

N/A

Designator	Quantity	Value	Description	PackageReference	PartNumber	Manufacturer	Alternate PartNumber	Alternate Manufacturer
IPC81	1		Printed Circuit Board		TIDA-01040	Any	-	-
C1, C3, C5, C16	4	1000pF	CAP, CERM, 1000 pF, 100 V, +/- 5%, C0G/NP0, 0603	0603	C1608C0G2A102J080A A	TDK		
C2, C14, C17, C92	4	0.01uF	CAP, CERM, 0.01 uF, 100 V, +/- 10%, X7R, 0603	0603	06031C103KAT2A	AVX		
C4, C15	2	0.015uF	CAP, CERM, 0.015 uF, 25 V, +/- 10%, X7R, 0603	0603	GRM188R71E153KA01 D	MuRata		
C6, C34, C35, C36, C37	5	1uF	CAP, CERM, 1 uF, 100 V, +/- 10%, X7S, 0805	0805	C2012X7S2A105K125A B	TDK		
C7, C12	2	0.22uF	CAP, CERM, 0.22 uF, 50 V, +/- 10%, X7R, 0603	0603	C1608X7R1H224K080A B	TDK		
C10, C43	2	2.2uF	CAP, CERM, 2.2 uF, 16 V, +/- 10%, X7R, 0805	0805	C2012X7R1C225K125A B	TDK		
C11, C47, C48, C173, C179, C180, C182, C183	8	1uF	CAP, CERM, 1 uF, 25 V, +/- 10%, X7R, 0603	0603	GRM188R71E105KA12 D	MuRata		
C13, C72, C73, C74, C75, C82, C83, C86, C98, C101, C102	11	100pF	CAP, CERM, 100 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603	C0603C101J5GACTU	Kemet		
C18, C32	2	100uF	CAP, AL, 100 uF, 100 V, +/- 20%, 0.24 ohm, SMD	LH0	EMVH101GDA101MLH0 S	Chemi-Con		
C20, C21, C54, C55	4	180uF	CAP, AL, 180 uF, 50 V, +/- 20%, 0.019 ohm, SMD	SMD, 2-Leads, Dia 10.5mm, Pin Spacing 8mm	PCR1H181MCL1GS	Nichicon		
C22, C23, C24, C25, C26, C27, C28, C29, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71	18	4.7uF	CAP, CERM, 4.7 uF, 100 V, +/- 20%, X7R, 2220	2220	C5750X7R2A475M230K A	TDK		
C38	1	22uF	CAP, AL, 22 uF, 100 V, +/- 20%, 0.55 ohm, SMD	JA0	EMVH101ADA220MJAO G	Chemi-Con		
C39	1	10uF	CAP, CERM, 10 uF, 100 V, +/- 20%, X7S,		C5750X7S2A106M230K B	TDK		
C40	1	0.1uF	CAP, CERM, 0.1 uF, 100 V, +/- 10%, X7R, 0805	0805	C2012X7R2A104K125A A	TDK		
C41, C44, C84, C91, C93, C94, C189	7	0.1uF	CAP, CERM, 0.1 uF, 100 V, +/- 10%, X7R, 0603	0603	GRM188R72A104KA35 D	MuRata		
C42	1	180uF	CAP, Aluminum Polymer, 180 uF, 16 V, +/- 20%, 0.016 ohm, HCO SMD	HCO	APXA160ARA181MHCO G	Chemi-Con		
C45	1	330pF	CAP, CERM, 330 pF, 100 V, +/- 5%, C0G/NP0, 0603	0603	C1608C0G2A331J080A A	TDK		
C46	1	0.056uF	CAP, CERM, 0.056 uF, 50 V, +/- 10%, X7R, 0603	0603	GRM188R71H563KA93 D	MuRata		
C49	1	1500pF	CAP, CERM, 1500 pF, 100 V, +/- 5%, C0G/NP0, 0603	0603	GRM1885C2A152JA01 D	MuRata		
C50, C51, C52, C53, C56, C57, C58, C59, C60, C61	10	39uF	CAP, Aluminum Polymer, 39 uF, 80 V, +/- 20%, 0.035 ohm, AEC-Q200 Grade 1, D10xL10mm SMD	D10xL10mm	HHXA800ARA390MJAO G	Chemi-Con		
C76, C77, C78	3	1uF	CAP, CERM, 1 uF, 100 V, +/- 10%, X7S, 0805	0805	C2012X7S2A105K125A B	TDK		
C79, C85, C137, C139, C140	5	0.01uF	CAP, CERM, 0.01 uF, 100 V, +/- 10%, X7R, 0603	0603	06031C103KAT2A	AVX		
