

MIPM-10A-48V-D Dual Drive Component

1 Features

- Modules includes two DC/DC converters and two Triple-phase brushless motor drive circuits
- Built-in three-phase six-leg drive circuit and power amplifier circuit
- Built-in leak-loope circuit (leak resistors are not included)
- The PWM signal, enable control signal and discharge control signal are electrically isolated from the drive circuit
- To achieve A、C two-phase current signal isolation detection
- To achieve the power supply voltage detection
- Realization of shell temperature isolation detection of intelligent power module



2 Applications

- Triple-phase brushless motor drive control
- Drive the reactive load
- Servo Control

3 Descriptions

High density, multi-function MPWM-10A-48V-D dual intelligent module integrates 7 auxiliary power supply and 500W H bridge power supply, two three-phase power amplifier drive circuit in one. The module has the following characteristics: small size, light weight, convenient system interface, especially light weight, is the future of unmanned aerial vehicles, helicopters preferred varieties, there is a greater promotion of value and space.

4 Technical Specifications

Form 1 Electrical characteristics

| No | Character | | Test Condition $V_{I1}=28V \pm 1V$ V_{I2} 50%TTL square wave $-40^{\circ}C \leq T_c \leq 85^{\circ}C$ | MIPM-10A-48V-D | | | Unit |
|----|---|--------------------------|--|----------------|--|------|------|
| | | | | Min | | Max | |
| 1 | Azimuth current detection signal $1V_{AZ1}$ | | Output current $I_0=(2.5 \pm 0.5)$ A, Triangular hair access | | | | V |
| | Azimuth current detection signal $2V_{AZ2}$ | | | 1.4 | | 1.6 | V |
| | Pitch current detection signal $1V_{EL1}$ | | | 1.4 | | 1.6 | V |
| | Pitch current detection signal $2V_{EL2}$ | | | - | | - | V |
| 2 | Bus voltage detection signal VM | | $T_A=25^{\circ}C, I_0=(2.5 \pm 0.5) \Omega$ | 2.0 | | 2.4 | V |
| 3 | +5V | Output voltage V_{+5V} | $R_{L1}=(2.5 \pm 0.5)\Omega$ $T_A=25^{\circ}C, R_{L1}=(2.5 \pm 0.5)\Omega$ $B_W \leq 20MHZ$ | 4.80 | | 5.20 | V |
| | | Output current I_{+5V} | | - | | 2.0 | A |
| | | Ripple voltage V_{RI} | | - | | 100 | mV |

Form 2

| No | Character | | Test Condition $V_{I1}=28V \pm 1V$ V_{I2} 50%TTL square wave $-40^{\circ}C \leq T_c \leq 85^{\circ}C$ | MIPM-10A-48V-D | | | Unit |
|----|---------------------------------------|-----------------|--|----------------|--|--------|------|
| | | | | Min | | Max | |
| 4 | -15V supply | V_{-15V} | $R_{L2}=(45 \pm 1)\Omega$ $T_A=25^{\circ}C, R_{L2}=(45 \pm 1)\Omega$ $B_W \leq 20MHZ$ | -15.2 0 | | -14.80 | V |
| | | I_{-15V} | | - | | 0.33 | A |
| | | Ripple V_{R2} | | - | | 100 | mV |
| 5 | +15V supply | V_{+15V} | $R_{L2}=(45 \pm 1)\Omega$ $T_A=25^{\circ}C, R_{L2}=(45 \pm 1)\Omega$ $B_W \leq 20MHZ$ | 14.80 | | 15.20 | V |
| | | I_{+15V} | | - | | 0.33 | A |
| | | Ripple V_{R3} | | - | | 100 | mV |
| 6 | A continuous working current I_{OA} | | | 2.5 | | - | A |
| 7 | B continuous working current I_{OB} | | | 2.5 | | - | A |

| | | | | | | |
|---|---------------------------------------|--------------------------|-----|--|---|---|
| 8 | A continuous working current I_{0A} | $T_A=25^{\circ}\text{C}$ | 4.0 | | - | A |
| 9 | B continuous working current I_{0B} | $T_A=25^{\circ}\text{C}$ | 4.0 | | - | A |

5 Lead function description

Form 3 Pin Designation (XS1)

| No | symbol | Designation | No | symbol | Designation |
|----|----------|------------------------------------|----|----------|---------------------------------------|
| 1 | AZITEST1 | Azimuth current detection signal 1 | 11 | AZITEST2 | Pitch current detection signal 1 |
| 2 | GND | Detection signal Ground | 12 | GND | Detection signal Ground |
| 3 | ELITEST1 | Azimuth current detection signal 2 | 13 | ELITEST2 | Pitch current detection signal 2 |
| 4 | GND | Detection signal Ground | 14 | GND | Detection signal Ground |
| 5 | VOLTEST | Voltage detection Signal | 15 | TEMPTEST | Internal temperature detection signal |
| 6 | GND | $\pm 15\text{V}$ Power ground | 16 | GND | Detection signal |
| 7 | V-15V | -15V Voltage | 17 | AAP+ | 28V Power control signal |
| 8 | +V15V | +15V Voltage | 18 | AAP | 28V Power control signal |
| 9 | GND | +5V Power ground | 19 | GND | +5V Power ground |
| 10 | +V5V | +5V Power Voltage | 20 | +V5V | +5V Power voltage |

