

Item	Qty	Reference	MFG	PN	Part Name	Description	Notes
13	1	C1			2.2uF Capacitor, Ceramic Chip, 60V, ±10%,1206	Capacitor, Ceramic Chip, 60V, ±10%	
32	2	C2-3	TDK	B32674D4155K	CA, 1.5 uF	Capacitor, Poly Film 450 V, ±10%, B32674D4155K (DK 495-2917-ND)	
	0	C4-5		DNI	NL	NL	DNI
5	1	C6			0.1uF,0603	Capacitor, Ceramic Chip, 100V, ±10%, X7R	
33	1	C7	TDK	B32674D4475K	CAP, 4.7uF	Capacitor, Poly Film 450 V, ±10%, DK p/n 495-2920-ND, EPCOS cap B32674D4475	
3	0	C8			NL	NL	DNI
8	1	C9	United Chemi-con	EKXG451ELL101MM40S	Cap, Elect,100uF	Capacitor, Elect, 450V, DK p/n 565-1481-ND, United Chemi-con p/n EKXG451ELL101MM40S	
7	0	C10	NL	DNI	NL	NL	DNI
12	1	C11,C12			CAP 0805 25V 2.2uF	Capacitor, Ceramic, X7R, 25V	
19	4	C13-16	Murata	GA355QR7GF222KW01L	C2220,2200pF	Capacitor, Ceramic, X1/Y2, 250VAC, GA355QR7GF222KW01L	
36	1	C17	Panasonic	ECQ-U3A224MG	CAP, 0.22uF, 300V, ECQ-U3A224MG	CAP FILM 0.22UF 300VAC RADIAL, DK P111118-ND	
	0	C18 C19 C45 C49-50 C54 C67 C69		DNI	NL	NL	DNI
29	9	C26, C33 C56-57 C59 C62 C65 C78, C98			CAP, 0603, 1n, 6.3V, 10%		
	1	C93			CAP, 0603, 50V,10nF	Capacitor, Ceramic Chip, 50V, ±10%, X7R	
	1	C99			CAP, 0603, 50V,1nF	Capacitor, Ceramic Chip, 25V, ±10%, X7R	
	2	C21, C22			CAP, 0603, 0.22uF, 6.3V, 10%		
	3	C27, C94-95			CAP, 0603, 1uF, 6.3V, 10%		
	1	C92			CAP, 0603, 470p, 6.3V, 10%		
	2	C71, C81			CAP, 0603, 0.47u, 25V, 10%		
	2	C72, C82			CAP, 0805, 10u, 25V, 10%		
	5	C10 C25 C28 C75 C88			CAP, 0603, 100n, 25V, 10%		
	0	C35, C64, C66, C79, C80, C89, C90, C130		DNI	NL	NL	DNI
	1	C48			CAP,1uF,0603,16V	Ceramic Cap,X7R	
38	2	C23-24	AVX	FFB44E0476K	CAP, Film, 47u, 100V, AVX p/n FFB44E0476K	Capacitor, Film, 100V	
10	4	C32, C51-C52, C55			C0805, 1uF	Capacitor, Ceramic, 50V, X7R, +/- 10%	
15	2	C34 C36	AVX	12101A222JAT2A	C1210, 2200pF	Capacitor, Ceramic Chip, 100V, ±10%, 12101A222JAT2A	
35	2	C37-38	TDK	CKG57NX7S2A226M	CAP, 22uF	Capacitor, Ceramic, 100V, +20-55%, CKG57NX7S2A226M	
16	4	C39-40 C42-43	TDK	C3225X7S2A475M	C1210, 4.7uF	Capacitor, Ceramic Chip, 100V, ±10%, C3225X7S2A475M	
17	0	C41, C44		DNI	NL	NL	DNI
30	8	C30 C46 C61 C63 C70 C86 C91 C128			CAP, 0.1uF, 0805	Capacitor, Ceramic Chip, 25V, ±10%	
	0	C20			0.01uF,0603,25V	Capacitor, Ceramic Chip, 16V, ±10%, X7R	
	0	C53	NL	DNI	NL	NL	DNI
4	7	C29 C31 C47 C87 C97 C124 C126			C0603, 0.1u	Capacitor, Ceramic Chip, 25V, ±10%	
