# PUTB6560 Bipolar Stepping Motor Driver

Features

- High power, maximum 3.5A drive current
- Motor supply voltage:
    - 7 - 35V with a regulator
    - 4.5 - 5.5V without a regulator (same voltage for motor and logic)
- Jumper selectable step resolution for full step, 1/2, 1/4, 1/16
- Adjustable motor current at 100%, 75%, 50%, 20% of full current
- Adjustable current decay
- Built-in overheat protection
- 2 - 5V -tolerant Enable, Step, and Direction inputs
- PMinMO-compatible interface pinout
- Small form of 1.4x0.9" board dimensions

Layout and Interface
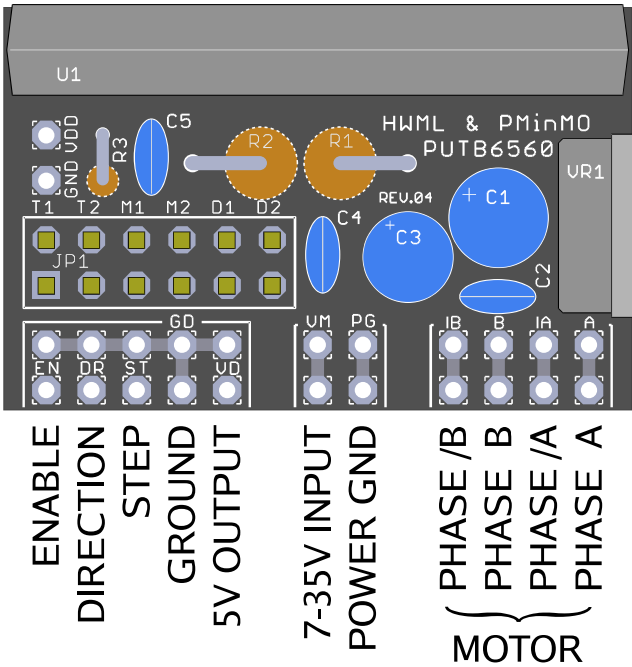
Jumper (JP1) Settings

ON = ▮   OFF = ▯

Current Setting - T1 / T2

Current %	T1	T2
100	OFF	OFF
75	ON	OFF
50	OFF	ON
20	ON	ON

Step Resolution - M1 / M2

Step Resolution	M1	M2
Full Step	OFF	OFF
Half	ON	OFF
Quarter	OFF	ON
Sixteenth	ON	ON

Current Decay - D1 / D2

Decay %	D1	D2
0	OFF	OFF
25	ON	OFF
50	OFF	ON
100	ON	ON

Parts List

Driver Chip - U1	Toshiba TB6560AHQ	HZIP25
Voltage Regulator - VR1	7805 with 35V input, 5V output	TO220
Capacitors		
C1	47uF or more at 35V or more	RADIAL 2.5mm or 0.1"
C2	0.33uF	RADIAL 2.5mm or 0.1"
C3	10uF at 5V or more	RADIAL 2mm
C4	0.1uF	RADIAL 2.5mm or 0.1"
C5	0.33nF = 330pF	RADIAL 2.5mm or 0.1"
C6, C7	0.1uF (optional for high current operation)	SMT 0603
Resistors		
R1, R2	Sense Resistors** (NOT WIREWOUND)	AXIAL
R3	2kOhm (2K)	AXIAL
JP1	6x2 pin header	0.1" pitch

** Value = 0.5 / Current   Example:
   Wattage = 0.5 * Current   Current = 3.3A
$$R = 0.5 / 3.3 \approx 0.15$$
$$W_R = 0.5 * 3.3 \approx 1.7$$
For a current of 3.3A, a value of 0.15 Ohm (0R15) is needed for R1 & R2 at a minimum of 1.7 Watt.

Schematics