tinyPnP — Schematic

RP2040 module (U — RP2040-module)

Left pins (1–20):
- 4 STEPX
- 5 STEPY
- 6 STEPZ
- 7 STEPA
- 9 DIRX
- 10 DIRY
- 11 DIRZ
- 12 DIRA
- 14 EN
- 15 X-EndStop
- 16 Y-EndStop
- 17 Z-EndStop

Right pins (21–40):
- 40 → +5V
- 33 OUT1
- 32 OUT2
- 23 OUT3
- 22 OUT4

C6 0.1u

Power connector: DG301-5.0-02P-12-00A(H), +12V, C5 0.1u, VCC, GND

J1 HDR-M-2.54_1x3 — R2 10k → +5V, R3 10k → GND
ENDSTOP HDR-M-2.54_2x6 — X-EndStop, Y-EndStop, Z-EndStop

Output stage (repeated ×4):

Ref	Resistor (in)	Pull-down	Diode	MOSFET	Cap	Connectors
OUT1	R4 470	R5 10k	D1 1N4148W-T4	Q1 AO3400A	C7 0.1u	JO1 / O1 HDR-M-2.54_1x2
OUT2	R6 470	R7 10k	D2 1N4148W-T4	Q2 AO3400A	C8 0.1u	JO2 / O2 HDR-M-2.54_1x2
OUT3	R8 470	R9 10k	D3 1N4148W-T4	Q3 AO3400A	C9 0.1u	JO3 / O3 HDR-M-2.54_1x2
OUT4	R10 470	R11 10k	D4 1N4148W-T4	Q4 AO3400A	C10 0.1u	JO4 / O4 HDR-M-2.54_1x2

A4988 stepper drivers:

Driver	Jumper (HDR-M-2.54_2x3)	Output (HDR-M-2.54_1x4)	Cap	Step/Dir
UX A4988	JX	X	C1 100u	STEPX / DIRX
UY A4988	JY	Y	C2 100u	STEPY / DIRY
UZ A4988	JZ	Z	C3 100u	STEPZ / DIRZ
UA A4988	JA	A	C4 100u	STEPA / DIRA

A4988 pin labels: EN#, MS1, MS2, MS3, RST#, SLP#, STEP, DIR, VMOT, GND, 2B, 2A, 1A, 1B, VDD, GND

R1 10k: +5V → EN

Signals: VCC, +5V, GND

TITLE: tinyPnP
REV: 1.0
Sheet: 1/1