11	10	C58 C60 C68 C73-74 C76-77 C83-85			C0805,1uF	Capacitor, Ceramic Chip, 25V, ±10%, X7R	
18	1	C96			C1812, 0.1uF, 500V, 10%	Capacitor, Ceramic, 500V, 1812, STD	
31	1	C127			Cap, 0603, 0.01u, 6.3V, 10%		
20	0	C220		DNI	NL	NL	DNI
25	1	C:C1			C0805_25V_X7R,10u	CAP CER 25V 10% X7R 0805	
28	2	C:C8 C:C15			C1206, 22u	CAP CER 25V 10% X7R 1206	
37	2	C:C11 C:C18		DK p/n P5154-ND	CAP, 330u	CAP ALUM 330UF 25V 20% RADIAL	
27	2	C:C12 C:C19			C1206, 10u	CAP CER 25V 10% X7R 1206	
	0	C:C9-10 C:C16-17		DNI	NL	NL	DNI
24	2	C:C13 C:C20			C0805,100n	CAP CER 25V 10% X7R 0805	
26	2	C:C14 C:C21			C0805, 4u7	CAP CER 25V 10% X7R 0805	
	1	C105	AVX	1812GC102KAT1A	1000pF,X7R,2000V	SURFACE MOUNT CAPACITOR 0.080 X 0.180 INCHES	
	1	C102			100nF,16V,X7R,0603		
42	2	C:JP2-3		DK p/n CP-002AH-ND	CONN, Power Jack	CONN PWR JACK 2.1X5.5MM HIGH CUR	
80	3	C:LD2-3 E:LD1		DK p/n 404-1021-1-ND	LED0805, GREEN, GREEN	LED GREEN 0805 SMD, Diffused, 567nm	
86	2	C:M2-3	TI	PTH08080WAH	MOD_PTH08080WAH	MODULE PIP_9-5.5V 2.25A HORZ TH	
125	2	C:R3 C:R5			R0805 1%,330R	RES 1/8W 1% 0805 SMD	
126	2	C:R4 C:R6			R0805 1%,470R	RES 1/8W 1% 0805 SMD	
68	0	C:U2	NL	NL	NL	NL	DNI
67	1	C:U3	TI	TPS79533DCQ	IC_LDO_TPS79533DCQ	IC LDO REG 3.3V 500MA SOT223-6	

Item	Qty	Reference	MFG	PN	Part Name	Description	Notes
53	6	D1-5, D33	CREE	CSD10060G	Diode,CSD10060G	Diode, Schottky Rectifier, 10A, 600V	
	0	D6, D19		DNI	NL	NL	DNI
46	9	D7 D9-10 D13 D23-24 D26-27 D29	DIODES INC	BAT54S	D-BAT54S, SOT23-3	Diode, Dual Schottky, 200-mA, 30-V, Vishay p/n BAT54S	
50	4	D8 D11-12 D16	SPC MULTICOMP	BZT52C15	D-ZENER_SOD-123, BZT52C15	Diode, Zener, 15V, 500mW	
2	8	D14-15 D22 D25 D18 D30-32	FAIRCHILD	MBR0530	Diode, Schottky, MBR0530, SOD-123	Diode, Schottky, 0.5A, 30V	
	1	D34		SDM10U45-7-F	SDM10U45-7-F	Diode, Schottky, 45V, 100mA	
	1	D35		DFLS1100-7	DFLS1100-7	Diode, Schottky, 1A, 100V	
45	2	D17 D20	FAIRCHILD	BAT54	Diode,BAT54	Diode, Schottky, 200-mA, 30-V, DK p/n BAT54FSCT-ND	
44	0	D21		DNI	NL	NL	DNI
48	1	D28	COMCHIP	DF06-G	D-BRIDGE, DF06-G	Bridge Rectifier, 600V, 1A, Glass Passivated, SMD	
47	1	D220	VISHAY	BAV70-E3-08	Diode Dual, BAV70-V	Diode, Switching, Dual, 70-V, 250-mA	
34	1	E:C1	KYOCERA	SA111E104MAR	CAP_CER_SA111E104MAR,100n	CAP CER 0.1UF 100V 20% AXIAL	
22	3	E:C2 E:C5-6			C0603_16V_X7R,1u	CAP CER 16V 10% X7R 0603	
21	14	E:C3-4 E:C8-19			C0603_16V_X7R,100n	CAP CER 16V 10% X7R 0603	
23	1	E:C7			C0603_16V_X7R,2u2	CAP CER 16V 10% X7R 0603	
