

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint	Note
1	1	IPC		Printed Circuit Board	Any	PWR648	-		
2	8	C1, C9, C13, C20, C21,	1uF	CAP, CERM, 1uF, 16V, +/-10%,	MuRata	GRM188R71C105KA12D		0603	
3	1	C2	47uF	CAP, CERM, 47uF, 6.3V, +/-10%, X5R, 1206	MuRata	GRM31CR60J476KE19L		1206	
4	4	C3, C5, C39, C40	4.7uF	CAP, CERM, 4.7uF, 10V, +/-10%, X5R, 0603	TDK	CGB3B1X5R1A475K055 AC		0603	
5	2	C4, C18	4700pF	CAP, CERM, 4700pF, 50V, +/-10%, X7R, 0603	MuRata	GRM188R71H472KA01D		0603	
6	2	C6, C27	10uF	CAP, CERM, 10uF, 35V, +/-10%,	MuRata	GRM32ER7YA106KA12L		1210	
7	12	C7, C12, C15, C22, C25,	0.1uF	CAP, CERM, 0.1uF, 50V, +/-10%,	MuRata	GRM188R71H104KA93D		0603	
8	1	C8	47uF	CAP, TA, 47uF, 16V, +/-20%, 0.6	AVX	F951C476MBAAQ2		3528	
9	2	C10, C19	0.1uF	CAP, CERM, 0.1uF, 100V, +/-5%,	Kemet	C1812C104J1GACTU		1812	
10	1	C14	33pF	CAP, CERM, 33pF, 50V, +/-5%, C0G/NP0, 0603	MuRata	GRM1885C1H330JA01D		0603	
11	1	C16	0.047uF	CAP, CERM, 0.047uF, 100V, +/-	TDK	C4532C0G2A473J200KA		1812	
12	1	C17	2.2uF	CAP, CERM, 2.2uF, 25V, +/-10%,	MuRata	GRM316R61E225KA12D		1206	
13	1	C23	1uF	CAP, CERM, 1uF, 16V, +/-10%, X7R, 0603	TDK	C1608X7R1C105K		0603	
14	2	C24, C31	47uF	CAP, CERM, 47uF, 25V, +/-20%, X5R, 1206	TDK	C3216X5R1E476M160A C		1206	
15	2	C28, C35	0.01uF	CAP, CERM, 0.01uF, 50V, +/-10%, X7R, 0603	MuRata	GRM188R71H103KA01D		0603	
16	1	C32	2700pF	CAP, CERM, 2700pF, 50V, +/-5%, C0G/NP0, 0603	MuRata	GRM1885C1H272JA01D		0603	
17	1	C37	330pF	CAP, CERM, 330pF, 50V, +/-5%, C0G/NP0, 0603	MuRata	GRM1885C1H331JA01D		0603	
18	1	C41	100uF	CAP, CERM, 100uF, 6.3V, +/-20%, X5R, 1206	MuRata	GRM31CR60J107ME39L		1206	
19	1	C46	1uF	CAP, CERM, 1 uF, 50 V, +/- 10%, X7R, 0603	Taiyo Yuden	UMK107AB7105KA-T		0603	
20	1	D1	40V, 0.5A	Diode, Schottky, 40V, 0.5A, SOD-123	ON Semiconductor	MBR0540T1G		SOD-123	
21	2	D2, D6	Green	LED, Green, SMD	Würth Elektronik eiSos	150060VS75000		LED_0603	
22	5	D3, D5, D9, D10, D11	30V	Diode, Schottky, 30V, 0.2A, SOT-	Fairchild	BAT54SWT1G		SOT-323	
23	1	D7	Super Red	LED, Super Red, SMD	Würth Elektronik eiSos	150060SS75000		LED_0603	
24	1	D8	Yellow	LED, Yellow, SMD	Würth Elektronik eiSos	150060YS75000		LED_0603	
25	1	H1		Cover, Plastic Polycarbonate, 2.75	Any	MCH002	-		
26	1	H2		Plate, aluminum 2.0"x2.0"x0.062"	Any	MCH003	-		

