

Designator (Motherboard)	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
C3	1	CAP CER 100pF 100V C0G/NPO 0603	100pF	5%	603	Würth	885012206102	Yes	Yes
C7	1	CAP CER 1.8nF 50 V X7R 0603	1.8n	10%	603	TDK	C1608C0G2E182K080AA	Yes	Yes
C15	1	CAP CER 10 nF 50 V X7R 0603	10n	10%	603	Yageo	CC0603KRX7R9BB103	Yes	Yes
C17	1	CAP CER 22uF 25V 20% X5R 1206	22uF	20%	1206	Murata	GRT31CR61E226ME01L	Yes	Yes
C20	1	CAP CER 0.1uF 50V 10% X7R 1206	0.1uF	10%	1206	Kemet	C1206C104K5RACAUTO	Yes	Yes
C23	1	CAP CER 10uF 25V 10% X5R 1206	10uF	10%	1206	TDK	C3216X5R1E106K160AB	Yes	Yes
C29	1	CAP ALUM 22uF 20% 50V RADIAL	22uF	20%	Radial	Nichicon	UVK1H220MDD1TD	Yes	Yes
C30	1	CAP CER 1uF 25V 10% X7R 0603	1u	10%	603	Murata	GCM188R71E105KA64J	Yes	Yes
C38	1	CAP CER 2200PF 25V X7R 0603	2.2nF	10%	603	Kemet	C0603C222K3RACAUTO	Yes	Yes
C1-2	2	CAP FILM 1 uF 20% 310 VAC RADIAL	1u	20%	Radial Leaded 26.5x11mm	Würth	890334026027	No	Yes
C11-12 C18	3	CAP CER 0.1uF 50V 10% X7R 0603	0.1u	10%	603	Murata	GCM188R71H104KA57D	Yes	Yes
C13-14	2	CAP CER 3300PF 630V C0G 1206	3.3nF	5%	1206	Yageo	CGA5L4C0G2J332J160AA	Yes	Yes
C16 C37 C39	3	CAP CER DNP Placeholder 0603	DNP		603			Yes	Yes
C19 C22	2	CAP ALUM 330uF 20% 450V RADIAL, 30mm dia	330uF	20%	Radial	United Chemi-Con	EKM451VSN331MR40S	N	Yes
C24-25	2	CAP CER 0.1uF 630V 10% X7R 1210	0.1u	10%	1210	TDK	C3225X7R2J473K200AA	Yes	Yes
C26-27	2	CAP FILM 0.047uF 10% 630VDC RAD	47nF	10%	Box, Radial	Würth	890334023015	Yes	Yes
C4 C9-10	3	CAP CER 220pF C0G/NPO 0603	220p	5%	603	Kemet	C0603C221J5GACTU	Yes	Yes
C5-6	2	CAP CER 1.5nF 300V RADIAL	DNP		Radial, 10x4mm			Yes	Yes
C8 C28	2	CAP CER 1nF 25V X7R 0603	1n	10%	603	Yageo	CC0603KRX7R9BB102	Yes	Yes
CT1	1	XFRMR CURR SENSE 2mH 1:100 SMD	1:100		SMD	Pulse Electronics	P8208NL	No	Yes
D13	1	Diode Ultrafast 600V SOD-123-FL	ES1J		SOD-123_FL	onsemi	ES1JFL	No	Yes
D3 D10 D14	3	Diode, 200mA, 100V Std. Rec.	MMSD4148		SOD-123	onsemi	MMSD4148T1G	No	Yes
D1-2 D11-12	4	Diode Schottky 100V 200mA (DC) SOD-323	BAS16H		SOD-323	onsemi	BAS16HT1G	No	Yes
D5 D9	2	Diode GEN PURP 1kV 3A	S3M		SMC	onsemi	S3M	No	Yes
D6-7	2	Diode, Schottky, 30V, 200mA	BAT54H		SOD-323	onsemi	BAT54HT1G	No	Yes
F1	1	FUSE BOARD MOUNT 8A 250VAC RAD, 8.5mm dia., 5.08mm spacing	8A		Radial	Littlefuse	37418000000	Yes	Yes
J9	1	Conn, Edge, Dual, Female, 26 Position			Thru-Hole, 26 pos		1761426-3	No	Yes
J10	1	Jumper, 1mm dia. 10.16mm, Gold			Thru-Hole	Harwin	D3082-05	Yes	Yes
J1 J6-8	4	Testpin, Gold, 40mil			SIP-1	Mill-Max	3103-2-00-21-00-00-08-0	Yes	Yes
J2 J5	2	Header, Vert. 3 pin, 5MM Spacing			Thru-Hole	OST	ED100/3DS	Yes	Yes
J3-4	2	2 Position Wire to Board Terminal Block Horizontal with Board 0.138" (3.5mm) LS	10 Amp		TBD	Phoenix Contact	1984617	Yes	Yes
K1	1	Relay, SPST, 10A, 12V	DNP		Custom DIP4	Omron Electronics	G5Q-14A DC12	No	Yes
