

HMSK4322 Brushless Motor Driver

1 Features of HMSK4322 High Efficiency Pulse Width Modulation Amplifier of Brushless Motor Driver

- 200V volt motor power supply
- 20A output current converter capability,
All N channel, MOS-FET Output bridge type
- Internally installed dead time with 2μ s
- Under-voltage lockout protection
- Isolated package design provides high voltage insulation and excellent heat transfer performance
- Working for optional three-foot bending



Fig 1 HMSK4322 External view

2 Applications of HMSK4322 High Efficiency Pulse Width Modulation Amplifier of Brushless Motor Driver

Three-phase brushless DC; Servo controller; Three-phase brushless AC; Cooling fan actuator control; Induction motor control; Air conditioning fan speed control.

3 Description of HMSK4322 High Efficiency Pulse Width Modulation Amplifier of Brushless Motor Driver

HMSK4322 is a small volume three-phase bridge with a gate driver, the maximum voltage supply can reach to DC 200V, and have 20A output current, also have the under-voltage lockout protection, internally installed dead time with 2us. Package used by insulation sealing, working for optional three-foot bending is more convenience for user's choice.

This series of products are made of thick film hybrid integrated process, metal sealed package. Product design and manufacturing meet the requirements of MIL-STD and detailed specifications, the quality level is H-class.

4 Technical Specifications of HMSK4322 High Efficiency Pulse Width Modulation Amplifier of Brushless Motor Driver

Table 2 Electrical Characteristic (Complete according to the standard)

| No. | Characteristic | (Unless other condition, V _{CC} =15V±5% V _S =28V±5% -55°C≤T _c ≤125°C) | HMSK4322 | | | Unit |
|-----|--------------------------------------|---|----------|-----|-----|------|
| | | | A group | min | max | |
| 1 | +15V Static current /I _{CC} | Open V _{CC} | 1 | - | 15 | mA |
| 2 | Drain-source voltage/V _{DS} | Open V _{CC} | 1 | | 2 | V |
| 3 | Leak current/V | Open V _{CC} , INH GND | 1 | | 3 | mA |
| 4 | Input threshold level(High)/V | | 1 | 2.2 | - | V |
| 5 | Input threshold level (Low)/V | | 1 | - | 0.8 | Us |

5 Pin Designations of HMSK4322 High Efficiency Pulse Width Modulation Amplifier of Brushless Motor Driver

Table 3 Pin Designations

| Pin | Symbol | Designation | Pin | Symbol | Designation |
|-----|-----------------|---|-----|--------|-------------------------------------|
| 1 | V _{CC} | Control power supply | 11 | COM | Motor supply ground |
| 2 | AΦHIN | A channel high-level logical signal input | 12 | CΦ | Three-phase bridge C channel output |
| 3 | BΦHIN | B channel high-level logical signal input | 13 | N/C | NULL |
| 4 | CΦHIN | C channel high-level logical signal input | 14 | N/C | NULL |

| | | | | | |
|----|-----------------|--|----|-----|-------------------------------------|
| 5 | AΦLIN | A channel low-level logical signal input | 15 | BΦ | Three-phase bridge B channel output |
| 6 | FAULT | Fault | 16 | N/C | NULL |
| 7 | CΦLIN | C channel low-level logical signal input | 17 | N/C | NULL |
| 8 | BΦLIN | B channel low-level logical signal input | 18 | V+ | Motor supply (Connect +28V) |
| 9 | V _{SS} | Control power ground | 19 | AΦ | Three-phase bridge A channel output |
| 10 | ITRIP | Current-limiting | 20 | N/C | NULL |

