

Shenzhen BIGTREE technology co., LTD.

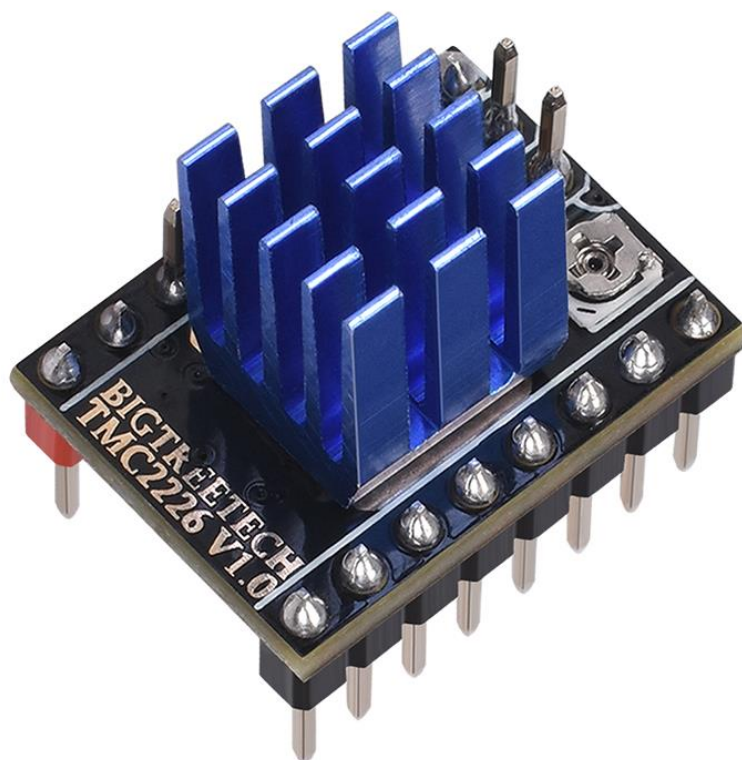
**BIG TREE TECH**

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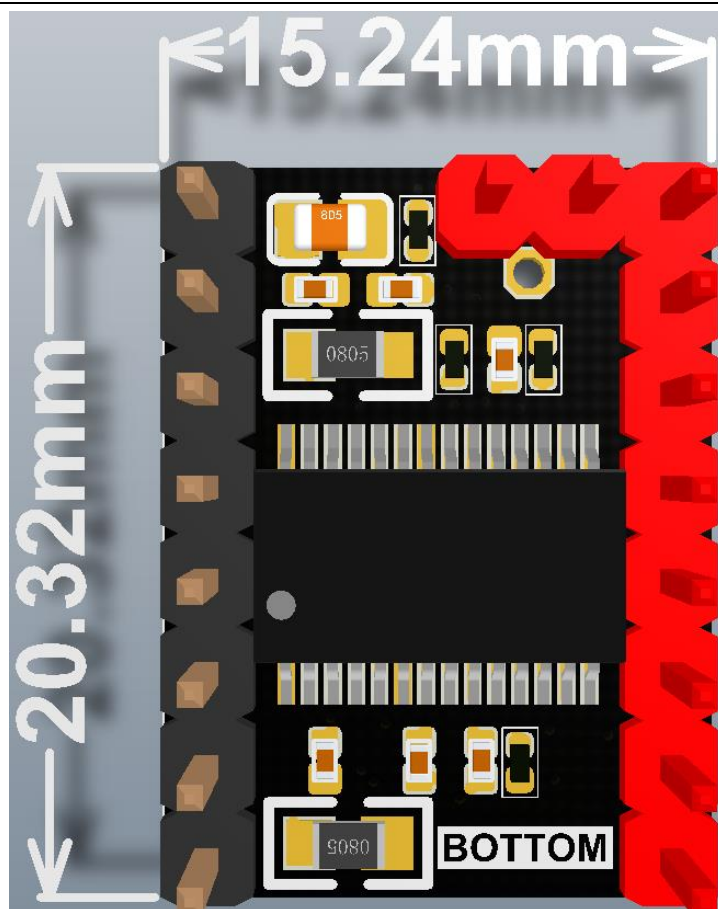
# **BIGTREETECH**