C80, C81	2	0.47uF	CAP, CERM, 0.47 uF, 16 V, +/- 10%, X7R, 0603	0603	GRM188R71C474KA88 D	MuRata		
C87	1	10pF	CAP, CERM, 10 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603	C0603C100J5GACTU	Kemet		
C88	1	4700pF	CAP, CERM, 4700 pF, 50 V, +/- 10%, X7R, 0603	0603	C0603C472K5RACTU	Kemet		
C89	1	0.1uF	CAP, CERM, 0.1 uF, 50 V, +/- 10%, X5R, 0603	0603	C1608X5R1H104K080A A	TDK		
C90	1	10uF	CAP, CERM, 10 uF, 16 V, +/- 20%, X5R, 0603	0603	EMK107BBJ106MA-T	Taiyo Yuden		
C96, C97, C99, C106, C108, C111, C112, C116, C119, C133, C135, C146	12	0.1uF	CAP, CERM, 0.1 uF, 25 V, +/- 5%, X7R, 0603	0603	06033C104JAT2A	AVX		
C100, C103, C104, C105	4	0.015uF	CAP, CERM, 0.015 uF, 16 V, +/- 10%, X7R, 0603	0603	GRM188R71C153KA01 D	MuRata		
C107, C109, C117, C120	4	10uF	CAP, CERM, 10 uF, 10 V, +/- 10%, X7R, 0805	0805	GRM21BR71A106KE51 L	MuRata		
C110	1	0.01uF	CAP, CERM, 0.01 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603	GCM188R71H103KA37 D	MuRata		
C113, C114, C121	3	10pF	CAP, CERM, 10 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603	GRM1885C1H100JA01 D	MuRata		
C115	1	0.1uF	CAP, CERM, 0.1 uF, 16 V, +/- 10%, X5R, 0603	0603	GRM188R61C104KA01 D	MuRata		
C118	1	1uF	CAP, CERM, 1 uF, 6.3 V, +/- 10%, X5R, 0603	0603	GRM188R60J105KA01 D	MuRata		
C122, C123, C125, C126	4	1uF	CAP, CERM, 1 uF, 25 V, +/- 10%, X7R, 1206	1206	12063C105KAT2A	AVX		
C124	1	10uF	CAP, CERM, 10 uF, 35 V, +/- 10%, X6S, 0805	0805	GRM21BC8YA106KE11 L	MuRata		
C127, C128	2	0.1uF	CAP, CERM, 0.1 uF, 16 V, +/- 5%, X7R, 0603	0603	C0603C104JRACTU	Kemet		

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C129, C130	2	1uF	CAP, CERM, 1 uF, 35 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603	CGA3E1X7R1V105K080AC	TDK		
C131, C132	2	0.22uF	CAP, CERM, 0.22 uF, 16 V, +/- 10%, X7R, 0603	0603	C0603C224K4RACTU	Kemet		
C134, C136, C138, C141, C145, C155, C156, C160, C161, C188	10	1uF	CAP, CERM, 1 uF, 25 V, +/- 10%, X7R, 0603	0603	GRM188R71E105KA12D	MuRata		
C142, C144, C150, C154	4	1500pF	CAP, CERM, 1500 pF, 100 V, +/- 5%, X7R, 0603	0603	06031C152JAT2A	AVX		
C143, C151	2	3900pF	CAP, CERM, 3900 pF, 100 V, +/- 10%, X7R, 0603	0603	GRM188R72A392KA01D	MuRata		
C147, C148	2	2700pF	CAP, CERM, 2700 pF, 50 V, +/- 5%, COG/NP0, 0603	0603	GRM1885C1H272JA01D	MuRata		
C149	1	10pF	CAP, CERM, 10 pF, 50 V, +/- 5%, COG/NP0, 0603	0603	06035A100JAT2A	AVX		
C152, C153	2	20pF	CAP, CERM, 20 pF, 50 V, +/- 5%, COG/NP0, 0603	0603	GRM1885C1H200JA01D	MuRata		
C157, C181, C184	3	1000pF	CAP, CERM, 1000 pF, 100 V, +/- 5%, X7R, 0603	0603	06031C102JAT2A	AVX		
C158, C159	2	100uF	CAP, CERM, 100 uF, 10 V, +/- 20%, X5R, 1206_190	1206_190	C3216X5R1A107M160AC	TDK		
