

updated September 12, 2022

Designator	Quantity	Value	Description	PackageReference	PartNumber	Manufacturer	Alternate PartNumber	Alternate Manufacturer
IPC81	1		Printed Circuit Board		PMP23194	Any		
C3, C5, C14, C23	4	0.1uF	CAP, CERM, 0.1 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	603	CGA3E2XR1H104K080A A	TDK		
C4, C6	2	1000pF	CAP, CERM, 1000 pF, 100 V, +/- 5%, C0G/NP0, AEC-Q200 Grade 1, 0603	603	GCM1885C2A102JA16D	MuRata		
C8, C9, C13, C43, C44, C45	6	10uF	CAP, CERM, 10 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1210	1210	UMJ325KB7106KMHT	Taiyo Yuden		
C10, C27	2	4.7uF	CAP, CERM, 4.7 uF, 50 V, +/- 10%, X7S, AEC-Q200 Grade 1, 1206	1206	GCM31C71H475KA03L	MuRata		
C11	1	0.47uF	CAP, CERM, 0.47 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0805	805	CGA4J3X7R1H474K125A B	TDK		
C12, C32, C56, C810	4	100pF	CAP, CERM, 100 pF, 50 V, +/- 5%, C0G/NP0, AEC-Q200 Grade 1, 0402	402	CGA2B2C0G1H101J050B A	TDK		
C15	1	100uF	CAP, AL, 100 uF, 35 V, +/- 20%, 0.16 ohm, AEC-Q200 Grade 2, SMD	SMT Radial F	EEE-FK1V101P	Panasonic		
C16	1	0.01uF	CAP, CERM, 0.01 uF, 50 V, +/- 10%, X8R, AEC-Q200 Grade 0, 0402	402	CGA2B3X8R1H103K050B B	TDK		
C17, C18, C19, C36, C51, C52, C53, C53A	8	22uF	CAP, CERM, 22 uF, 16 V, +/- 20%, X7R, AEC-Q200 Grade 1, 1210	1210	CGA6P1X7R1C226M250A C	TDK		
C20, C26, C29, C31, C33, C34, C37, C39, C40, C42, C49, C50, C54	13	0.1uF	CAP, CERM, 0.1 uF, 50 V, +/- 20%, X7R, 0402	402	GRM155R71H104ME14D	MuRata		
C21, C38, C55	3	470pF	CAP, CERM, 470 pF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0402	402	GCM155R71H471KA37D	MuRata		
C22	1	2.2uF	CAP, CERM, 2.2 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1206	1206	GCM31CR71H225KA55L	MuRata		
C24	1	10uF	CAP, CERM, 10 uF, 16 V, +/- 20%, X6S, AEC-Q200 Grade 2, 0603	603	GRT188C81C106ME13D	MuRata		
C25	1	1uF	CAP, CERM, 1 uF, 25 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	603	GCM188R71E105KA64D	MuRata		
C28, C47	2	0.01uF	CAP, CERM, 0.01 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0402	402	CGA2B3X7R1H103K050B B	TDK		
C30	1	6800pF	CAP, CERM, 6800 pF, 25 V, +/- 10%, X7R, 0402	402	GRM155R71E682KA01D	MuRata		
C35	1	6800pF	CAP, CERM, 6800 pF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0402	402	CGA2B2X7R1H682K050B A	TDK		
C41	1	27pF	CAP, CERM, 27 pF, 50 V, +/- 5%, C0G/NP0, AEC-Q200 Grade 1, 0402	402	GCM1555C1H270JA16D	MuRata		
C46	1	3300pF	CAP, CERM, 3300 pF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0402	402	GCM155R71H332KA37D	MuRata		
C48, C57, C58	3	0.033uF	CAP, CERM, 0.033 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0402	402	CGA2B3X7R1H333K050B B	TDK		