52	1	E:DA1	ZETEX / DIODES INC	BAW567DW-7-F	DIODE_ARRAY_BAW567DW-7-F	DIODE ARRAY SW QUAD 200MW SC70-6	
59	0	E:J1		NL	NL	NL	DNI
57	2	E:J2-3			HEADER_1X2_100	Header, Male, 1x2-pin, 100mil spacing	
43	0	E:JP1		NL	NL	NL	DNI
78	2	E:L1-2	MURATA	LQM21FN220N00L	L0805_LQM21FN220N00L,22u	INDUCTOR 22UH 13MA 0805	
117	1	E:R1			R0603_1%,470R	RES 1/10W 1% 0603 SMD	
109	1	E:R2			R0603_1%,1K	RES 1/10W 1% 0603 SMD	
106	1	E:R3			R0603_1%,10K	RES 1/10W 1% 0603 SMD	
111	1	E:R4			R0603_1%,1M	RES 1/10W 1% 0603 SMD	
114	3	E:R5 E:R10-11			R0603_1%,2K2	RES 1/10W 1% 0603 SMD	
118	1	E:R6			R0603_1%,47K	RES 1/10W 1% 0603 SMD	
113	2	E:R7 E:R9			R0603_1%,27R	RES 1/10W 1% 0603 SMD	
119	1	E:R8			R0603_1%,680R	RES 1/10W 1% 0603 SMD	
107	1	E:R12			R0603_1%,120	Resistor, Chip, 1/16W, 1%	
108	1	E:R13			R0603_1%,19.6K	Resistor, Chip, 1/16W, 1%	
120	3	E:R14			R0603_1%,NL	Resistor, Chip, 1/16W, 1%	
69	0	E:U1	NL	NL	NL	NL	DNI
70	0	E:U2	NL	NL	NL	NL	DNI
66	0	E:U3	NL	NL	NL	NL	DNI
65	0	E:U4	NL	NL	NL	NL	DNI
63	0	E:U5	NL	NL	NL	NL	DNI
64	0	E:U6	NL	NL	NL	NL	DNI
93	0	E:X1	NL	NL	NL	NL	DNI
55	2	F1 F4	Schurter	3101.004		FUSEHOLDER SLOT FPG4 IP40, DK 486-1159-ND	
	2	F1 F4	Bussmann	GMC-2-R		FUSE 2A 250V MED T-LAG GLASS	
62	3	HS1, HS4-5	Aavid	782653B02000	HEATSINK, 782653B02000	Heatsink, Vertical-mount, Clip Extrusion	Install HS1 (marked on the PCB). HS1 is used for MOSFETs Q8 & Q9
	0	HS2		DNI	NL	NL	HS2 associated with Q10 & Q13. Q10 & Q13 is NL and so HS2 is also NL
39	1	J1	QUALTEK	Q218-ND	CONN AC RECEPT 7MM R/A RND PCB, 703W-00/52	Connector, 10A 250 VAC RA, DK p/n Q218-ND	
41	2	J2 J5	PHOENIX	MKDS3/2	CONN, MKDS3/2	Header, Side Entry 2-pin, 5mm spacing,	
61	2	J3 J7	SAMTEC	TFM-110-02-SM-D-A-K-TR	HEADER, TFM-110-02-SM-D-A-K-TR	Header, SMT 10X2 pin, Shrouded	
56	11	J12 J14 J16 J18 J22-26, J43-44	MILMAX	3115-2-00-15-00-00-08-0	HEADER, 3115-2-00-15-00-00-08-0	Header, Single pin	
	0	J43-44		DNI	NL	NL	DNI
	27	J4 J6 J8-11, J15, J17 J19-21 J27-37, J39-J40, J42, J45-46			HEADER_1X2_100	Header, Male, 1x2-pin, 100mil spacing	
	0	J13, J38, J41	NL	NL	NL	NL	DNI
127	1	K3	PANASONIC	ST2-DC12V-F	RELAY, ST2-DC12V-F	Relay, 380Vac, 250VDC, 8A, DPST, 12V coil volt	

Item	Qty	Reference	MFG	PN	Part Name	Description	Notes
74	2	L5-6	BOURNS	2320-V-RC	IND, Differential Mode, Bourns 2320-V-RC	Inductor, Line Filter, DK p/n M8894-ND	
73	2	L7 L11	VITEC	53PR105	IND. VITEC, 53PR105	Inductor.	
