



BILL OF MATERIALS

Item	Quantity	Reference	Part / Value	Tolerance %	Voltage	Current	WATT	TECNOLOGY information	PACKAGE	Manufacturer	Manufacturer Code	RS/Distelec/Other Code	More Info
1	3	C1, C4, C9	2.2n - Y1	20%	250Vac			Ceramic Y1 capacitor	pitch 10mm	MURATA	DE1E3KX222M		DE1E3KX222M
2	6	C2, C3, C6, C7, C10, C11	680n					Metallized Polypropylene Film Capacitor	18.1x7.5x12.1mm	PANASONIC	ECWF2W684JA		LxTxH - pitch 15mm
3	2	C5, C8	270u					Aluminum electrolytic capacitor	30x40mm	PANASONIC	EETHC2W271DA		DxL - pitch 10mm
4	3	C12, C16, C19	100u	20%	25V			YXF - Miniature Aluminum Electrolytic Capacitor	6.3x11mm	Rubycon			DxL - pitch 2.5mm
5	2	C13, C18	47u	20%	25V			YXF - Miniature Aluminum Electrolytic Capacitor	5x11mm	Rubycon			DxL - pitch 2mm
6	3	C14, C21, C22	470u	20%	25V			YXF - Miniature Aluminum Electrolytic Capacitor	10x16mm	Rubycon			DxL - pitch 5mm
7	1	C15	100n 305VAC	10%				Polypropylene Film Capacitors	13x6x12mm	AVX			LxWxH - pitch 10mm
8	1	C17	1000u					Aluminum electrolytic capacitor	24x45mm	EPCOS	B43508A2108M000		DxL - pitch 10mm
9	1	C20	10u	20%	63V			YXF - Miniature Aluminum Electrolytic Capacitor	5x11mm	Rubycon			DxL - pitch 2mm
10	12	C23, C26, C30, C31, C32, C34, C38, C39, C40, C42, C46, C47	100n	10%	50V			X7R - SMD Ceramic capacitor	0805	AVX			
11	3	C24, C33, C41	1n	10%	500V			X7R - SMD Ceramic capacitor	1206	AVX			
12	1	C25	3.3n	10%	50V			X7R - SMD Ceramic capacitor	0805	AVX			
13	3	C27, C35, C43	470n	10%	50V			X7R - SMD Ceramic capacitor	0805	AVX			
14	3	C28, C36, C44	1n	10%	50V			X7R - SMD Ceramic capacitor	0805	AVX			
15	3	C29, C37, C45	100n					X7R - SMD Ceramic capacitor	0805	AVX			
16	3	C48, C57, C62	1u	10%	25V			X7R - SMD Ceramic capacitor	0805	AVX			
17	1	C49	270n	10%	25V			X7R - SMD Ceramic capacitor	0805	AVX			
			1n	10%	25V			X7R - SMD Ceramic capacitor	0805	AVX			
			390p	10%	25V			X7R - SMD Ceramic capacitor	0805	AVX			
20	1	C52	56p	10%	25V		COG (NP0) - SMD Ceramic capacitor	1206	AVX				
21	1	C53	100n	10%	25V		X7R - SMD Ceramic capacitor	0805	AVX				
22	2	C54, C56	100n	10%	25V		X7R - SMD Ceramic capacitor	0805	AVX				
23	1	C58	1n	10%	50V			COG (NP0) - SMD Ceramic capacitor	0805	AVX			
24	1	C59	100p	10%	50V			COG (NP0) - SMD Ceramic capacitor	0805	AVX			
25	1	C60	2.2n	10%	50V			X7R - SMD Ceramic capacitor	0805	AVX			
26	1	C61	1.5n	10%	50V			COG (NP0) - SMD Ceramic capacitor	0805	AVX			
27	1	C63	100n	10%	50V			X7R - SMD Ceramic capacitor	0805	AVX			
28	1	C64	33n	10%	50V			X7R - SMD Ceramic capacitor	0805	AVX			
29	1	C65	3.3n	5%	50V			COG (NP0) - SMD Ceramic capacitor	0805	AVX			
