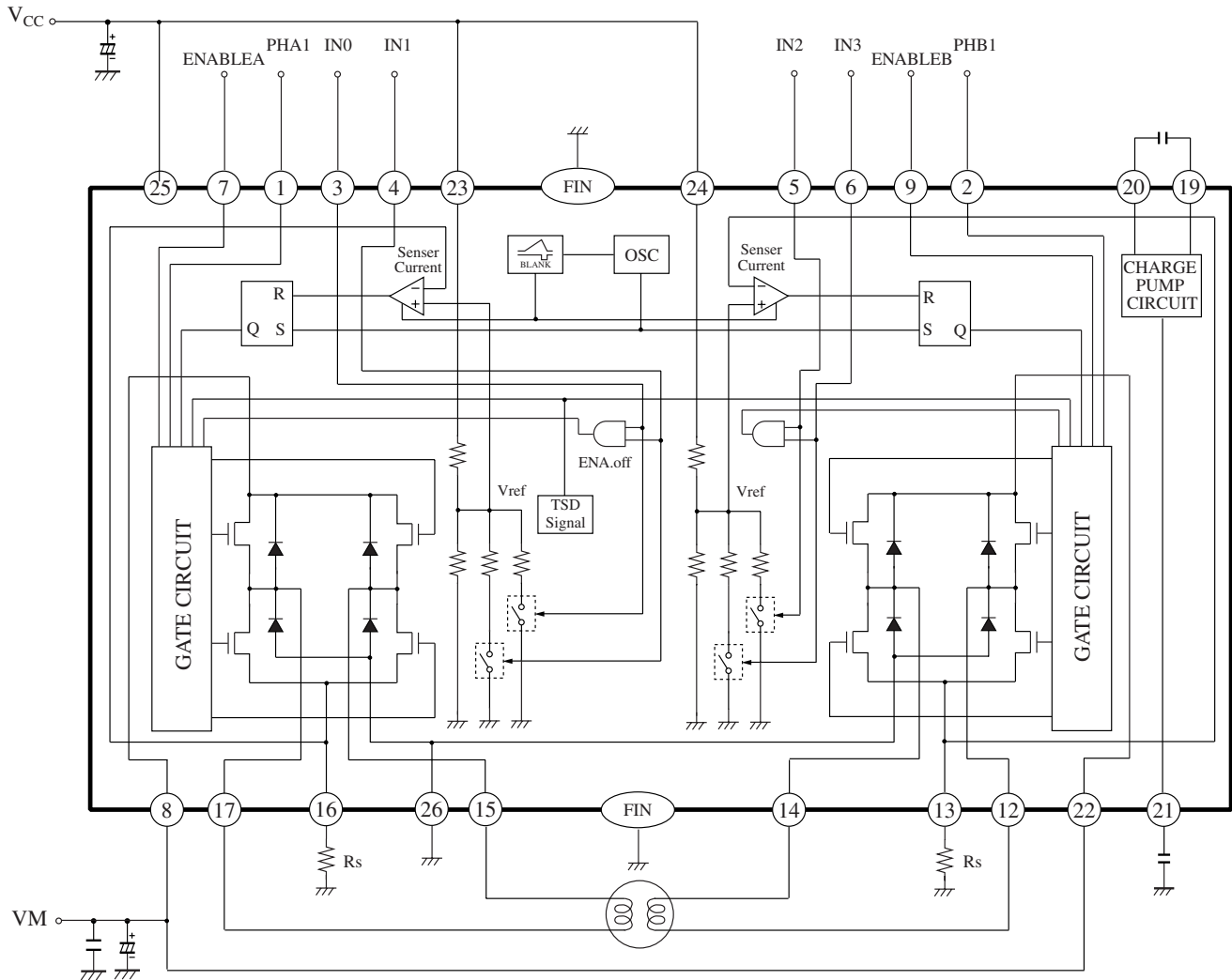
| Parameter | Symbol | Condition | min | typ | max | unit |
|--------------------------------|--------|--------------------------------|---------|--------|-------|------|
| Power block | | | | | | |
| Output saturation voltage H | VOH | I = -1.0A | VM-0.75 | VM-0.5 | - | V |
| Output saturation voltage L | VOL | I = 1.0A | - | 0.65 | 0.98 | V |
| Flywheel diode forward voltage | VDI | I = 1.0A | 0.5 | 1.0 | 1.5 | V |
| Control block | | | | | | |
| PWM frequency | fPWM | | 50.2 | 67 | 83.8 | kHz |
| Comparator threshold H(100%) | VTH | IN0=IN1=0V, IN2=IN3=0V | 0.479 | 0.503 | 0.528 | V |
| Comparator threshold C(67%) | VTC | IN0=5V, IN1=0V, IN2=5V, IN3=0V | 0.305 | 0.330 | 0.356 | V |
| Comparator threshold L(33%) | VTL | IN0=0V, IN1=5V, IN2=0V, IN3=5V | 0.151 | 0.167 | 0.185 | V |

The products and specification are subject to change without any notice. Please ask for the latest Product Standards to guarantee the satisfaction of your product requirements.

Semiconductor Company, Matsushita Electric Industrial Co., Ltd.



■ Block Diagram



* A voltage is applied externally to Terminals PHA1, PHB1, IN0 to 3, ENABLEA, ENABLEB, VREFA and VREFV, and may cause an overcurrent. To protect the device from overcurrent, insert an overcurrent protective resistor (1K Ω or over).

■ Pin Descriptions

| Pin No. | Symbol | Function | Pin No. | Symbol | Function |
|---------|---------|---------------------------------|---------|--------|-------------------------------------|
| 1 | PHA1 | A phase changeover terminal | 16 | RCSA | A phase current detector |
| 2 | PHB1 | B phase changeover terminal | 17 | AOUT1 | Motor drive A phase output 1 |
| 3 | IN0 | A phase output torque control 1 | 18 | N.C | - |
| 4 | IN1 | A phase output torque control 2 | 19 | BC1 | Capacitor for charge pump circuit 1 |
| 5 | IN2 | B phase output torque control 1 | 20 | BC2 | Capacitor for charge pump circuit 2 |
| 6 | IN3 | B phase output torque control 2 | 21 | VPUMP | Charge pump circuit output |
| 7 | ENABLEA | A phase start/stop signal input | 22 | VM2 | Supply terminal for Motor 2 |
| 8 | VM1 | Supply terminal for Motor 1 | 23 | VREFA | A phase torque ref. voltage input |
| 9 | ENABLEB | B phase start/stop signal input | 24 | VREFB | B phase torque ref. voltage input |
| 10 | N.C | - | 25 | VCC | Supply terminal |
| 11 | N.C | - | 26 | GND | Signal GND |
| 12 | BOUT2 | Motor drive B phase output 2 | 27 | N.C | - |
| 13 | RCSB | B phase current detector | 28 | N.C | - |
| 14 | BOUT1 | Motor drive B phase output 1 | FIN | GND | Signal GND |
| 15 | AOUT2 | Motor drive A phase output 2 | | | |