71	1	L10	BOURNS / JW MILLER	8115-RC	IND, J.W.Miller 8115, 1.2mH	Inductor, Common mode	
79	2	LED1-2		DK p/n 404-1017-1-ND	LED0,Red	Typical INFRARED GaAs LED	
85	1	M1		PTI TO MAKE/THIS IS A SUB ASSEMBLY	MOD, PR798-12	Aux Bias Supply, 400Vin, +12Vout sec, +12Vout prim, 5W	
	0	M2	NL	NL	NL	NL	DNI
60	0	P1	NL	NL	HEADER_9X2	Header, 9-Pin, Dual row	DNI
58	0	P2	NL	NL	HEADER_4X2	Header, 4-Pin, Dual row	DNI
144	4	Q1-4	POWER SEMI MICRO	APT11N80KC3G	TR_NFET, TO-220V, APT11N80KC3G	CoolMOS, MicroSemi, , N-ch, 800V 11A	
87	2	Q5-6	FAIRCHILD	2N7002	MOS, 2N7002, NMOS		
90	2	Q8-9	IR	IRFB4227PBF	MOSFET, IRFB4227PBF	MOSFET N-CH 200V 65A TO-220AB	
	0	Q10, Q13		DNI	NL	NL	DNI
143	1	Q220	ST MICRO	2N7002	TR, 2N7002	MOSFET, N-ch, 60-V, 115-mA, 1.2-Ohms	
102	1	R1			R0603,127K	Resistor, Chip, 1/16W, 1%	
101	1	R2			R0603,	Resistor, Chip, 1/16W, 1%	DNI
98	1	R3			R0603,130K	Resistor, Chip, 1/16W, 1%	
	1	R4			R0603, 634 ohm, 0.5%	Resistor, 634 ohm, 0.5%	
	0	R139-140, R151-152		DNI	NL	NL	DNI
	9	R107, R131, R133-135, R143, R145-147			RES, 0805, 100 ohm, 1%	D8	
	2	R105 R119			RES, 0805, 15K, 1%		
	0	R20 R23 R100	NL	DNI	NL		DNI
	8	R58 R59 R61 R64 R166-169			RES, 0805, 10K, 1%		
	2	R82 R102			RES, 0805, 7.5K, 1%		
	2	R45 R92			RES, 0805, 1K, 0.5%		
	1	R39			RES, 0805, 3.32K 0.5%	RES, 0805, 3.32K 0.5%	
	1	R66			RES 0603, 0	Resistor, Chip, 1/16W, 1%	
	4	R5, R202, R203-204			RES, 0805, 0 ohm	Resistor, 0 ohm	
	1	R9			RES 0603 20K	Resistor, Chip, 1/16W, 1%	
97	1	R6			RES 0603 169K	Resistor, Chip, 1/16W, 1%	
99	1	R7			R0603,1K	RES 1/10W 1% 0603 SMD	
	1	R200			RES, 0603, 1K, 0.5%		
	1	R118			RES, 0603, 200.0K 0.5%		
	1	R76			RES, 0603, 1M, 1%		
	2	R34, R36			RES, 0603, 50 ohm, 1%		
	4	R72, R22 R28 R33			RES, 0603, 100 ohm, 1%		
	2	R62, R70			RES, 0603, 1.74K, 0.5%		
	2	R40, R74			RES, 0603, 0 ohm		
	5	R30-32, R35, R43			RES, 0603, 5K, 1%		
	2	R25, R26			RES, 0603, 1K, 1%		
	3	R29, R37, R38			RES, 0603, 510, 1%		
	2	R18, R21			RES, 0603, 4.81K, 1%		
	2	R16-17			RES, 0603, 2.2K, 1%		
	8	R14, R15, R19, R120, R123 R125 R128-129			RES, 0603, 24.9K, 0.5%		
	1	R13			RES, 0603, 3.32K, 0.5%		
	2	R12, R127			RES, 0603, 1.47K, 0.5%		
	0	R8 R10 R11 R46 R80 R88 R89 R138 R141 R150 R153 R199		DNI	NL		DNI