C300	1	0.1uF	CAP, CERM, 0.1 uF, 25 V, +/- 10%, X5R, 0402	402	GRM155R61E104KA87D	MuRata	Dynamic load tester	
C311, C312, C313, C314, C315, C316, C317, C318,	8	10uF	CAP, CERM, 10 uF, 6.3 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0805	805	GCM21BR70J106KE22L	MuRata		
C319, C320, C321, C322, C323, C324, C325, C326	0	10uF	CAP, CERM, 10 uF, 6.3 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0805	805	GCM21BR70J106KE22L	MuRata	only if needed	
D1	1	100V	Diode, Schottky, 100 V, 5 A, SMA-FL	SMA-FL	NRVTSAF5100ET3G	ON Semiconductor	will start testing with MBRA340	
D2	0	60V	Diode, Schottky, 60 V, 1 A, AEC-Q101, SOD-123	SOD-123	PMEG6010CEGWJ	Nexperia	used instead of "Q2A"	
D3, D4, D5	3	60V	Diode, Schottky, 60 V, 1 A, SOD-323F	SOD-323F	PMEG6010CEJ,115	Nexperia		
D-surge	1	30V	Diode, TVS, Bi, 30 V, 48.4 Vc, 400 W, 8.3 A, SMA (non-polarized)	SMA (non-polarized)	SMAJ30CA	Littelfuse		
FB1, FB2	2		30 Ohms @ 100MHz 1 Power Line Ferrite Bead 0805 (2012 Metric) 8.5A 4mOhm AEC-Q200	805	BLM21SN300SZ1D	Murata	(
H9, H10, H11, H12	4		Bump, Hemisphere, 0.44 X 0.20, Clear	Transparent Bump	SJ-5303 (CLEAR)	3M		
J3, J3R, J5, J5R, J8, J8R	6		Disconnect Terminal, 5.08mm, 2x1, Tin, TH	Disconnect Terminal, 5.08mm, 2x1, TH	1212-ST	Keystone		
J33, J55, J88, J301	4		Header, 100mil, 2x1, Gold, TH	2x1 Header	TSW-102-07-G-S	Samtec		
J300	1		Receptacle, Ultra Miniature Coaxial, Male Pin, 50 ohm, SMT	Ultra small CO-AX SMD	U.FL-R-SMT-1(01)	Hirose Electric Co. Ltd.		
J-BAT	1		Terminal Block, 5.08 mm, 2x1, Brass, TH	2x1 5.08 mm Terminal Block	ED120/2DS	On-Shore Technology		
L1	1	1uH	Inductor, 1 uH, 3.4 A, 0.042 ohm, SMD	2.5x2mm	VCTA25201B-1R0MS6	Cyntec		
L2	1	47uH	Inductor, Shielded Drum Core, Ferrite, 47 uH, 0.39 A, 1.55 ohm, SMD	LPS3015	LPS3015-473MLB	Coilcraft		
L3	1	2.2uH	Shielded Power Inductors 2.5uH, 4.3mOhms, AEC Qualified SMD	SMT2_6MM51_6MM71	XGL6060-222MEC	Coilcraft		
L100	1	162 ohms at 100 MHz +/-25%	74270033 WE-AFB EMI Suppression Axial Ferrite Bead / 1T/side		74270033	Würth		
LBL1	1		Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650 x 0.200 inch	THT-14-423-10	Brady		
Q2, Q3	2	60V	MOSFET, 2-CH, N-CH, 60 V, 26 A, AEC-Q101, 4.9x5.9mm	4.9x5.9mm	Diodes Inc.	DMNH6021SPDQ See note below	NVMFD5C680NLT1G	ON Semiconductor
Q4, Q5	2		OptiMOS 6 Power-Transistor	PG-TDSON-8	IAUC60N04S6L039ATMA1	Infineon		
Q300	1	25V	MOSFET, N-CH, 25 V, 56 A, DQG0008A (VSON-CLIP-8)	DQG0008A	CSD16411Q3	Texas Instruments	Dynamic load tester	
R41	1	0.033	RES, 0.033, 1%, 1 W, AEC-Q200 Grade 0, 1206	1206	ERJ-8CWF033V	Panasonic		

