

Schematic	Package	Manufacturer	Description	Part Number	DigiKey Part	Qty	Notes
Resistors							
R1	0603 (1608 Metric)	Panasonic - ECG	RES SMD 150 OHM 1% 1/4W 0603	ERJ-PA3F1500V	P150BYCT-ND	1	150 ohm resistor
R2-12	0603 (1608 Metric)	Panasonic - ECG	RES SMD 1K OHM 1% 1/4W 0603	ERJ-PA3F1001V	P1.0KBYCT-ND	11	1k resistors
R13-14	0603 (1608 Metric)	Panasonic - ECG	RES SMD 1.5K OHM 1% 1/4W 0603	ERJ-PA3F1501V	P1.5KBYCT-ND	2	1.5k resistors
R15-18	0603 (1608 Metric)	Panasonic - ECG	RES SMD 4.7K OHM 1% 1/4W 0603	ERJ-PA3F4701V	P4.7KBYCT-ND	4	4.7k resistors
R19-24	0603 (1608 Metric)	Panasonic - ECG	RES SMD 10K OHM 1% 1/4W 0603	ERJ-PA3F1002V	P10KBYCT-ND	6	10k resistors
R25	0603 (1608 Metric)	Panasonic - ECG	RES SMD 100K OHM 1% 1/4W 0603	ERJ-PA3F1003V	P100KBYCT-ND	1	100k resistor
Thermistor							
K1	0603 (1608 Metric)	Murata	THERMISTOR 10K OHM NTC 0603 SMD	NCP18XH103F03RB	490-4800-1-ND	1	Thermistor to measure board temp, 1% 10k.
Capacitors							
C1-2	0603 (1608 Metric)	Kemet	18pF ±5% 50V Ceramic Capacitor MLCC 0603	C0603C180J5GACTU	399-1052-1-ND	2	18pF caps for crystal
C3-4	0603 (1608 Metric)	Kemet	3300pF ±5% 50V X7R Ceramic Capacitor MLCC 0603	C0603C332J5RACTU	399-7901-1-ND	2	33nF (33000 pF)
C5	0603 (1608 Metric)	Kemet	10000pF ±10% 25V Ceramic Capacitor MLCC 0603	C0603C103K3RACTU	399-7840-1-ND	1	0.01uF (10000 pF)
C6-9	0603 (1608 Metric)	Kemet	0.10uF ±10% 25V X7R Ceramic Capacitor MLCC 0603	C0603C104K3RACTU	399-1281-1-ND	4	0.10uF
C10-11	0805 (2012 Metric)	Murata	10uF ±10% 25V X5R Ceramic Capacitor MLCC 0805	GRM21BR61E106KA73L	490-5523-1-ND	2	10uF input/output caps for voltage regulator
C12	0805 (2012 Metric)	Taiyo Yuden	47uF ±20% 6.3V X5R Ceramic Capacitor MLCC 0805	JMK212BJ476MG-T	587-1779-1-ND	1	47uF additional for 5v supply
C13-14	Size G (0.406"/10.30mm square)	Panasonic	CAP ALUM 560UF 20% 25V SMD	EEE-FPE561UAP	PCE4441CT-ND	2	560uF aluminum supply caps
Diodes							
D1	SC-76, SOD-323	Diodes, Inc	DIODE ZENER 15V 200MW SOD323	BZT52C15S-7-F	BZT52C15S-FDICT-ND	1	Zener
D2	1206 (SOD-123)	AVX Corp	DIODE SCHOTTKY 40V 1A 1206	SD1206S040S1R0	478-7805-1-ND	1	Schottky fan motor flyback protection
MOSFETs							
Q1-2	TO-252-3 (DPAK)	Fairchild Semi	MOSFET N-CH 25V 35A TO-252AA	FDD8780	FDD8780CT-ND	2	Reverse protection MOSFETs
Q3	SOT-23-3	International Rectifier	MOSFET N-CH 20V 4.2A SOT-23	IRLML2502TRPBF	IRLML2502PBFACT-ND	1	Fan control MOSFET
Motor Drivers							
U1-2	30-MPSO (MultiPowerSO)	ST Micro	IC MOTOR DRIVER PAR 30MULTIPWRSO	VNH2SP30TR-E	497-4501-1-ND	2	VNH2SP30
Microcontroller							
U3	32-TQFP	Atmel	IC MCU 8BIT 32KB FLASH 32TQFP	ATMEGA328P-AUR	ATMEGA328P-AURCT-ND	1	ATmega 328
Crystal							
XT1	ASE	Abrakon	Crystal 16.000MHz 18pF 4-SMD, No Lead (DFN, LCC)	ABM8G-16.000MHZ-18-D2Y-T	535-10267-1-ND	1	16MHz SMD Crystal, 18pf
Voltage Regulator							
LDO	TO-261-4/SOT-223	ON Semi	IC REG LDO 5V 1A SOT223	NCP1117ST50T3G	NCP1117ST50T3GOSCT-ND	1	5V regulator.
LEDs							
D14	0805	Lite-On, Inc	LED RED CLEAR 0805 SMD	LTST-C170CKT	160-1176-1-ND	1	Red, 1.8 fv, 10mA, 10mcd. Green dots represent anode (face away from bar).
D18	0805	Lite-On, Inc	LED BLUE CLEAR 0805 SMD	LTST-C170TBKT	160-1579-1-ND	1	Blue, 3.3 fv, 20mA, 104mcd. Green dots represent cathode (face towards bar).
Switch							
S1	7.2mm x 3.0mm	C&K	SWITCH SLIDE SPDT 100MA 12V	AYZ0102AGRLC	401-2012-1-ND	1	Switch for address selection.
Connectors							
JP1-3	5mm pitch	OnShore Technology	TERMINAL BLOCK 5MM VERT 3POS PCB	OSTTC030162	ED2601-ND	2	5mm pitch screw terminal, 3-position, 14-22 AWG wire, 16 amps
JP4-5	Header	JST	CONN HEADER XH TOP 2POS 2.5MM	B2B-XH-A(LF)(SN)	455-2247-ND	2	2 position XH header: fan, voltage passthrough to TCB
JP6	Header	JST	CONN HEADER PH SIDE 3POS 2MM SMD	S3B-PH-SM4-TB(LF)(SN)	455-1750-1-ND	1	JST PH surface mount side entry for serial from TCB/controller
JP7-8	Header	Sullins Connector	CONN HEADER .100" SNGL STR 20POS	PRPC020SAAN-RC	S1011EC-20-ND	0.7	20 position header - break apart for J7 and J8
JP7	Header		Construct from above				2x3 ISP connector - or use pogo sticks
JP8	Header		Construct from above				1x6 Serial/FTDI connector
JP9-10	Header	Banggood	2.54mm 3x40P Male Pins Three Row Right Angle Pin Header		972983	0.05	3x2 right angle RC connectors. DigiKey doesn't have - buy from Banggood or HobbyKing.
Heatsink							
	14x14x6mm	Aliexpress	Aluminum chip heatsink		32413425229	2	Mount on top of VNH2SP30 chips