6 Circuit block diagram of HMSK4322 High Efficiency Pulse Width Modulation Amplifier of Brushless Motor Driver

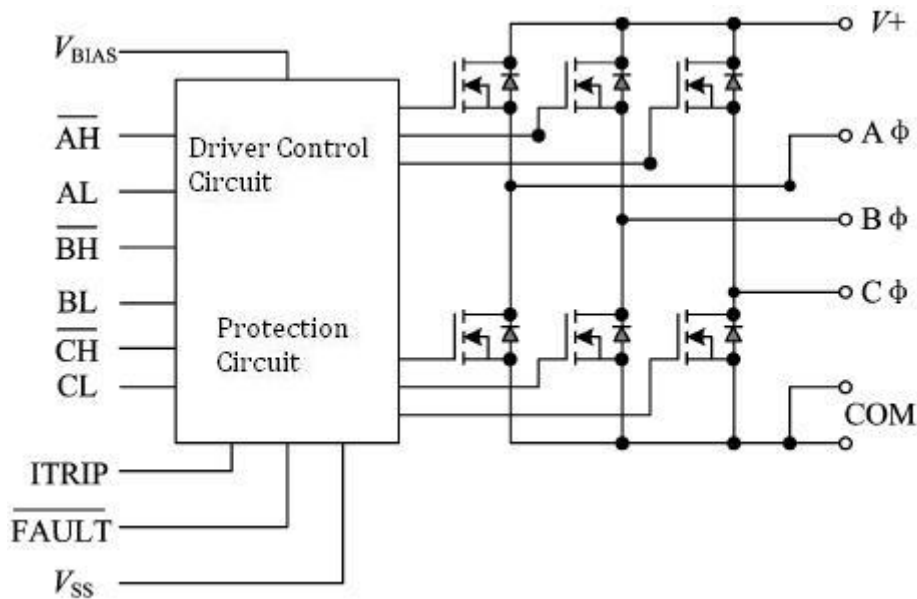


Figure 2 Circuit block diagram

7. Typical Connection Diagram of HMSK4322 High Efficiency Pulse Width Modulation Amplifier of Brushless Motor Driver

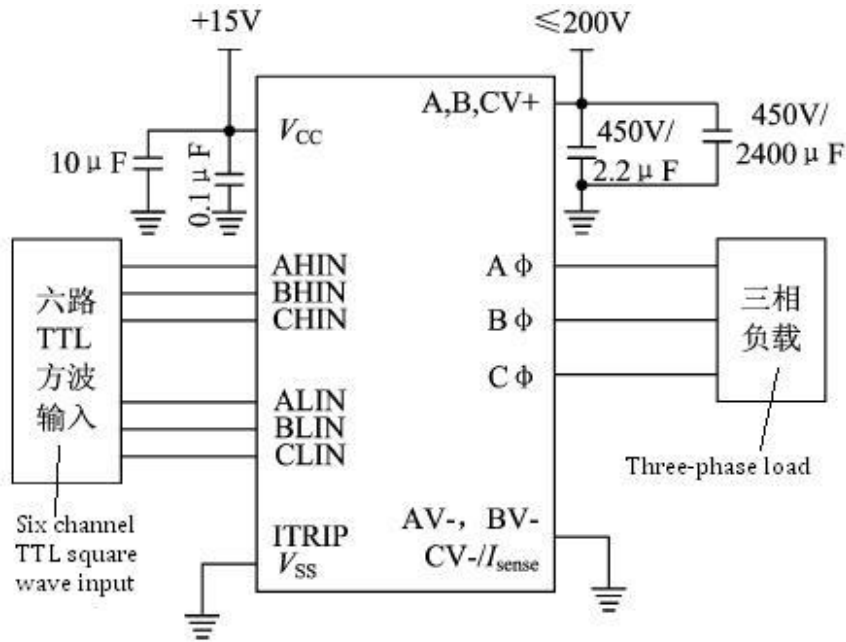
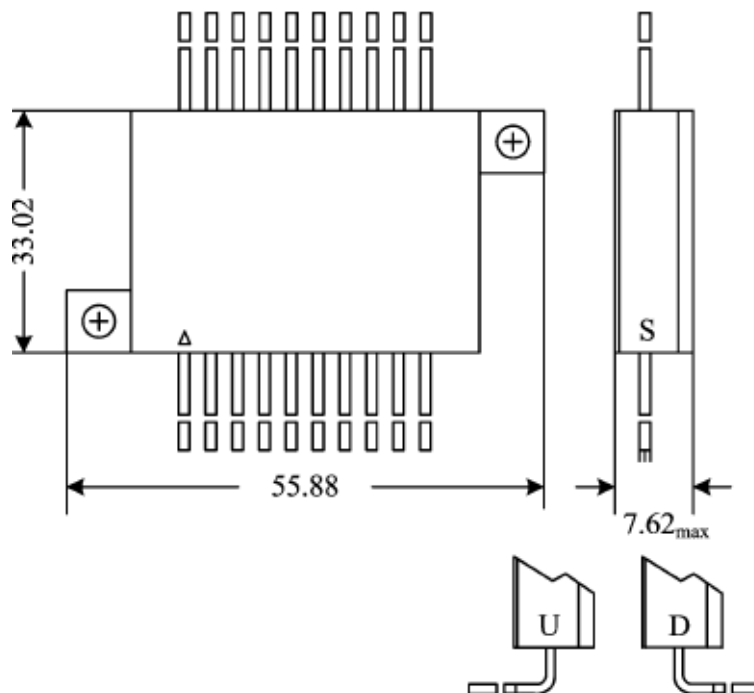


Figure 3 HMSK4322 connection diagram

8. Package Specifications of HMSK4322 High Efficiency Pulse Width Modulation Amplifier of Brushless Motor Driver

Outline of package is shown in Figure 4:

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Application Notes please refer to the appendix, must read it carefully