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R42, R50, R58, R71, R91, R92	6	0	RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0402	402	ERJ-2GE0R00X	Panasonic		
R303, R500	2	0	RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0402	402	ERJ-2GE0R00X	Panasonic	only used after Bode plots done	
R43, R57, R70	3	100	RES, 100, 5%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW0402100RJNED	Vishay-Dale		
R44	1	1.00k	RES, 1.00 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW04021K00FKED	Vishay-Dale		
R45	1	681	RES, 681, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW0402681RFKED	Vishay-Dale		
R46, R60, R302	3	49.9k	RES, 49.9 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW040249K9FKED	Vishay-Dale	R302 for Bode loop testing only	
R47, R52, R62, R68, R72	5	1.5	RES, 1.5, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	603	CRCW06031R50JNEA	Vishay-Dale		
R48	1	5.62k	RES, 5.62 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW04025K62FKED	Vishay-Dale		
R49	1	48.7k	RES, 48.7 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW040248K7FKED	Vishay-Dale		
R51	1	7.50k	RES, 7.50 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW04027K50FKED	Vishay-Dale		
R53	1	19.1k	RES, 19.1 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW040219K1FKED	Vishay-Dale		
R54, R67, R74	3	57.6k	RES, 57.6 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW040257K6FKED	Vishay-Dale		
R55	1	0.18	RES, 0.18, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	603	ERJ-3RSFR18V	Panasonic		
R56	0	OMIT		402				
R59	1	0	RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0402	402	ERJ-2GE0R00X	Panasonic		
R63, R64, R65, R333, R555, R888	6	4.99k	RES, 4.99 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW04024K99FKED	Vishay-Dale		
R66	1	23.7k	RES, 23.7 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW040223K7FKED	Vishay-Dale		
R69	1		5 mOhms \pm 1% 1W Chip Resistor Wide 1206 (3216 Metric), 0612 Automotive AEC-Q200, Current Sense Metal Foil	1206	KRL3216T4A-M-R005-F-T1	Susumu		
R73	1	5.49k	RES, 5.49 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW04025K49FKED	Vishay-Dale		
R300	1	1	RES, 1.0, 5%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW04021R00JNED	Vishay-Dale	Dynamic load tester	
R301, R501	2	49.9	RES, 49.9, 1%, 0.1 W, AEC-Q200 Grade 0, 0402	402	ERJ-2RKF49R9X	Panasonic	for Bode loop testing only	
R303	1	15.8k	RES, 15.8 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW040215K8FKED	Vishay-Dale	for Bode loop testing only, becomes zero ohms after test	
R304	1	10.0k	RES, 10.0 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW040210K0FKED	Vishay-Dale	Dynamic load tester	
R305	1	49.9	RES, 49.9, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW040249R9FKED	Vishay-Dale	Dynamic load tester	
R306	1	100m	100 mOhms \pm 1% 3W Chip Resistor Wide 2512 (6432 Metric), 1225 Automotive AEC-Q200, Current Sense Metal Foil	2512 wide	KRL6432E-M-R100-F-T1	Susumu / Mouser	Dynamic load tester	
R502	1	105k	RES, 105 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW0402105KFKED	Vishay-Dale	for Bode loop testing only	
R503	1	20.0k	RES, 20.0 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402	CRCW040220K0FKED	Vishay-Dale	for Bode loop testing only	
R810	1	10	RES, 10, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	603	CRCW060310R0JNEA	Vishay-Dale		
SP3, SP5, SP8	3		MCX Connector Jack, Female Socket 50Ohm Through Hole Solder	CONN_JACK	733660061	Molex		
T1	1	22uH	Coupled inductor, 22 uH, 2.9 A, 0.1 ohm, SMD, high temperature "H" version	10.3x10.3mm	MSD1048H-223KED	Coilcraft		
TP1	1		Test Point, Multipurpose, White, TH	White Multipurpose Testpoint	5012	Keystone		
TP10	1		Test Point, Miniature, Black, TH	Black Miniature Testpoint	5001	Keystone		
TP301, TP501, TP801	3		Test Point, Multipurpose, Yellow, TH	Yellow Multipurpose Testpoint	5014	Keystone		
U1	1		2.2MHz Wide VIN Automotive Front-stage Multi-rail DC/DC, RTC0048E (VQFN-48)	QFN-48	LM5127QRGZRQ1	Texas Instruments	LM5127QRGZRQ1	Texas Instruments
FID1, FID2, FID3	0		Fiducial mark. There is nothing to buy or mount.	N/A	N/A	N/A		

Notes:

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

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