94	3	R24, R27, R106			R0603,10.0k	Resistor, Chip, 1/16W, 1%	
104	2	R41-42			RES 0805 1K	Resistor, Chip, 1/16W, x%	
95	1	R44			R0603,100	RES 1/10W 1% 0603 SMD	
123	4	R47 R49-51			R0805_1%,10.0k	Resistor, Chip, 1/10W, 1%	
		R48 R112 R121					
124	6	R159-160 R173			R0805, 1%, 15 ohm	Resistor, Chip, 1/10W, 1%	
132	4	R52-53 R55-56			RES, 0603, 1K, 1%		
122	2	R54 R57			RES, 0805, 0 ohm	Resistor, Chip, 1/10W, 1%	
129	2	R73 R75			RES, 0603, 3.6K, 1%		
	3	R90 R130 R142			RES, 0603, 0 ohm		
	3	R83, R98, R201			RES, 0603, 10.0 ohm, 1%		
	1	R81			RES, 0603, 510.0 ohm, 1%		
	4	R68-69, R78-79			RES, 0603, 5.0 ohm, 1%		
	2	R63, R65			RES, 0603, 3.6K, 1%		
	4	R60, R67, R71, R77			RES, 0603, 10K, 1%		

Item	Qty	Reference	MFG	PN	Part Name	Description	Notes
	8	R132 R136 R144 R148 R207-208 R1030 R1040			RES, 1206, 2.2 ohm, 1%		
	16	R84-87, R94-97, R108-111, R113-116			RES, 1206, 475K, 0.5%		
96	1	R99			R0603,10K	Resistor, Chip, 1/16W, x%	
115	4	R103 R158, R122, R161			R0603, 1%, 0	Resistor, Chip, 1/16W, 1%	
	1	R183			R0603,10K	Resistor, Chip, 1/16W, 1%	
	1	R184			R0603,2K	Resistor, Chip, 1/16W, 1%	
121	0	R101, R124, R126, R154, R157, R162, R163, R164,		DNI	NL	Resistor, Chip, 1/16W, 1%	DNI
116	2	R137 R155			R0603, 1%, 464	Resistor, Chip, 1/16W, 1%	
105	2	R149 R156			R0603, 1%, 1.37K	Resistor, Chip, 1/16W, 1%	
103	1	R165			R0805, 200	Resistor, Chip, 1/16W, x%	
89	1	RV1	TDK	B72210S0381K101	MOV, B72210S0381K101	MOV, yyA	
88	1	RV2	TDK	B72210S0321K101	MOV, B72210S0321K101	MOV, 3.5A	
54	1	T2	VITEC	58PR6962	TFMR Flyback, ViTEC 58PR6962		
	0	T1	NL	DNI	NL	NL	DNI
149	1	T4	PULSE	PA1005.050NL	XFMR, Pulse PA1005.050NL	Transformer, 3 Pri, 2Sec	
	0	T3		DNI	NL	NL	DNI
	1	T5	Coilcraft	MSD1278 -273ML	27uH Coupled Inductor ,2A RMS	SMT Coupled Inductor ,2A RMS	
138	27	TP2 TP6 TP79 TP85- 91 TP93-94	KEYSTONE	5002	TP-5002-WHITE,5002	Test Point, White, Thru Hole Color Keyed	
		TP97-105 TP108-109 TP111-113 TP115					
137	1	TP3	KEYSTONE	5000	TP-5000-RED,5000	Test Point, Red, Thru Hole Color Keyed	
140	20	TP4-5 TP7 TP11 TP14 TP19-21 TP24 TP32-35 TP41 TP49 TP71-74	KEYSTONE	5011	TP-5011-BLACK,5011	Test Point, Black, Thru Hole	
	0	TP45	NL	NL	NL	NL	DNI