30	1	C66	22n	5%	50V			COG (NP0) - SMD Ceramic capacitor	0805	AVX			
31	5	D1, D2, D3, D4, D7	Green					TH Green LED	T-1 (3mm)	AVAGO TECHNOLOGIES	HLMP-Y802-F0000	COD. Farnell 1863181	
32	1	D5	PKC-136					Peak Clamp	DO-15	STMicroelectronics	PKC-136		
33	2	D6, D8	Red					TH Red LED	T-1 (3mm)	AVAGO TECHNOLOGIES	HLMP-Y651-G0000	COD. Farnell 1735245	
34	12	D9, D10, D14, D15, D17, D18, D21, D22, D25, D26, D28, D29	STPS20200CG					High Voltage Power Schottky Rectifier	D2PAK	STMicroelectronics	STPS20200CG		
35	8	D11, D12, D16, D19, D23, D24, D31, D33	1N4148WS					SMD Diode	SOD-323		1N4148WS		
36	3	D13, D20, D27	STTH1L06A					SMD Turbo 2 ultrafast high voltage rectifier	SMA	STMicroelectronics	STTH1L06		



BILL OF MATERIALS

Item	Quantity	Reference	Part / Value	Tolerance %	Voltage Current	WATT	TECNOLOGY information	PACKAGE	Manufacturer	Manufacturer Code	RS/Distelec/Other Code	More Info
37	3	D30, D32, D34	STTH102A				SMD High efficiency ultrafast diode	SMA	STMicroelectronics	STTH102A		
38	1	D35	BAT20J				SMD Ultra low leakage current schottky diode	SOD-323	STMicroelectronics	BAT20J		
39	1	D36	B-15	2%			Zener Diode	MiniMELF	VISHAY	TZMB15		
40	3	HS1, HS2, HS3	OS515-50B				Heat Sink	50x30x45mm	AAVID THERMALLOY	OS515-50B		LxTxH - 1 for each HB - 1/3 of OS515-150B
41	2	ISO1, ISO2	SFH618A-3				Optocoupler, single channel	DIP-4	VISHAY	SFH618A-3		
42	1	J1	HVIN				HV DC input connector	5 pin	MOLEX	26-60-4050		pitch 3.96mm - center pin removed
43	1	J2	VDC				LV primary DC connector	5 pin	PHOENIX CONTACT	1729157		pitch 5.08mm
44	1	J3	OUT				Output Voltage screw connector	3 pin	PHOENIX CONTACT	MSTBVA2.5/3-G-5,08 MSTB2.5/3-ST-5.08	Farnell: 3705274 and 3705365	Order both contacts
45	1	J4	CON50A				50 pins connector	2 x 25pin - male				pitch 2.54mm - 90 degrees
46	3	L1, L4, L5	10u	10%			SMD Inductance	1008	ELJPC100KF	ELJPC100KF		
47	2	L2, L3	33u	10%			SMD Inductance	1812	EPCOS	B8243ZT1333K000		
48	6	Q1, Q2, Q3, Q4, Q5, Q6	STF21N65M5				MDmesh V Power MOSFET	TO-220FP	STMicroelectronics	STF21N65M5		
49	6	Q7, Q9, Q11, Q13, Q15, Q17	PBSS4041PT				SMD PNP General Purpose Amplifier	SOT-23			COD. Farnell 1829359	
50	6	Q8, Q10, Q12, Q14, Q16, Q18	PBSS4041NT				SMD NPN General Purpose Amplifier	SOT-23			COD. Farnell 1829356	
51	1	Q19	STN3PF06				P-channel Power Mosfet	SOT223	STMicroelectronics	STN3PF06		
52	5	Q20, Q22, Q23, Q25, Q26	BC847C				General Purpose NPN	SOT23		BC847C		
53	2	Q21, Q24	BC857C				General Purpose PNP	SOT23		BC857C		
54	3	RS_1, RS_2, RS_3	20m	1%			SMD Resistor	1206	BC COMPONENTS			
55	6	R1, R11, R16, R25, R30, R40, R119	5R6	5%			SMD Resistor	0805	BC COMPONENTS			
