

Bill of Materials

Count	RefDes	Value	Description	Size	Part Number	Mfr
1	C1	47uF	Capacitor, Aluminum Electrolytic, 35V	0.197 inch	ECA-1VM470	Panasonic
3	C18, C19, C20	330uF	Capacitor, Aluminum, 450V, 20%, -40C° to 105C°	1.379 in Dia.	EETUQ2W331EA	Panasonic
5	C2, C6, C8, C12, C13	0.01uF	Capacitor, Ceramic, 25V, X7R, ±10%	0603	Std	Std
1	C3	0.47uF	Capacitor, 0.47UF, 305VAC, EMI SUPPRESSN	0.336 x 1.043 inch	BFC233820474 {Digikey BC1617-ND}	Vishay
6	C4, C5, C9, C11, C16, C17	1.0uF	Capacitor, Ceramic, 25V, X5R, ±10%	0603	Std	Std
4	C7, C10, C14, C15	0.1uF	Capacitor, Ceramic, 25V, X7R, ±10%	0603	Std	Std
6	CL1, CL2, CL3, CL4, CL5, CL6	N/A	Jumper, 0.400 inch length, PVC Insulation, AWG 22,	0.060 x 0.400 inch	923345-04-C	3M
1	D1	GBJ2506	RECT BRIDGE GPP 25A 600V GBJ	1.190 x 0.190 inch	GBJ2506-BP	Diodes
1	D2	BAV99	DIODE SW DUAL 75V 350MW SOT23	SOT23	BAV99-7-F	Diodes
1	D3	FR805	RECT FAST REC 600V 8A TO-220A	TO220AC	FR805	Diodes
2	D4, D8	CSD06060A	Diode, UltraFast Rectifier, 6-A, 600-V	TO220AC	CSD06060A	CREE
4	D5, D6, D9, D11	BAS16	Diode, Switching, 150-mA, 75-V, 350mW	SOT23	BAS16-V-GS08	Vishay-Liteon
2	D7, D10	33V	Diode, Zener, 33-V @ 3.8-mA, 225-mW, 5%	SOT23	MMBZ5257BLT1	Motorola
1	FB1	20A	Fuseholder, .250inch fuses, board mount (Qty: 2)	1.54 x 0.30 inch	01220083H	Littlefuse
1	F1	20A	Fuse, Fast-Acting, 1-1/4" x 1/4" (in pcb-clips)	1-1/4" x 1/4"	0314020.HXP	Littelfuse
3	HS1, HS3, HS5	780653B1180	Heatsink, Vertical-mount	1.180 x 0.764 inch	780653B1180	Aavid
2	HS2, HS4	592502	Heatsink, TO-220, Vertical-mount, 30°C/W	0.88 x 0.25 inch	592502B03400G	Thermalloy
3	J1, J2, J3	62409-1	CONN, Tab Faston TH	0.033 x 0.250 inch	62409-1	Tyco
4	J4, J5, J6, J7	70543-0036	Header, Shrouded 2-pin, 100mil spacing	0.200 x 0.500 inch	70543-0036	Molex
1	J8	PPTC161LFBN-RC	Header, 16-pin, 100mil spacing, Female	0.100 inch x 16	PPTC361LFBN-RC	Sullins
2	J9, J10	CX35-36-C	LUG FIXED, #6-14, 50A, 3/16 inch, Copper/Tin, Uninsulated	0.375 x1.00 inch	CX35-36-C	Panduit
1	JP1	923345-20-C	Jumper, 2.000 inch length, PVC Insulation, AWG 18	0.035 inch Dia.	923345-20-C	3M
1	K2	G2R-1A-E-DC12	Relay, Reed, DPST, 16A, 250VAC	0.210 x 0.810 inch	G2R-1A-E-DC12	Omron
2	L1, L2	78 uH	Inductor,	0.913 X 1.165 inch	AF4860	Vitec
1	Q1	TIP29	Transistor, NPN 1A, 40V	TO-220V	TIP29-BP	Micro Commercial Co
1	Q2	ZXMP6A17E6TA	MOSFET P-CH 60V 3A SOT-23-6	SOT23-6	ZXMP6A17E6TA	Zetex
4	Q3, Q4, Q5, Q6	STP20NM50	MOSFET, N-ch, 500V-V, 20-A, 250-milliOhms	TO-220V	STP20NM50	ST
3	R1, R31, R33	1k	Resistor, Chip, 1/16W, ±1%	0603	Std	Std
1	R10	24.9k	Resistor, Chip, 1/16W, ±1%	0805	Std	Std
4	R14, R15, R20, R21	22	Resistor, Chip, 1/16W, ±1%	0603	Std	Std