40	7	TP8-10 TP12-13 TP15-16		Digi p/n: 501-1115-ND	CONN_BANANA JACK	HDWR BANANA JACK UNINS	
139	1	TP17	KEYSTONE	5002	TP-5002-WHITE,5002	Test Point, White, Thru Hole Color Keyed	
141	5	TP45, TP61, TP70, TP75-76	KEYSTONE	5013	TP-5013-ORANGE,5013	Test Point, Orange, Thru Hole	
136	1	U2	TI	TL431AIDBZ	TL431AIDBZ	IC, Precision Adjustable Shunt Regulator	
147	1	U3	TI	UCC27324D	UCC27324D	IC, High Speed Low Side Power MOSFET driver	
83	3	U4-5 U8		LMV7235M5/NOPBCT	LMV7235M5/NOPBCT	IC, 45nsec, R-R Input Comparator With Open-Drain/Push-Pull Output	
51	1	U6		100 pin DIMM socket - Molex 0876301001	DIM100		
1	1	U7	TI	AMC1200SDUB	AMC1200SDUB	IC, Fully-Differential Isolation Amplifier	
82	1	U9	NATIONAL	LM61CIM3/NOPB	LM61CIM3/NOPB		
91	7	U1, U10-15	TI	OPA2171	OPAMP, DUAL, OPA2171, SO-8		
145	1	U24	TI	SM72295MA	SM72295MA		
					Digital Isolator, ISO7420 (Texas Instruments)		
92	2	U17 U27	TI	ISO7420		IC, Dual-channel Low Power, Digital ISO	
146	2	U19 U28	TI	UCC27531DBV	UCC27531DBV	IC, 2.5A/5A, 40Vmax VDD FET/IGBT Single Gate Drivers	
133	2	U20 U22	RECOM POWER	RP-1212S	RP-1212S	IC, DC/DC-Converter, 12Vin, 12Vout, 84 mA	
84	1	U21	LEM HOLDINGS	LTSR6_NP	LEM, Current Sensor with Ref output, LTSR6_NP	LEM, LTSR6_NP	
81	2	U23 U29	TI	LM317LIPK	LM317LIPK	IC, 3-Terminal Pos. Adj. Regulator, 100 mA	
134	1	U25	ALLEGRO	ACS712ELCTR-20A-T	Current Sensor, ACS712ELCTR-20A-T		
77	1	U30	TI	ISO7240CFDW	ISO7240CFDW	SO-8SM	
	1	M3	TI	LM5017MR	LM5017MR		
150	0	ZD1 ZD5-7		DNI	NL		DNI

Item	Qty	Reference	MFG	PN	Part Name	Description	Notes
	1	JP3, JP2					Short these on PCB with wire rated for high current(15A).
	1	TP8, TP9					Short these on PCB with wire rated for high voltage (400V) & current(5A).
	6	Ref Q1-Q4, Q8, Q9	Bergquist Aavid	Insulators, DK p/n BER156-ND	Insulators for TO220		
	6	Ref Q1-Q4, Q8, Q9	Thermalloy	Clip MAX01	Clip for TO220		
	6	Ref HS1, HS4, HS5		Insulating Washers	Digi p/n 3118K-ND		between Heatsink and PCB
	1				MANEX 831-0019759	HIGH VOLTAGE LABEL	Install near TP8 TP10 Added line item per DN-385. KG 04/15/14
	1				MANEX 831-0019760	HIGH TEMP WARNING LABEL	Install near T2 & HS1 Added line item per DN-385. KG 04/15/14

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