



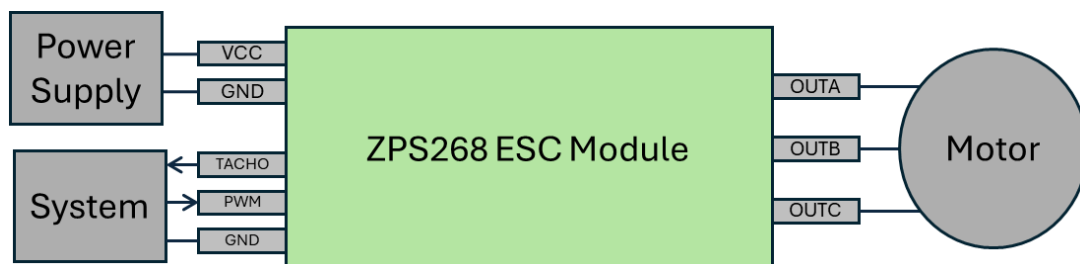
ZPS268

SLIM BLDC™ Overview

The **SLIM BLDC™** PCBA uses ZPS268 3 Phase Motor Controller IC from Zerro Power Systems. The ZPS268 drives a 3-phase brushless and sensorless DC motor in full bridge mode. Various functions and parameters can be selected through standard I²C protocol. The speed of the fan can be controlled through the PWM pin.

- Sensor-less 3 phase fan motor control
- Integrated pre-drivers and internal MOSFET
- Up to 3A drive capability
- Auto spin-up using inductive sensing for position detect
- Optional Blind spin startup
- Programmable spin up current limit
- Open or closed loop speed control
- 8-point Programmable PWM profile
- Sinusoidal (sine) PWM drive with bit selectable option for a 6-step drive
- Open loop PWM mapping
- Pole mismatch compensation to minimize jitter
- 5-bit torque adjustment for best torque ripple
- Speed fault detection
- Programmable acceleration and deceleration control
- Guaranteed start-up from reverse spin condition
- Programmable alarm and retry timing
- I²C compatible PWM/TACHO pins
- Multi options for FG/TACHO signal output
- 6V to 18.0V operation (UV threshold 5V)
- Clean power up with no current spikes
- Inrush current control¹
- QFN24L 4.0mm x 4.00mm or CSP49 2.6mm x 2.6mm¹

NOTE1: See ordering part number for available variants of this board.



PCBA Block Diagram shown with PWM/Tacho interface option.

PWM/TACHO pins can be configured as I2C interface as an option.

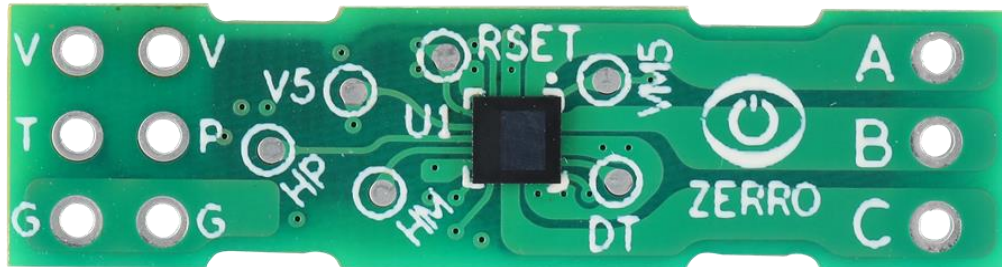


ZPS268

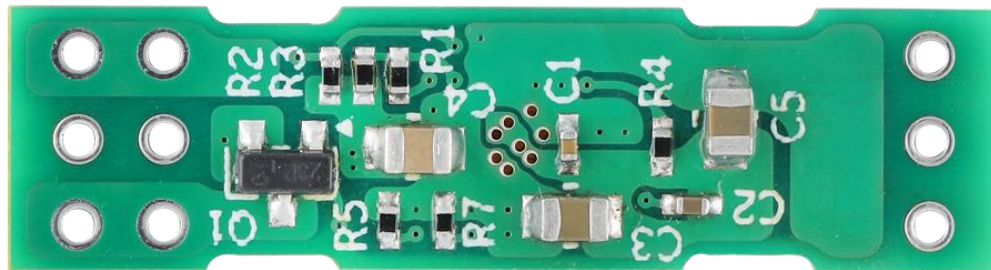
SLIM BLDC™ PCBA Description

Pin names:

VCC = V, GND = G, OUTA = A, OUTB = B, OUTC = C, TACHO = T, PWM = P

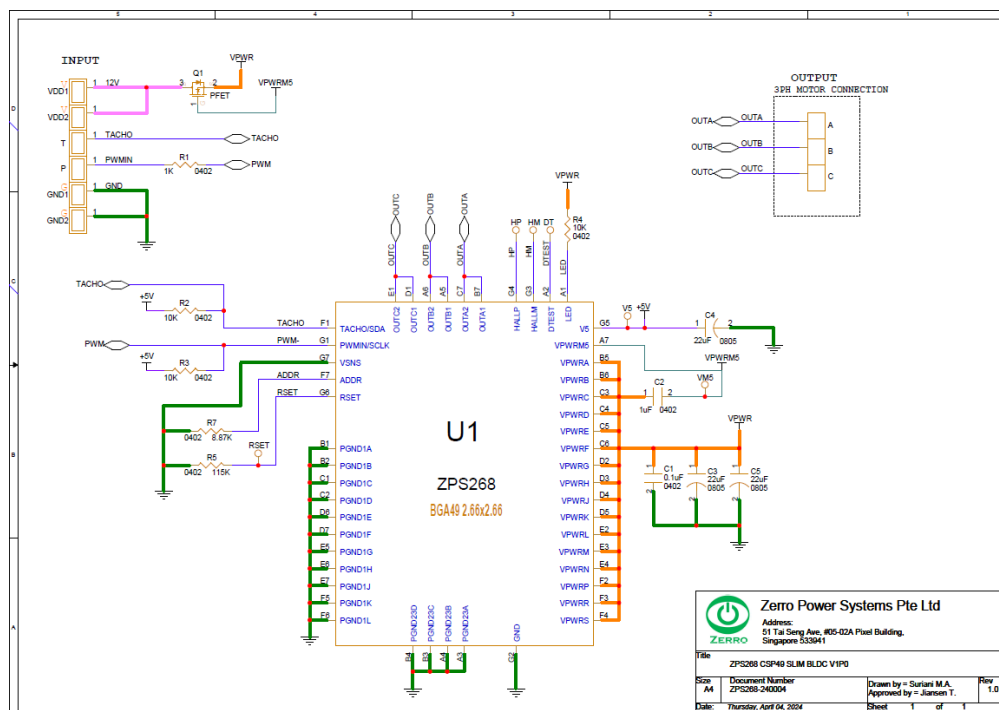


SLIM BLDC™ PCBA with CSP49 Top View



SLIM BLDC™ PCBA with CSP49 Bottom View

Application Circuit





Programming Interface GUI

Easy to use GUI can be found at <https://zpsgui.com/> GUI user manual is available on the site after login. Contact your local representative for a user account.

Home Bridge Documentation ▾ User (Basic) ▾ Logout

Connection

☐ Virtual Board

Chip ID: ZPS268 ▾

Bridge List: Device Addr:

Search Connect Disconnect

Map Register

Operate Register Bits

Bit 7	☐ 0	Bit 3	☐ 0
Bit 6	☐ 0	Bit 2	☐ 0
Bit 5	☐ 0	Bit 1	☐ 0
Bit 4	☐ 0	Bit 0	☐ 0

Read All Load File

Write Bits Save File

Write Byte

☒ Auto Sync

0~FF

PWM / I2C

☐ PWM Mode ☒ I2C Mode

I2C Freq: 1h: 100 kHz ▾

PWM Control Input

Duty Cycle (%):

PWM Freq: 100 kHz ▾

Set Cycle (%): 50 Update

DC per step (%): + -

Fan Control

Current Limit Start Up Speed Control Profile OTP

Current Limit S1 Spin Hall

BEMF Detection Hall

Ordering Part number

Following variants are available.

ZPS2683CS10	With CSP49, 3A part
ZPS2682CS10	With CSP49, 2A part
ZPS2681CS10	With CSP49, 1A part
ZPS2683CS20	With CSP49, 3A part, inrush current control
ZPS2682CS20	With CSP49, 2A part, inrush current control
ZPS2681CS20	With CSP49, 1A part, inrush current control
ZPS2683QS10	With QFN24L, 3A part
ZPS2682QS10	With QFN24L, 2A part
ZPS2681QS10	With QFN24L, 1A part
ZPS2683QS20	With QFN24L, 3A part, inrush current control
ZPS2682QS20	With QFN24L, 2A part, inrush current control
ZPS2681QS20	With QFN24L, 1A part, inrush current control