56	6	R2, R13, R17, R27, R31, R42	1k	5%			SMD Resistor	0805	BC COMPONENTS			
57	6	R3, R14, R20, R28, R34, R43	2.2R	5%			SMD Resistor	0805	BC COMPONENTS			
58	11	R4, R12, R18, R26, R32, R35, R41, R51, R56, R70, R71	100k	5%			SMD Resistor	0805	BC COMPONENTS			
59	6	R5, R15, R19, R29, R33, R44	20R	5%			SMD Resistor	0805	BC COMPONENTS			
60	6	R6, R9, R21, R23, R36, R38	20R	5%			SMD Resistor	1206	BC COMPONENTS			
61	1	R7	15k	5%			SMD Resistor	0805	BC COMPONENTS			
62	5	R8, R22, R37, R60, R65	10k	1%			SMD Resistor	0805	BC COMPONENTS			
63	3	R10, R24, R39	1.1k	1%			SMD Resistor	0805	BC COMPONENTS			
64	4	R45, R61, R62, R78	10k	5%			SMD Resistor	0805	BC COMPONENTS			
65	3	R46, R49, R55	2.7M	1%			SMD Resistor	1206	BC COMPONENTS			
66	5	R47, R48, R52, R64, R76	1.2k	5%			SMD Resistor	0805	BC COMPONENTS			
67	1	R50	1.1k	1%			SMD Resistor	1206	BC COMPONENTS			
68	1	R53	13k	1%			SMD Resistor	0805	BC COMPONENTS			
69	1	R54	56k	1%			SMD Resistor	1206	BC COMPONENTS			
70	2	R57	10R	5%			SMD Resistor	0805	BC COMPONENTS			
71	1	R58	35.7k	1%			SMD Resistor	1206	BC COMPONENTS			
72	2	R59, R75	6.8k	5%			SMD Resistor	0805	BC COMPONENTS			
73	1	R63	12k	5%			SMD Resistor	0805	BC COMPONENTS			
74	1	R66	30k	1%			SMD Resistor	0805	BC COMPONENTS			
75	1	R67	200k	1%			SMD Resistor	0805	BC COMPONENTS			
76	1	R68	22k	1%			SMD Resistor	0805	BC COMPONENTS			
77	1	R69	330R	5%			SMD Resistor	0805	BC COMPONENTS			
78	2	R72, R73	20k	5%			SMD Resistor	0805	BC COMPONENTS			
79	1	R74	10k	5%			SMD Resistor	0805	BC COMPONENTS			
80	1	R77	750k	1%			SMD Resistor	1206	BC COMPONENTS			
81	1	R79	91k	1%			SMD Resistor	0805	BC COMPONENTS			
82	1	R80	3.3k	5%			SMD Resistor	0805	BC COMPONENTS			
83	1	R81	2.2k	1%			SMD Resistor	0805	BC COMPONENTS			
84	2	R82, R86	360k	1%			SMD Resistor	1206	BC COMPONENTS			
85	1	R83	2.7k	5%			SMD Resistor	0805	BC COMPONENTS			
86	1	R84	3k	5%			SMD Resistor	0805	BC COMPONENTS			
87	1	R85	3.6k	5%			SMD Resistor	0805	BC COMPONENTS			
88	1	R87	18k	1%			SMD Resistor	0805	BC COMPONENTS			
89	1	R88	15k	1%			SMD Resistor	0805	BC COMPONENTS			
90	1	R89	220k	1%			SMD Resistor	0805	BC COMPONENTS			
91	1	R90	1M	1%			SMD Resistor	0805	BC COMPONENTS			



BILL OF MATERIALS

Item	Quantity	Reference	Part / Value	Tolerance %	Voltage	Current	WATT	TECNOLOGY information	PACKAGE	Manufacturer	Manufacturer Code	RS/Distelec/Other Code	More Info
92	3	T1, T3, T5	n.m.					HB Transformer	ETD44	Magnetica		n.m.	Pin #4, #5 and #6 on primary side are removed
93	3	T2, T4, T6	1892.0040					HB Transformer	ETD49	Magnetica			Pin #11, #12 and #15 on primary side are removed