C162, C164	2	12pF	CAP, CERM, 12 pF, 50 V, +/- 5%, COG/NP0, 0603	0603	C0603C120J5GACTU	Kemet		
C163, C165, C166, C167, C168, C169, C174, C176, C177, C178, C187	11	0.1uF	CAP, CERM, 0.1 uF, 25 V, +/- 5%, X7R, 0603	0603	06033C104JAT2A	AVX		
C170, C171	2	6.8pF	CAP, CERM, 6.8 pF, 50 V, +/- 4%, COG/NP0, 0603	0603	06035A6R8CAT2A	AVX		
C172, C175	2	2.2uF	CAP, CERM, 2.2 uF, 35 V, +/- 10%, X5R, 0603	0603	GRM188R6YA225KA12D	MuRata		
C185, C186	2	27pF	CAP, CERM, 27 pF, 50 V, +/- 5%, COG/NP0, 0603	0603	06035A270JAT2A	AVX		
D1, D2	2	60V	Diode, Schottky, 60 V, 1 A, SOD-123F	SOD-123F	PMEG6010CEH,115	NXP Semiconductor		
D3	1	75V	Diode, Switching, 75 V, 0.3 A, SOD-523	SOD-523	1N4148X-TP	Micro Commercial Componen		
D5	1	30V	Diode, Schottky, 30 V, 0.2 A, SOD-323	SOD-323	BAT54WS-7-F	Diodes Inc.		
D6	1	30V	Diode, Schottky, 30 V, 5 A, SMC	SMC	B530C-13-F	Diodes Inc.		
D7	1	100V	Diode, Schottky, 100 V, 5 A, SMC	SMC	CBDC5100-G	Comchip Technology		
D8, D9	2	75V	Diode, Switching, 75 V, 0.25 A, SOD-323	SOD-323	1N4448WX-TP	Micro Commercial Componen		
D11	1	Green	LED, Green, SMD	LED_0603	150060VS75000	Würth Elektronik		
D12	1	Yellow	LED, Yellow, SMD	LED_0603	150060YS75000	Würth Elektronik		
FID1, FID2, FID3	3		Fiducial mark. There is nothing to buy or mount.	Fiducial	N/A	N/A		
H1, H2, H3, H4	4		Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	Screw	NY PMS 440 0025 PH	B&F Fastener Supply	-	-
H5, H6, H7, H8	4		Standoff, Hex, 1"L #4-40 Aluminum	1" Aluminum Hex Standoff	2205	Keystone		
J1, J5, J6, J7, J8, J21, J23, J24	8		Header, 100mil, 3x1, Gold, TH	Header, 100mil, 3x1, TH	HTSW-103-07-G-S	Samtec		
J2	1		Header, 2.54mm, 10x2, Tin, TH	Header, 10x2, 2.54mm, TH	PEC10DAAN	Sullins Connector Solutions		
J3, J4, J14, J16, J34, J35, J37	7		Header, 100mil, 2x1, Gold, TH	Header, 100mil, 2x1, TH	HTSW-102-07-G-S	Samtec		
J9, J10, J11, J12	4		Standard Banana Jack, Uninsulated, 15A	Banana Jack	108-0740-001	Emerson Network Power		
J17	1		Header(Shrouded), 2.54mm, 5x2, Gold, TH	Header, 2.54mm, 5x2, TH	AWHW-10G-0202-T	Assman WSW		
J18	1		Header, 2.54 mm, 4x2, Gold, TH	Header, 2.54 mm, 4x2, TH	802-10-008-10-001000	Mill-Max		
J19	1		Header, 2.54mm, 8x2, Gold, TH	Header, 2.54mm, 8x2, TH	PRPC008DAAN-RC	Sullins Connector Solutions		
J20	1		Connector, Receptacle, USB Micro B, R/A, SMT	Connector, Receptacle, USB Micro B, R/A, SMT	10118193-0001LF	FCI		
J22	1		Header, 100mil, 7x1, Gold, TH	7x1 Header	TSW-107-07-G-S	Samtec		
L1, L2	2	4.7uH	Inductor, 4.7uH, SMT	WE-HCF_2818	74436410470	WURTH	-	-
L3	1	47uH	Inductor, Shielded Drum Core, Ferrite, 47 uH, 2.9 A, 0.07 ohm, SMD	MSS1278	MSS1278-473MLB	Coilcraft		