6 Circuit block diagram

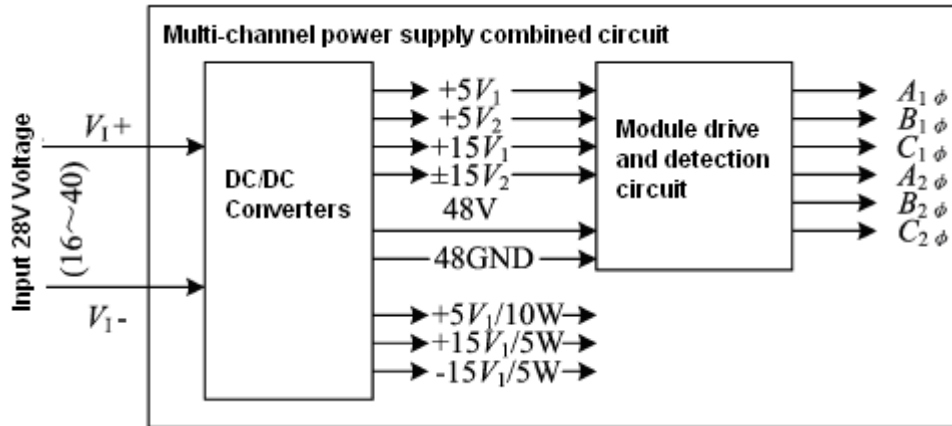


Fig 2 Single-circuit block diagram

7. Typical Connection Diagram

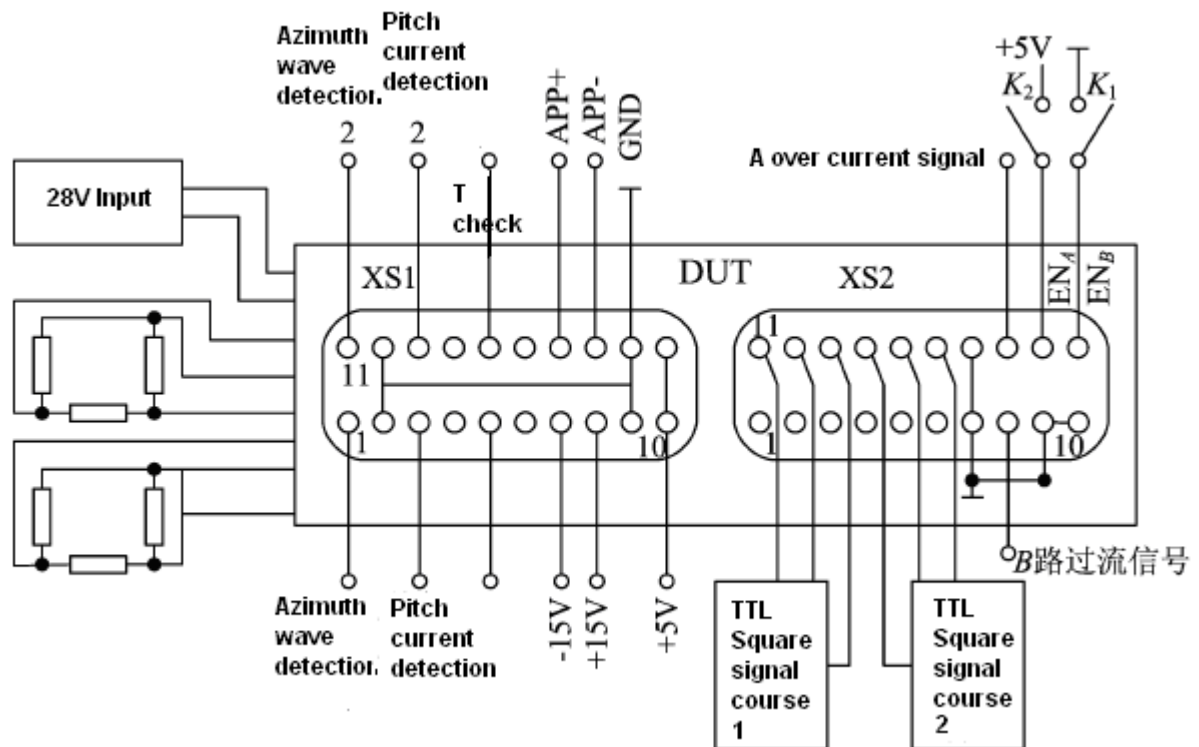


Fig 3 connection diagram

(1) Product output has total seven output wires , of which six wires for the two-way three-phase load output, one way output be marked as red (3 wires) , another way be marked as black (3 wires) and one blue wire is for 48V ground.

(2)The correspondence between the input square wave signal and the output wires is as follows:

| Lead | Symbol | Function | Output line |
|------|--------|----------|-------------|
| 11 | BH3 | B road C | CC(2) |
| 12 | BH2 | B road B | BB(2) |
| 13 | BH1 | B road A | AA(2) |
| 14 | AH3 | A road C | CC1 |
| 15 | AH2 | A road B | BB1 |
| 16 | AH1 | A road A | AA1 |

8. Package Specifications (Fig 5)

(1) Size: 175mm×88mm×40mm