94	1	T7	1921.0049					AUX supply transformer	E13	Magnetica			
95	3	U1, U2, U3	L6391					High-voltage high and low side driver	SO-14	STMicroelectronics	L6391		
96	1	U4	LD1086D2T33TR					3V3 linear regulator	D2PAK	STMicroelectronics	LD1086D2T33TR		
97	1	U5	VIPER06HS					Fixed Frequency Viper family	SSO10	STMicroelectronics	VIPER06HS		
98	1	U6	TSX561A					Single OPAMP	SOT23-5	STMicroelectronics	TSX561A		
99	1	U7	TSM1013A					Constant Voltage and Constant Current Controller	MiniSO-8	STMicroelectronics	TSM1013A		
100	2	C201, C202	n.m.					COG (NP0) - SMD Ceramic capacitor	0603	AVX			
101	3	C203, C204, C210	1uF	10%	10V			Y5V - SMD Ceramic capacitor	0603	AVX		RS-391-050	
102	4	C205, C206, C207, C208	100nF	10%	25V			X7R - SMD Ceramic capacitor	0603	AVX			
103	1	C209	10nF	10%	50V			X7R - SMD Ceramic capacitor	0603	AVX			
104	5	C211, C212, C213, C214, C215	100p	10%	50V			COG (NP0) - SMD Ceramic capacitor	0603	AVX			
105	8	C216, C217, C218, C219, C220, C221, C222, C223	100p	10%	50V			X7R - SMD Ceramic capacitor	0603	AVX			
106	1	J201	DC in					2 pin WAGO connector					
107	1	J202	CON50A					50 pins connector	2 x 25pin - female				
108	1	J203	SWIM I/F					PCB HEADER single row	4 pin				pitch 2.54mm - straight
109	1	J204	UART I/F					3.5mm Jack connector				RS-705-1490	pitch 2.54mm - straight
110	1	J205	PIN_STRIP_10					PCB HEADER single row	10 pin				pitch 2.54mm - straight - n.m.
111	1	J206	PIN_STRIP_9					PCB HEADER single row	9 pin				pitch 2.54mm - straight - n.m.
112	1	J207	PIN_STRIP_4					PCB HEADER single row	4 pin				pitch 2.54mm - straight - n.m.
113	1	J208	PIN_STRIP_5					PCB HEADER single row	5 pin				pitch 2.54mm - straight - n.m.
114	1	J209	PIN_STRIP_10					PCB HEADER single row	10 pin				pitch 2.54mm - straight - n.m.
115	1	L201	WE-CBF					SMD EMI Suppression Ferrite Bead	0603	WE	74279262	RS-669-4005	
116	1	P201	RESET					Push button				RS-183-701	
117	57	R201, R202, R203, R204, R205, R206, R207, R208, R209, R210, R211, R212, R213, R214, R215, R216, R217, R218, R219, R220, R221, R222, R223, R224, R225, R226, R227, R228, R229, R230, R231, R232, R233, R234, R235, R236, R237, R238, R239, R240, R241, R242, R243, R244, R245, R246, R247, R248, R249, R250, R251, R252, R256, R257, R259, R269, R270	0R	5%				SMD Resistor	0603	BC COMPONENTS			
118	13	R253, R254, R255, R258, R260, R261, R262, R263, R264, R265, R266, R267, R268	100R	5%				SMD Resistor	0603	BC COMPONENTS			
119	1	U201	STNRG388A					STNRG388A	TSSOP38	STMicroelectronics			
120	1	X201	n.m.					XTAL 16MHz				RS-693-8819	