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	4	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	0	R1-R7
Bipolar Stepper Motor 12VDC 259 mA 7.5°/48 Steps	3	$2.65	$7.95	$13.95	$41.85	Fulling Motor USA	35BYHJ30-36A	https://www.jameco.c	https://www.jameco.c	Jameco	2234476	1	2/28/2025	3	0	External
0.022 µF ±10% 50V Ceramic Capacitor X7R Radial	3	$0.34	$1.02	$0.34	$1.02	KEMET	C317C223K5R5TA	https://www.digikey.c	https://content.kemet	Digkey	399-4227-ND	3	2/28/2025	3	0	C25
100uF, 50V Electrolytic Capacitor	3	$0.42	$1.26	$0.42	$1.26	Nichicon	UPW1H101MPD	https://www.digikey.c	https://www.nichicon.	Digkey	493-1899-ND	3	2/28/2025	3	0	C12
330uF, 10V Electrolytic Capacitor	3	$0.14	$0.42	$0.14	$0.42	Würth Elektronik	860020273010	https://www.digikey.c	https://www.we-online	Digkey	732-8912-1-ND	3	2/28/2025	3	0	C11
0.1 µF ±10% 50V Ceramic Capacitor X7R Radial	9	$0.22	$1.98	$0.22	$1.98	Vishay Beyschlag/	K104K10X7RF5UH5	https://www.digikey.c	https://www.vishay.co	Digkey	BC2665CT-ND - C	9	2/28/2025	9	0	C4, C20, C22, C23, C24
10000 pF ±10% 50V Ceramic Capacitor X7R Radial	6	$0.19	$1.14	$0.19	$1.14	Vishay Beyschlag/	K103K10X7RF5UH5	https://www.digikey.c	https://www.vishay.co	Digkey	BC2662CT-ND	6	2/28/2025	6	0	N/A (Removed from Design)
0.22 µF ±5% 50V Ceramic Capacitor X7R Radial	3	$0.84	$2.52	$0.84	$2.52	KEMET	C322C224J5R5TA	https://www.digikey.c	https://search.kemet.	Digkey	399-9805-ND	3	2/28/2025	3	0	C26
0.47 µF ±10% 50V Ceramic Capacitor X7R Radial	3	$0.55	$1.65	$0.55	$1.65	KEMET	C317C474K5R5TA	https://www.digikey.c	https://content.kemet	Digkey	399-C317C474K	3	2/28/2025	3	0	C22
Diode 40 V 1A Through Hole DO-41	3	$0.25	$0.75	$0.25	$0.75	STMicroelectronics	1N5819RL	https://www.digikey.c	https://www.st.com/co	Digkey	497-7053-2-ND	3	2/28/2025	3	0	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.c	https://downloads.cre	Digkey	C503B-WAN-CE	3	2/28/2025	6	0	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.c	https://www.littelfuse.	Digkey	F1720-ND	6	2/28/2025	6	0	F1
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.c	https://www.littelfuse.	Digkey	F1498-ND	2	2/28/2025	2	0	F1
Power Barrel Connector Jack 2.50mm ID	2	$0.92	$1.84	$0.92	$1.84	Würth Elektronik	694108301002	https://www.digikey.c	https://www.we-online	Digkey	732-5934-ND	2	2/28/2025	2	0	J31
Connector Header Through Hole 8 position 0.100" (2.54mm)	4	$0.95	$3.80	$0.95	$3.80	Molex	702460801	https://www.digikey.c	https://www.molex.co	Digkey	900-070246080	4	2/28/2025	4	0	J32, J33
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.c	https://www.bourns.c	Digkey	RLB9012-221KL	3	2/28/2025	3	0	L1
Black PC Test Point (CHEAPER IN BULK)	20	$0.29	$5.80	$0.29	$5.80	Keystone E	5011	https://www.digikey.c	https://www.keyelco.c	Digkey	36-5011-ND	20	2/28/2025	20	0	J13-J21
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.c	https://ww1.microchip	Digkey	150-LM2575-3.3	3	2/28/2025	3	0	IC2
Bipolar Motor Driver NMOS SPI, Step/Direction 24-HTSSOP	2	$4.17	$8.34	$4.17	$8.34	Texas Instrument	DRV8889QPWPRQ1	https://www.digikey.c	https://www.ti.com/ge	Digkey	296-DRV8889Q	2	2/28/2025	2	0	IC3
PIC PIC® XLP™ 18Q Microcontroller IC 8-Bit 64MHz 128KB (1	3	$1.31	$3.93	$1.31	$3.93	Microchip	PIC18F27Q10-I/SO	https://www.digikey.c	https://ww1.microchip	Digkey	PIC18F27Q10-I/	3	2/28/2025	3	0	IC1

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