L4	1	600 ohm	Ferrite Bead, 600 ohm @ 100 MHz, 1 A, 0603	0603	742792651	Würth Elektronik		
LBL1	1		Thermal Transfer Printable Labels, 1.250" W x 0.250" H - 10,000 per roll	PCB Label 1.25 x 0.250 inch	THT-13-457-10	Brady		
Q1, Q2, Q3, Q4, Q10, Q11, Q12, Q13	8		MOSFET N-CH 100V D2PAK	TO-263-3, D ² Pak (2 Leads + Tab), TO-263AB	TK65G10N1,RQ	Toshiba Semiconductor and S		
Q7, Q16, Q17, Q18	4	60V	MOSFET, N-CH, 60 V, 0.24 A, SOT-23	SOT-23	2N7002E-T1-E3	Vishay-Siliconix		None
Q14, Q15	2	100V	MOSFET, N-CH, 100 V, 21 A, PowerPAK SO-8	PowerPAK SO-8	SI7454DDP-T1-GE3	Vishay-Siliconix		None
R1, R5	2	95.3k	RES, 95.3 k, 1%, 0.1 W, 0603	0603	CRCW060395K3FKEA	Vishay-Dale		
R2, R19	2	634	RES, 634, 1%, 0.1 W, 0603	0603	CRCW0603634RFKEA	Vishay-Dale		
R3, R20	2	9.09k	RES, 9.09 k, 1%, 0.1 W, 0603	0603	CRCW06039K09FKEA	Vishay-Dale		
R4, R116, R121, R122, R123, R131	6	100k	RES, 100 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	CRCW0603100KFKEA	Vishay-Dale		
R6	1	49.9k	RES, 49.9 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	ERJ-3EKF4992V	Panasonic		
R7, R11, R81, R86, R139, R151, R152, R154	8	10.0k	RES, 10.0 k, 1%, 0.1 W, 0603	0603	CRCW060310K0FKEA	Vishay-Dale		
R10	1	1.00k	RES, 1.00 k, 1%, 0.1 W, 0603	0603	ERJ-3EKF1001V	Panasonic		
R12, R79	2	49.9k	RES, 49.9 k, 1%, 0.1 W, 0603	0603	CRCW060349K9FKEA	Vishay-Dale		
R13	1	40.2k	RES, 40.2 k, 1%, 0.1 W, 0603	0603	CRCW060340K2FKEA	Vishay-Dale		
R14	1	24.9	RES, 24.9, 1%, 0.125 W, 0805	0805	CRCW080524R9FKEA	Vishay-Dale		
R15	1	40.2k	RES, 40.2 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	ERJ-3EKF4022V	Panasonic		
R16	1	0.001	RES, 0.001, 1%, 7 W, AEC-Q200 Grade 0, 6.6x3x6.9mm	6.6x3x6.9mm	WSP27261L000FEA	Vishay-Dale		
R17	1	51.1k	RES, 51.1 k, 1%, 0.1 W, 0603	0603	CRCW060351K1FKEA	Vishay-Dale		
R18	1	54.9k	RES, 54.9 k, 1%, 0.1 W, 0603	0603	CRCW060354K9FKEA	Vishay-Dale		
R21, R32	2	0.001	RES, 0.001, 1%, 3 W, 6.6x3x6.9mm	6.6x3x6.9mm	WSP27261L000FEB	Vishay-Dale		

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R22, R24, R25, R29, R33, R35, R36, R40	8	49.9k	RES, 49.9 k, 1%, 0.125 W, 0805	0805	CRCW080549K9FKEA	Vishay-Dale		
R26, R27, R28, R30, R37, R38, R39, R41	8	1.00	RES, 1.00, 1%, 0.125 W, 0805	0805	CRCW08051R00FKEA	Vishay-Dale		
R31, R42, R56, R57, R58, R59	6	1.0	RES, 1.0, 5%, 0.1 W, 0603	0603	CRCW06031R00JNEA	Vishay-Dale		
R46	1	18.2k	RES, 18.2 k, 1%, 0.1 W, 0603	0603	CRCW060318K2FKEA	Vishay-Dale		
R47	1	0.068	RES, 0.068, 1%, 1 W, 0612	0612	PRL1632-R068-F-T1	Susumu Co Ltd		
R48	1	24.0k	RES, 24.0 k, 1%, 0.1 W, 0603	0603	RC0603FR-0724KL	Yageo America		
R49	1	7.32k	RES, 7.32 k, 1%, 0.1 W, 0603	0603	RC0603FR-077K32L	Yageo America		
