

Power IN
9-50V
XT30 compatible

CURRENT SHUNT
RESISTOR

MOTOR CONNECTORS

I2C4 voltage select solder jumper
switch 3.3 or 5V for I2C4 connector

INV: SPI3 level shifter direction*

ST
STM32G474
RE
G4
VOLTAGE SELECT
v1.3
RST

6 5V 3V

1 2 3 4 5 6 7 8

VB CORES.COM
DC-15A-1.3

TERM

USR

101 201

ON

5V 3.3V

1 2

Δ INV

+

-

+

A B



VBCore DC motor Driver v1.3

VIN: 9-50V
MAX CURRENT: 15A
MCU: VB32G4 (STM32G474RE)
DRIVER: ALLEGRO A4955
SPI interface
ABZ encoder interface
I2C interface
Current control
I2C EEPROM
CAN / CAN-FD
Dimensions: 51x56mm
Mount holes: 45x50mm D2.5 mm

1. The SPI1 and SPI3 connectors are connected to the controller via level shifters.
2. The Hall sensor connectors are connected to the controller via a filter.
3. The I2C4 SCL and SDA lines have external pull-ups — **do not use the internal pull-up.**
4. To supply power to the I2C4 bus (including the EEPROM), close the voltage selection solder jumper.
5. To use the SPI3 7-pin connector as an SPI bus, leave the INV solder pads open.
Close the INV_1 solder jumper to configure the PA15 and PB4 pins as inputs.
Close the INV_2 solder jumper to configure the PC10 and PC12 pins as inputs.

6. Carefully read datasheet for ALLEGRO A4955 driver futures



www.vbcores.com
Electronics for robotics
research and development

Allegro A4955, 50V
Full-Bridge PWM Gate Driver
designed for control of DC motors

EEPROM

256K, AT24C256C

**For enable, one of I2C4 voltage select solder jumper must be closed*

Voltage control

Resistive voltage divider 16:1

Current shunt resistor

Connected to A4955 driver

Size	Default
1206	R_{SENSE} 0.01 Ohm