Bill of Materials

Part Name/Description	Unit Quantity	Unit Prototype Cost	Total Prototype Cost	Unit Production Cost	Total Production Cost	Manufacturer	Manufacturer Part #	Vendor Link	Datasheet Link	Supplier	Supplier Part #	# Ordered	Date Ordered	# Received	Surplus	Schematic Reference Designators
40 Pin 2.54mm Single Row Straight Female PCB Header	2	$0.00	$0.00	$0.00	$0.00	Qunqi	N/A	https://www.amazon.c	N/A	Peralta	N/A	2	2/28/2025		-2	J1, J5, J6, J9, J10, J11
Resistor Kit (10K, 220, 5.1K)	1	$0.00	$0.00	$0.00	$0.00	N/A	N/A	N/A	N/A	Peralta	N/A	1	2/28/2025		-1	R1-R7
12 VDC Two-Phase Bipolar Hybrid Stepper Motor	2	$13.95	$27.90	$13.95	$27.90	Jameco	42HS40-1704B	https://www.jameco.cc	https://www.jameco.cc	Jameco	2327183	1	2/28/2025		-2	External
0.022 µF ±10% 50V Ceramic Capacitor X7R Radial	3	$0.34	$1.02	$0.34	$1.02	KEMET	C317C223K5R5TA	https://www.digikey.cc	https://content.kemet.	Digkey	399-4227-ND	3	2/28/2025		-3	C8
100uF, 50V Electrolytic Capacitor	3	$0.42	$1.26	$0.42	$1.26	Nichicon	UPW1H101MPD	https://www.digikey.cc	https://www.nichicon.c	Digikey	493-1899-ND	3	2/28/2025		-3	C1
330uF, 10V Electrolytic Capacitor	3	$0.14	$0.42	$0.14	$0.42	Würth Elektronik	860020273010	https://www.digikey.cc	https://www.we-online	Digikey	732-8912-1-ND	3	2/28/2025		-3	C2
0.1 µF ±10% 50V Ceramic Capacitor X7R Radial	9	$0.22	$1.98	$0.22	$1.98	Vishay Beyschlag/D	K104K10X7RF5UH5	https://www.digikey.cc	https://www.vishay.coi	Digikey	BC2665CT-ND - Cu	9	2/28/2025		-9	C3, C4, C10
10000 pF ±10% 50V Ceramic Capacitor X7R Radial	6	$0.19	$1.14	$0.19	$1.14	Vishay Beyschlag/D	K103K10X7RF5UH5	https://www.digikey.cc	https://www.vishay.coi	Digikey	BC2662CT-ND	6	2/28/2025		-6	C5, C6
0.22 µF ±5% 50V Ceramic Capacitor X7R Radial	3	$0.84	$2.52	$0.84	$2.52	KEMET	C322C224J5R5TA	https://www.digikey.cc	https://search.kemet.c	Digikey	399-9805-ND	3	2/28/2025		-3	C7
0.47 µF ±10% 50V Ceramic Capacitor X7R Radial	3	$0.55	$1.65	$0.55	$1.65	KEMET	C317C474K5R5TA	https://www.digikey.cc	https://content.kemet.	Digikey	399-C317C474K	3	2/28/2025		-3	C9
Diode 40 V 1A Through Hole DO-41	3	$0.25	$0.75	$0.25	$0.75	STMicroelectronics	1N5819RL	https://www.digikey.cc	https://www.st.com/co	Digikey	497-7053-2-ND	3	2/28/2025		-3	D1
White, Cool 9000K LED Indication - Discrete 3.2V Radial	6	$0.26	$1.56	$0.26	$1.56	Cree LED	C503B-WAN-CBBDB151	https://www.digikey.cc	https://downloads.cree	Digikey	C503B-WAN-CB	3	2/28/2025		-6	LED1, LED2 (D3, D4)
500 mA 250 V AC DC Fuse Cartridge	6	$0.44	$2.64	$0.44	$2.64	Littelfuse Inc.	0217.500MXP	https://www.digikey.cc	https://www.littelfuse.c	Digikey	F1720-ND	6	2/28/2025		-6	F1, F2
Fuse Block 15 A 600V 1 Circuit Cartridge Through Hole	2	$1.49	$2.98	$1.49	$2.98	Littelfuse Inc.	03540101ZXGY	https://www.digikey.cc	https://www.littelfuse.cc	Digikey	F1498-ND	2	2/28/2025		-2	F1, F2
Power Barrel Connector Jack 2.50mm ID	2	$0.92	$1.84	$0.92	$1.84	Würth Elektronik	694108301002	https://www.digikey.cc	https://www.we-online	Digikey	732-5934-ND	2	2/28/2025		-2	J3
Connector Header Through Hole 8 position 0.100" (2.54mm)	4	$0.95	$3.80	$0.95	$3.80	Molex	702460801	https://www.digikey.cc	https://www.molex.coi	Digikey	900-0702460801	4	2/28/2025		-4	J7, J8
220 µH Unshielded Drum Core, Wirewound Inductor 1 A	3	$0.58	$1.74	$0.58	$1.74	Bourns Inc.	RLB9012-221KL	https://www.digikey.cc	https://www.bourns.cc	Digikey	RLB9012-221KL	3	2/28/2025		-3	L1
Black PC Test Point (CHEAPER IN BULK)	20	$0.29	$5.80	$0.29	$5.80	Keystone E	5011	https://www.digikey.cc	https://www.keyelco.c	Digikey	36-5011-ND	10	2/28/2025		-20	TP1-TP9
Buck Switching Regulator IC Positive Fixed 3.3V 1 Output 1A	3	$1.75	$5.25	$1.75	$5.25	Microchip	LM2575-3.3WU-TR	https://www.digikey.cc	https://ww1.microchip	Digikey	150-LM2575-3.3	3	2/28/2025		-3	U2
Bipolar Motor Driver NMOS SPI, Step/Direction 24-HTSSOP	2	$4.17	$8.34	$4.17	$8.34	Texas Instrument	DRV8889QPWPRQ1	https://www.digikey.cc	https://www.ti.com/gei	Digikey	296-DRV8889QF	2	2/28/2025		-2	U1
PIC PIC® XLP™ 18Q Microcontroller IC 8-Bit 64MHz 128KB (128	3	$1.31	$3.93	$1.31	$3.93	Microchip	PIC18F27Q10-I/SO	https://www.digikey.cc	https://ww1.microchip	Digikey	PIC18F27Q10-I/	3	2/28/2025		-3	IC1
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