R50	1	52.3k	RES, 52.3 k, 1%, 0.1 W, 0603	0603	RC0603FR-0752K3L	Yageo America		
R51	1	10.0	RES, 10.0, 1%, 0.1 W, 0603	0603	CRCW060310R0FKEA	Vishay-Dale		
R52, R73	2	10.5	RES, 10.5, 1%, 0.1 W, 0603	0603	RC0603FR-0710R5L	Yageo America		
R53, R83, R100, R101	4	20.0k	RES, 20.0 k, 1%, 0.1 W, 0603	0603	CRCW060320K0FKEA	Vishay-Dale		
R54, R55	2	2.0	RES, 2.0, 5%, 0.125 W, 0805	0805	CRCW08052R00JNEA	Vishay-Dale		
R60	1	4.70k	RES, 4.70 k, 1%, 0.1 W, 0603	0603	RC0603FR-074K7L	Yageo America		
R61, R62, R63, R64	4	10.0k	RES, 10.0 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	CRCW060310K0FKEA	Vishay-Dale		
R65, R66, R68, R69, R71, R120	6	499	RES, 499, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	CRCW0603499RKEA	Vishay-Dale		
R67, R72, R133, R135, R136, R147, R163, R164, R165	9	0	RES, 0, 5%, 0.1 W, 0603	0603	ERJ-3GEY0R00V	Panasonic		
R70	1	1.15k	RES, 1.15 k, 0.1%, 0.1 W, 0603	0603	RT0603BRD071K15L	Yageo America		
R74, R93	2	10.0k	RES, 10.0 k, 1%, 0.1 W, 0603	0603	RC0603FR-0710KL	Yageo America		
R75, R78	2	26.7k	RES, 26.7 k, 1%, 0.1 W, 0603	0603	CRCW060326K7FKEA	Vishay-Dale		
R76, R77	2	4.42k	RES, 4.42 k, 1%, 0.1 W, 0603	0603	CRCW06034K42FKEA	Vishay-Dale		
R80, R138	2	1.00k	RES, 1.00 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	CRCW06031K00FKEA	Vishay-Dale		
R82	1	1.00k	RES, 1.00 k, 1%, 0.1 W, 0603	0603	RC0603FR-071KL	Yageo America		
R84	1	1.00Meg	RES, 1.00 M, 1%, 0.125 W, 0603	0603	MCT06030C1004FP500	Vishay/Beyschlag		
R85, R88	2	20.0	RES, 20.0, 1%, 0.1 W, 0603	0603	CRCW060320R0FKEA	Vishay-Dale		
R90, R91	2	4.99k	RES, 4.99 k, 1%, 0.1 W, 0603	0603	CRCW06034K99FKEA	Vishay-Dale		
R96	1	0.51	RES, 0.51, 1%, 0.1 W, AEC-Q200 Grade 1, 0603	0603	ERJ-3RQFR51V	Panasonic		
R97, R98, R99, R103, R104, R105, R106, R107, R108, R109, R110	11	10k	RES, 10 k, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	CRCW060310K0JNEA	Vishay-Dale		
R111, R112, R114, R117, R124, R132	6	1.50k	RES, 1.50 k, 1%, 0.1 W, 0603	0603	RC0603FR-071K5L	Yageo America		
R113, R115, R128, R130	4	49.9	RES, 49.9, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	CRCW060349R9FKEA	Vishay-Dale		
R118, R119, R125, R127	4	100	RES, 100, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	CRCW0603100RFKEA	Vishay-Dale		
R126, R129	2	3.30k	RES, 3.30 k, 1%, 0.1 W, 0603	0603	RC0603FR-073K3L	Yageo America		
R134	1	1.00	RES, 1.00, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	CRCW06031R00FKEA	Vishay-Dale		
R137	1	1.00Meg	RES, 1.00 M, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	CRCW06031M00FKEA	Vishay-Dale		
R140, R150	2	1.00Meg	RES, 1.00 M, 1%, 0.1 W, 0603	0603	CRCW06031M00FKEA	Vishay-Dale		