## **TMC2226-V1.0**

### **Stepper motor driver module**



#### **I.Size parameters**

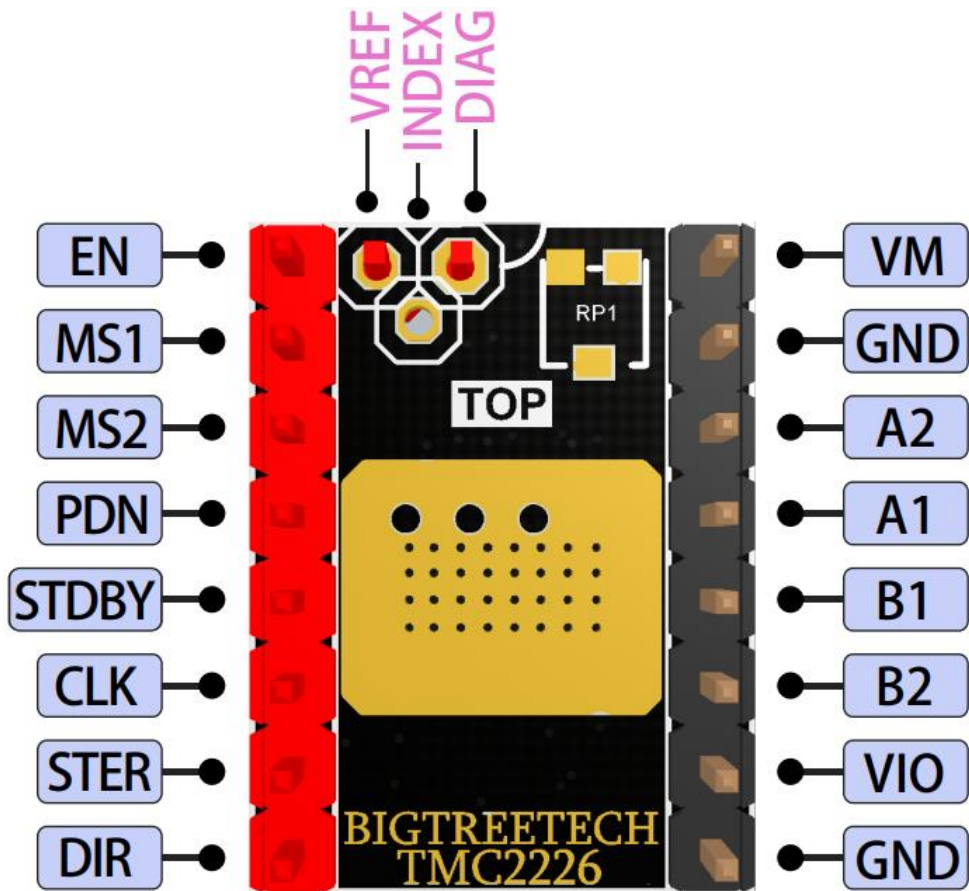


## Parameter description:

- 2-phase** stepper motors up to 2.8A coil current (peak), 2A RMS
- STEP/DIR Interface** with 8, 16, 32 or 64 microstep pin setting
- Smooth Running** 256 microsteps by **MicroPlyer™** interpolation
- StealthChop2** silent motor operation
- SpreadCycle** highly dynamic motor control chopper
- StallGuard4** load and stall detection for StealthChop
- CoolStep** current control for energy savings up to 75%
- Low RDSon, Low Heat-Up** LS 170mΩ & HS 170mΩ (typ. at 25°C)
- Voltage Range** 4.75... 29V DC
- Low Power Standby** to fit standby energy regulations
- Internal Sense Resistor** option (no sense resistors required)
- Passive Braking**, Freewheeling, and automatic power down
- Single Wire UART & OTP** for advanced configuration options
- Integrated Pulse Generator** for standalone motion
- Full Protection & Diagnostics**
- Thermally optimized HTSSOP package** for optical inspection

## II. Working mode description

### 1. STEP/DIR mode:



Subdivision selection:MS1、MS2:

MS1/MS2: CONFIGURATION OF MICROSTEP RESOLUTION FOR STEP INPUT		
MS2	MS1	Microstep Setting
GND	GND	8 microsteps
GND	VCC_IO	32 microsteps (different to TMC2208!)
VCC_IO	GND	64 microsteps (different to TMC2208!)
VCC_IO	VCC_IO	16 microsteps

Standby mode:

STDBY	23	DI (pd)	STANDBY input. Pull up to disable driver internal supply regulator. This will bring the driver into a low power dissipation state. 100kOhm pulldown. (may be left unconnected) <i>Hint: Also shut down VREF voltage and ENN to 0V during standby.</i>
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## 2.UART Working mode:

### Benefits of UART mode:

Motor parameters can be set arbitrarily through firmware or screen;

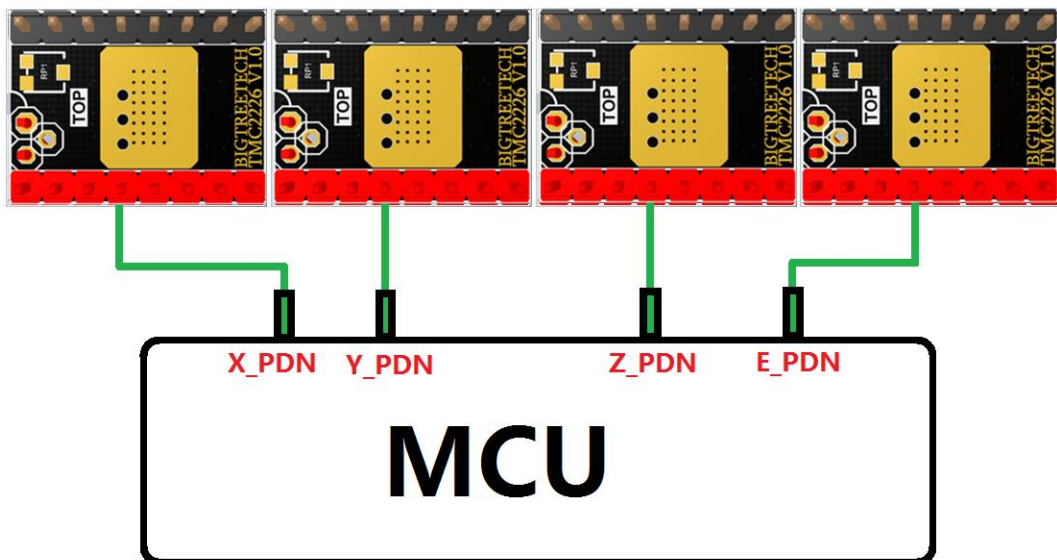
The actual interpolated microsteps can be combined to achieve maximum torque;

Firmware can dynamically switch the stepper motor between stealthChop2 and spreadCycle mode via UART;

Sensorless homing function can be used.

DIAG	15	D0	Diagnostic and StallGuard output. Hi level upon stall detection or driver error. Reset error condition by ENN=high.
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The wiring diagram is as follows:



### III. Firmware description

Firmware(Marlin-BUGFIX-2.0):Use TMC2209 firmware.

The TMC2226 UART mode can be used by directly replacing TMC2226 on the motherboard using the TMC2209UART mode.

### IV. Notes

1. When selecting the working mode of hardware, use the

soldering iron carefully to prevent scalding of hands. After treatment, carefully observe whether there is residual tin slag in the module, and clean it to prevent it from causing the module short circuit burning;

2. Pay attention to the line sequence and IO port when wiring. Connecting the wrong line will directly cause the drive to not work, corresponding to the above connection carefully;

3. When inserting the driver into the motherboard, pay attention to the direction of the driver. Do not insert it backwards to prevent the driver from being burned;

4. Be sure to do the heat dissipation work before the driving work (heat sink and cooling fan);

If you encounter other problems, please contact us. We will definitely answer your questions patiently. If you have any good suggestions on our products, please give us feedback. We will consider them seriously. Thank you for choosing BIGTREETECH products!