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27	1	H3		Sil-Pad Cut to Size 2.0" Square	Bergquist	GP1500-0.020-00-0816	GP1500-0.020-00-0404	See Assy Note	
28	1	H4		Adhesive, Thermally Conductive	Bergquist	SA-1000	-	See Assy Note	
29	4	H5, H6, H7, H8		Nut #4-40 Hex Nylon	B&F Fastener Supply	NY HN 440	-	4-40	
30	4	H9, H10, H11, H12		Standoff, Nylon, Female to Male, 4-	Keystone	4800	-	4-40 x 1/4"	
31	4	H13, H14, H15, H16		Screw, steel zinc, flathead 4-40	Pomona Electronics	4862	-	4-40 x 1/4"	
32	6	H17, H18, H19, H20, H21,		Mounting Feet, 0.25" tall	Voltrex	2563			
33	5	J1, J2, JP1, JP2, JP3		Header, 100mil, 2x1, Tin plated,	Sullins Connector	PEC02SAAN		Header, 2 PIN,	
34	1	J4		Header (shrouded), 100mil, 5x2,	3M	N2510-6002-RB		5x2 Shrouded	
35	1	L1	300uH	Inductor, Shielded, 300uH, 0.13A,	Würth Elektronik eiSos	744042331		4.8x1.8x4.8mm	
36	1	L2	10uH	Inductor, Shielded Drum Core,	Würth Elektronik eiSos	7447713100		10x3x10mm	
37	1	L3	10uH	Inductor, Wirewound, 10uH, 9A,	Würth Elektronik eiSos	760308141		54.4x6.5x54.4mm	
38	1	LBL1		Thermal Transfer Printable Labels,	Brady	THT-14-423-10	-	PCB Label	
39	1	LS1		Buzzer, Piezo, 4kHz, 12.2mm, TH	TDK	PS1240P02CT3		12.2x4.0mm	
40	1	Q1	50 V	Transistor, NPN, 50 V, SOT-323	Rohm	DTC114YUAT106		SOT-323	
41	2	Q2, Q3	50V	MOSFET, N-CH, 50V, 0.22A, SOT-	Fairchild	BSS138		SOT-23	
42	13	R1, R3, R5, R11, R23, R25,	10.0k	RES, 10.0k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060310K0FKEA		0603	
43	1	R2	130k	RES, 130k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603130KFKEA		0603	
44	1	R4	3.16k	RES, 3.16k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06033K16FKEA		0603	
45	1	R6	200k	RES, 200k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603200KFKEA		0603	
46	2	R7, R17	10.0	RES, 10.0, 1%, 0.1 W, 0603	Vishay-Dale	CRCW060310R0FKEA		0603	
47	1	R8	56.2k	RES, 56.2 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW060356K2FKEA		0603	
48	1	R9	42.2k	RES, 42.2 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW060342K2FKEA		0603	
49	2	R10, R37	76.8k	RES, 76.8k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060376K8FKEA		0603	
50	5	R12, R13, R19, R20, R29	10.0	RES, 10.0 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060310R0FKEA		0603	
51	1	R14	23.2k	RES, 23.2k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060323K2FKEA		0603	
52	5	R15, R26, R31, R32, R42	475	RES, 475 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603475RFKEA		0603	
53	1	R16	100k	RES, 100k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603100KFKEA		0603	
54	3	R18, R21, R41	1.00Meg	RES, 1.00Meg ohm, 1%, 0.1W,	Vishay-Dale	CRCW06031M00FKEA		0603	
55	1	R22	1.00k	RES, 1.00k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06031K00FKEA		0603	
56	3	R24, R30, R36	523k	RES, 523k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603523KFKEA		0603	
57	1	R28	0.02	RES, 0.02, 0.5%, 0.5 W, 1206	Ohmite	LVK12R020DER		1206 sense	
58	1	R34	499k	RES, 499 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW0603499KFKEA		0603	
59	1	R35	4.99k	RES, 4.99 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW06034K99FKEA		0603	
60	1	R38	2.00Meg	RES, 2.00Meg ohm, 1%, 0.1W,	Vishay-Dale	CRCW06032M00FKEA		0603	
61	1	R40	300	RES, 300 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW0603300RJNEA		0603	
62	1	R46	22	RES, 22 ohm, 0.5%, 0.1W, 0805	Susumu Co Ltd	RR1220Q-220-D		0805	
63	2	R47, R48	86.6k	RES, 86.6 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW060386K6FKEA		0603	
64	1	R50	0	RES, 0 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW06030000Z0EA		0603	
65	1	SH-JP1	1x2	Shunt, 100mil, Gold plated, Black	3M	969102-0000-DA	SNT-100-BK-G	Shunt	
66	4	TP2, TP3, TP15, TP18	White	Test Point, Compact, White, TH	Keystone	5007		White Compact	
67	4	TP4, TP5, TP12, TP17	Black	Test Point, Multipurpose, Black,	Keystone	5011		Black	
68	3	U1, U2, U3		Synchronous Buck NexFET Power	Texas Instruments	CSD97374Q4M		DPC0008A	
69	1	U4		10-W WPC v1.1 Compliant	Texas Instruments	BQ500215RGC		RGC0064B	
70	1	U5		Buck Step Down Regulator with	Texas Instruments	TPS54231D	Equivalent	D0008A	
71	1	U6		Single Output LDO, 150 mA, Fixed	Texas Instruments	TLV70450DBVT	Equivalent	DBV0005A	
72	1	U7		Voltage Output, High or Low Side	Texas Instruments	INA199A1DCK		DCK0006A	
73	0	C11	0.047uF	CAP, CERM, 0.047uF, 100V, +/-	TDK	C4532C0G2A473J200KA		1812	
74	0	C42, C43, C44	47uF	CAP, CERM, 47uF, 25V, +/-20%,	TDK	C3216X5R1E476M160A		1206	
75	0	C45	0.01uF	CAP, CERM, 0.01uF, 50V, +/-10%,	MuRata	GRM188R71H103KA01D		0603	

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76	0	D4		Diode, Schottky, 40V, 0.5A, SOD-	ON Semiconductor	MBR0540T1G		SOD-123	
77	0	FID1, FID2, FID3		Fiducial mark. There is nothing to	N/A	N/A		Fiducial	
78	0	J3		Header (shrouded), 100mil, 7x2,	3M	N2514-6002-RB		7x2 Header	
79	0	R27	10k	RES, 10k ohm, 2%, 0.2W, TH	Bourns	4309R-101-103LF		9x1 ResNetwork	
80	0	R44	0.51	RES, 0.51 ohm, 1%, 0.25W, 0805	Bourns	CRM0805-FX-R510ELF		0805	
81	0	R49	110k	RES, 110 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW0603110KFKEA		0603	
82	0	R53	10.0k	RES, 10.0k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060310K0FKEA		0603	

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