L1	1	Common Mode Choke, 2x 7mH, 2x20mOhm, 7.0A	7mH	+50%/-30%	Thru-Hole	Würth	7448040707	No	Yes
L2	1	Boost Inductor, 500 uH, 9 A	500uH	10%	PQ4040	Würth	750319122	No	Yes
L3	1	Common Mode Choke, 2x 30mH, 2x 46mOhm, 5.0A	30mH	+50%/-30%	Thru-Hole	Würth	7448050530	No	Yes
L4	1	Inductor, Differential, 150uH 5A 45 mOHM	150uH	20%	Thru-Hole	Würth	7447076	No	Yes
M1-2	2	MOSFET N CH 650V 44A TO-220F			TO-220	Fairchild	FCPF067N65S3	No	Yes
Q1	1	Transistor, NPN			SOT-23	onsemi	MMBT3904LT1G	Yes	Yes
Q2	1	MOSFET, N-CH, 60V, 115mA, SOT23	2N7002		SOT23	onsemi	2N7002	Yes	Yes
R2	1	RES 36.5 kOHM 1% 1/10W 0603	36.5k	1%	603	Yageo	RC0603FR-0736K5L	Yes	Yes
R7	1	RES SMD 4.02K OHM 1% 1/4W 1206	4.02k	1%	1206	Vishay Dale	CRCW12064K02FKEA	Yes	Yes
R10	1	RES SMD 47.5K OHM 1% 1/10W 0603	47.5k	1%	603	Stackpole	RMCF0603FT47K5	Yes	Yes
R12	1		DNP		603			Yes	Yes
R18	1	RES SMD 1K OHM 5% 1/2W 1206	1k	5%	1206	Vishay Dale	CRCW12061K00JNEAHP	Yes	Yes
R36	1	RES SMD 47.5K OHM 1% 1/10W 0603	47.5k	1%	603	Yageo	RC0603FR-0747K5L	Yes	Yes
R1 R6	2	RES SMD 1.0K OHM 1% 1/10W 0603	1.0k	1%	603	Yageo	RC0603FR-071KL	Yes	Yes
R15-16	2	RES SMD 100 OHM 1% 1/10W 0603	100	1%	603	Vishay	CRCW0603100RFKEC	Yes	Yes
R17 R23	2	RES SMD JUMPER 5% 1/4W 1206	0	5%	1206	Yageo	RC1206JR-070RL	Yes	Yes
R19-22 R28 R38	6	RES SMD 3.3M OHM 1% 1/4W 1206	3.3Meg	1%	1206	Yageo	RC1206FR-073M3L	Yes	Yes
R25-26 R29	3	RES SMD 100K OHM 1% 1/10W 0603	100k	1%	603	Stackpole	RMCF0603FT100K	Yes	Yes
R27 R39 R43-45	5	RES 10K OHM 1% 1/8W 0603	10k	1%	603	Stackpole	RNCP0603FTD10K0	Yes	Yes
R3-4 R11 R13-14 R42	6	RES SMD 0.0 OHM JUMPER 1/10W	0		603	Vishay Dale	CRCW06030000Z0EAHP	Yes	Yes
R30-31	2	RES SMD 47K OHM 1% 1/8W 0805	47k	1%	805	Vishay Dale	CRCW080547K0FKEA	Yes	Yes
R32-33	2	RES SMD 49.9 OHM 1% 1/10W 0603	49.9	1%	603	Yageo	RC0603FR-1349R9L	Yes	Yes
R37 R40-41	3	RES SMD 2.49M OHM 1% 1/4W 1206	2.49Meg	1%	1206	Stackpole	RMCF1206FT2M49	Yes	Yes
R5 R24 R34-35	4	RES SMD 10 OHM 1% 1/10W 0603	10	1%	603	Yageo	RC0603FR-1310RL	Yes	Yes
R8-9	2	RES, SMD, 2W	200m	1%	WSR2_4527	Vishay	WSR2R200FEA	No	Yes
RT1	1	NTC 100k 4250K 5% 0805	100k	5%	805	Murata	NCP21WF104J03RA	Yes	Yes
RT2	1	Thermistor, NTC, 10 Ohm, 3.7A	10		Thru-Hole	TDK	B57237S0100M000	Yes	Yes
RT3	1	Vairistor, Disc, 470V, 4.5kA			Thru-Hole	Littlefuse	V300LT20AP	No	Yes
S2	1	Switch, Mom, 32V, 50mA, SMD			SMD	C&K	KMR221GLFS	Yes	Yes
TP1 TP3-9 TP11-14 TP16-25	22	TEST POINT PC MINI RED			Thru-Hole	Keystone	5000	Yes	Yes
TP2 TP10 TP15	3	TEST POINT PC MINI BLACK			Thru-Hole	Keystone	5001	Yes	Yes
U1	1	Totem Pole PFC Controller, SOIC20 Less 17, 19	NCP1681		SOIC-20	onsemi	NCP1681AAD2R2G	No	Yes
U2	1	High Frequency Gate Driver	NCP51530		SOIC-8	onsemi	NCP51530ADR2G	No	Yes
U3	1	DUAL 60V P-CHANNEL MOSFET 8SOIC	FDS9958		SOIC8	onsemi	FDS9958	No	Yes
Z1	1	Zener Diode	4.7V		SOD-123	onsemi	MMSZ5230BT1G	Yes	Yes
Z2	1	Zener Diode	15V		SOD-123	onsemi	MMSZ4702T1G	Yes	Yes