R141	1	100	RES, 100, 1%, 0.1 W, 0603	0603	CRCW0603100RFKEA	Vishay-Dale		
R142	1	0	RES, 0, 5%, 0.1 W, 0603	0603	CRCW06030000Z0EA	Vishay-Dale		
R143	1	4.87k	RES, 4.87 k, 1%, 0.1 W, 0603	0603	CRCW06034K87FKEA	Vishay-Dale		
R145	1	2.00k	RES, 2.00 k, 1%, 0.1 W, 0603	0603	CRCW06032K00FKEA	Vishay-Dale		
R146	1	51	RES, 51, 5%, 0.1 W, 0603	0603	CRCW060351R0JNEA	Vishay-Dale		
R149	1	1.00k	RES, 1.00 k, 1%, 0.1 W, 0603	0603	CRCW06031K00FKEA	Vishay-Dale		
R153	1	8.06k	RES, 8.06 k, 1%, 0.1 W, 0603	0603	CRCW06038K06FKEA	Vishay-Dale		
R155, R156	2	10.0k	RES, 10.0 k, 1%, 0.1 W, 0603	0603	ERJ-3EKF1002V	Panasonic		
R162	1	2.00k	RES, 2.00 k, 0.5%, 0.1 W, 0603	0603	RT0603DRE072KL	Yageo America		
S1, S2	2		Switch, Tactile, SPST-NO, 0.05A, 12V, SMT	Switch, 4.4x2x2.9 mm	TL1015AF160QG	E-Switch		
T1, T2, T3, T4	4		Terminal 70A Lug	LUG, 32.3x14.5x11.7	CXS70-14-C	Panduit		
U1	1		Dual Channel 48V-12V Bidirectional Current Controller, PHP0048D	PHP0048D	LM5170QPPHPRQ1	Texas Instruments	LM5170QPPHPTQ1	Texas Instruments
U2	1		17MHz Rail-to-Rail Input and Output Op Amp, D0008A	D0008A	LM6142AIMNOPB	Texas Instruments		Texas Instruments
U3, U4	2		150-mA, 30-V, 1-uA IQ Voltage Regulators with Enable, DBV0005A	DBV0005A	TPS70950DBVR	Texas Instruments	TPS70950DBVT	Texas Instruments
U5	1		Wide Voltage Range Buck-Boost Controller, 20-pin TSSOP-EP, Pb-Free	MXA20A	LM5118MH/NOPB	Texas Instruments		
U7	1		Switched Capacitor Voltage Converter, 6-pin SOT-23	DBV0006A	LM2664M6/NOPB	Texas Instruments		Texas Instruments
U8, U14	2		Low-Noise, High-Precision, JFET-Input Operational Amplifier, 8 to 36 V, -40 to 125 degC, 8-pin SOIC (D8), Green (RoHS & no Sb/Br)	D0008A	OPA827AIDR	Texas Instruments		
U9	1		TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER, PW0016A (TSSOP-16)	PW0016A	SN74LV4053ATPWRQ1	Texas Instruments		Texas Instruments
U10	1		Single Inverter Gate, DBV0005A	DBV0005A	SN74LVC1G04QDBVRQ1	Texas Instruments		Texas Instruments
U11	1		Single Power Supply 2-Input Positive NAND Gate CMOS Logic Level Shifter, DBV0005A	DBV0005A	SN74LV1T00DBVR	Texas Instruments		Texas Instruments
U12	1		Single Power Supply 2-Input Positive OR Gate CMOS Logic Level Shifter, DBV0005A	DBV0005A	SN74LV1T32DBVR	Texas Instruments		Texas Instruments
U13	1		36-V, Zero-Drift, Rail-to-Rail-Out Instrumentation Amplifier, D0008A (SOIC-8)	D0008A	INA188IDR	Texas Instruments	INA188ID	Texas Instruments
U15	1		36-V Precision, Rail-to-Rail Output, Operational Amplifier, D0008A (SOIC-8)	D0008A	TLV07IDR	Texas Instruments		Texas Instruments
U16	1		Low Noise, Very Low Drift, Precision Voltage Reference, -40 to 125 degC, 8-pin SOIC (D), Green (RoHS & no Sb/Br)	D0008A	REF5050AID	Texas Instruments		