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4	R16, R17, R22, R23	3.3	Resistor, Chip, 1/16W, ±1%	0603	Std	Std
4	R18, R19, R24, R25	10k	Resistor, Chip, 1/16W, ±1%	0603	Std	Std
1	R2	330	Resistor, Chip, 1/16W, ±1%	0603	Std	Std
1	R26	1k	Resistor, Chip, 1/16W, ±1%	0805	Std	Std
1	R3	402k	Resistor, Chip, 1/16W, ±1%	0603	Std	Std
2	R30, R32	470	Resistor, Chip, 1/16W, ±1%	0603	Std	Std
1	R4	4.7k	Resistor, Chip, 1/16W, ±1%	0603	Std	Std
1	R5	28.7k	Resistor, Chip, 1/16W, ±1%	0603	Std	Std
1	R6	7.5k	Resistor, Chip, 1/16W, ±1%	0603	Std	Std
5	R7, R11, R12, R27, R28	1.07M	Resistor, Chip, 1/16W, ±1%	0805	Std	Std
4	R8, R9, R13, R29	1.05M	Resistor, Chip, 1/16W, ±1%	0805	Std	Std
1	RT1	V275LA40AP	Varistor, Disk, 275V	0.220 x 1.043 inch	V275LA40AP	Littelfuse
1	RT2	7 Ohm	Varistor, Disk, 265V max., 15A @ 65C°	0.200 x 1.180 inch	SL32 10015	Amethern
2	T1, T2	CS4100V	Transformer, Current Sense, 100:1	0.570 x 0.770 inch	CS4100V-01L	Coilcraft
1	TP14	3149	Pin, Thru Hole, Tin Plate, for 0.062 PCB's	0.039 inch	3149-2-00-01-00-00-080	Mill Max
1	U1	TL431AID	IC, Adj Shunt Regulator, 100-mA, 36-V	SO8	TL431AID	TI
1	U2	TL431AIDBZR	IC PREC SHUNT REG ADJ SOT23-3	SOT23-3	TL431AIDBZR	TI
4	U3, U4, U5, U6	UCC27322DGN	IC, Single 9-A High Speed Low-Side MOSFET Driver/Enable	MSOP-8	UCC27322DGN	TI
1	Daughter Card	PR780	Controller board	2.1" x 1.4"	PR780	TI
1	--		PCB, 7.7 In x 3.6 In x 0.0625 In		PR779	Any
2	2x @ HS1	Screw	Pan Head Screw M3 (steel) 0.315" (8.00mm)	0.315" (8.00mm)	Std	Std
2	2x @ HS1	Spacers	Board Spacers, Standoffs, 0.125" (3.2mm) 1/8", Nylon #4	0.125 x 0.250	875	Keystone Electronics
4	2x @ HS3, HS5	Screw	Pan Head Screw M3 (steel) 0.236" (6.00mm)	0.236" (6.00mm)	Std	Std
6	2x @ HS1, HS3, HS5	Washer	Split Lock Washer M3 (steel)		Std	Std
6	2x @ HS3, HS5. 1x @ HS2, HS4		Thermal Pad Silicon TO220		3223-07FR-51	BERQUIST
2	1x @ HS2, HS4	Nut	Std #4/40 Steel nut		Std	Std
2	1x @ HS2, HS4	Screw	Pan Head Screw #4/40 Steel 0.5"		Std	Std
2	1x @ HS2, HS4	Washer	Split Lock Washer #4 (steel)		Std	Std
2	1x @ HS2, HS4	Shoulder Washer	WASHER/BUSHING #4 .031"L NYLON		3049	Keystone Electronics

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