U17	1		QUAD 16-BIT, 1LSB INL, BUFFERED, VOLTAGE-OUTPUT DIGITAL-to-ANALOG CONVERTERS, DMD0014A (VSON-14)	DMD0014A	DAC80004IDMD	Texas Instruments		Texas Instruments
U18	1		High Precision Operational Amplifier, 4 to 36 V, -40 to 85 degC, 8-pin SOIC (D8), Green (RoHS & no Sb/Br)	D0008A	OPA2277U	Texas Instruments		

Designator	Quantity	Value	Description	PackageReference	PartNumber	Manufacturer	Alternate PartNumber	Alternate Manufacturer
U19, U20	2		Low-Power, High Supply Range, 60-MHz, Fully Differential Amplifier, DGK0008A (VSSOP-8)	DGK0008A	THS4561IDGKR	Texas Instruments	THS4561IDGKT	Texas Instruments
U21	1		24-Bit, 128kSPS, 4-Ch, Simultaneous Sampling, Delta-Sigma ADC, PBS0032A (TQFP-32)	PBS0032A	ADS131A04IPBSR	Texas Instruments	ADS131A04IPBS	Texas Instruments
U22	1		Low Noise, Very Low Drift, Precision Voltage Reference, -40 to 125 degC, 8-pin MSOP(DGK), Green (RoHS & no Sb/Br)	DGK0008A	REF5025IDGKR	Texas Instruments		
U23	1		Tiva C Series Microcontroller, 1024 KB Flash, 256 KB SRAM, 12 Bit, 20 Channels, -40 to 85 degC, 128-Pin TQFP (PDT), Green (RoHS & no Sb/Br), Tape and Reel	PDT0128A	TM4C1294NCPDT3R	Texas Instruments		
U24	1		1-A Low-Dropout Regulator With Reverse Current Protection, DRV0006A	DRV0006A	TPS73733DRVR	Texas Instruments	TPS73733DRVT	Texas Instruments
U25	1		Single Output High PSRR LDO, 150 mA, Fixed 1.8 V Output, 2.5 to 6.5 V Input, with Low IQ, 5-pin SC70 (DCK), -40 to 85 degC, Green (RoHS & no Sb/Br)	DCK0005A	TPS71718DCKR	Texas Instruments	Equivalent	Texas Instruments
U26	1		USB ESD Solution with Power Clamp, 4 Channels, -40 to +85 degC, 6-pin SON (DRY), Green (RoHS & no Sb/Br)	DRY0006A	TPD4S012DRYR	Texas Instruments		
U27	1		Highly Integrated Full Featured Hi-Speed USB 2.0 ULPI Transceiver, QFN-32	5x5 QFN-32	USB3320C-EZK	Microchip		
U28	1		256K I2C™ CMOS Serial EEPROM, TSSOP-8	TSSOP-8	24AA256-I/ST	Microchip		
Y1	1		Crystal, 16.384 MHz, 20 pF, SMD	SMD, 4-Leads, Body 7.2x5.2mm	407F35E016M3840	CTS Electrocomponents		
Y2	1		Crystal, 25 MHz, 18 pF, SMD	ABM3	ABM3-25.000MHZ-D2Y-T	Abracon Corporation		
Y3	1		CRYSTAL, 32.768KHZ, 7PF, SMD	1.5x1.4x6.7mm	SSPT7F-7PF20-R	Seiko Instruments		
Y4	1		Crystal, 24 MHz, 18 pF, SMD	ABM3	ABM3-24.000MHZ-D2Y-T	Abracon Corporation		
R102	0	10.0k	RES, 10.0 k, 1%, 0.1 W, 0603	0603	CRCW060310K0FKEA	Vishay-Dale		
R160, R161	0	0	RES, 0, 5%, 0.1 W, 0603	0603	ERJ-3GEY0R00V	Panasonic		

Notes:

Unless otherwise noted in the Alternate PartNumber and/or Alternate Manufacturer columns, all parts may be substituted with equivalents.

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