

Bill of Materials

TI DESIGNS

TIDA-00324 - POL Multiphase (3-phase), 120A Power Reference Design

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint	Note
1	1	IPCB		Printed Circuit Board	Any	PMP9738			
2	3	C1, C2, C3	470uF	CAP, AL, 470uF, 35V, +/-20%, TH	Rubycon	35ZL470MEFC10X20		10x20	
3	4	C4, C5, C6, C7	0.1uF	CAP, CERM, 0.1uF, 50V, +/-20%, X7R, 0402	TDK	C1005X7R1H104M		0402	
4	1	C8	1uF	CAP, CERM, 1uF, 10V, +/-10%, X5R, 0402	MuRata	GRM155R61A105KE15D		0402	
5	10	C9, C10, C11, C12, C13, C14, C15, C16, C17, C18	470uF	CAP, AL, 470uF, 2.5V, +/-20%, 9 ohm, SMD	Panasonic	EEFSX0E471ER		7.3x1.8x4.3mm	
6	10	C19, C20, C21, C22, C23, C24, C25, C26, C27, C28	100uF	CAP, CERM, 100uF, 6.3V, +/-20%, X5R, 1210	Kemet	C1210C107M9PACTU		1210	
7	2	C29, C31	10uF	CAP, CERM, 10uF, 25V, +/-20%, X7R, 1210	TDK	C3225X7R1E106M		1210	
8	1	C30	1uF	CAP, CERM, 1uF, 25V, +/-10%, X7R, 0603	MuRata	GRM188R71E105KA12D		0603	
9	1	C32	15pF	CAP, CERM, 15pF, 50V, +/-5%, COG/NPO, 0402	MuRata	GRM1555C1H150JA01D		0402	
10	1	C41	4700pF	CAP, CERM, 4700pF, 100V, +/-10%, X7R, 0603	AVX	06031C472KAT2A		0603	
11	1	C42	1000pF	CAP, CERM, 1000pF, 50V, +/-10%, X7R, 0402	TDK	C1005X7R1H102K		0402	
12	4	C43, C44, C45, C48	1uF	CAP, CERM, 1uF, 25V, +/-10%, X5R, 0603	TDK	C1608X5R1E105K080A C		0603	
13	1	C46	47pF	CAP, CERM, 47pF, 50V, +/-5%, COG/NPO, 0402	MuRata	GRM1555C1H470JA01D		0402	
14	1	C47	2200pF	CAP, CERM, 2200pF, 50V, +/-10%, X7R, 0603	MuRata	GRM188R71H222KA01D		0603	
15	1	C49	0.33uF	CAP, CERM, 0.33uF, 6.3V, +/-10%, X5R, 0402	MuRata	GRM155R60J334KE01D		0402	
16	2	C50, C51	4.7uF	CAP, CERM, 4.7uF, 10V, +/-20%, X5R, 0402	MuRata	GRM155R61A475M		0402	
17	1	C52	2200pF	CAP, CERM, 2200pF, 50V, +/-10%, X7R, 0402	TDK	C1005X7R1H222K		0402	
18	3	C100, C200, C300	1000pF	CAP, CERM, 1000pF, 25V, +/-5%, COG/NPO, 0402	TDK	C1005C0G1E102J		0402	
19	15	C101, C102, C103, C104, C105, C201, C202, C203, C204, C205, C301, C302, C303, C304, C305	10uF	CAP, CERM, 10uF, 25V, +/-10%, X7R, 1206	MuRata	GRM31CR71E106KA12L		1206	
20	3	C106, C206, C306	3300pF	CAP, CERM, 3300pF, 50V, +/-10%, X7R, 0402	TDK	C1005X7R1H332K		0402	

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21	3	C110, C210, C310	0.1uF	CAP, CERM, 0.1uF, 25V, +/-5%,	Kemet	C0603C104J3RACTU		0603	
22	3	C111, C211, C311	10uF	CAP, CERM, 10uF, 6.3V, +/-20%,	Kemet	C0603C106M9PACTU		0603	
23	3	C112, C212, C312	0.1uF	CAP, CERM, 0.1uF, 16V, +/-10%,	MuRata	GRM155R61C104KA88D		0402	
24	3	C113, C213, C313	1500pF	CAP, CERM, 1500pF, 100V, +/-	AVX	08051C152KAT2A		0805	
25	2	D1, D3	30V	Diode, Schottky, 30V, 0.5A, SOD-	ON Semiconductor	MBR0530T1G		SOD-123	
26	1	D2	30V	Diode, Schottky, 30V, 0.2A, SOD-	Diodes Inc.	BAT54WS-7-F		SOD-323	
27	1	D4	Red	LED, Red, SMD	Lite-On	LTST-C170KRKT		LED_0805	
28	4	H1, H2, H3, H4		Machine Screw, Round, #4-40 x	B&F Fastener Supply	NY PMS 440 0025 PH		Screw	
29	4	H5, H6, H7, H8		Standoff, Hex, 0.5"L #4-40 Nylon	Keystone	1902C		Standoff	
30	4	H9, H10, H11, H12		Bumpon, Hemisphere, 0.44 X	3M	SJ-5303 (CLEAR)		Transparent	
31	4	J1, J2, J6, J8	GSLU-70	Lug, Solderless, #2 - #8 AWG,	ILSCO	GSLU-70		1.55 x 0.50 inch	
32	2	J3, J47	PEC02SAAN	Header, Male 2-pin, 100mil	Sullins	PEC02SAAN		0.100 inch x 2	
33	3	J4, J9, J45		Terminal Block, 6A, 3.5mm Pitch,	On-Shore Technology	ED555/2DS		7.0x8.2x6.5mm	
34	1	J41		Header (shrouded), 100mil, 5x2,	TE Connectivity	5103308-1		5x2 Shrouded	
35	2	J42, J46	PEC05DAAN	Header, Male 2x5-pin, 100mil	Sullins	PEC05DAAN		0.100 inch x 5 X	
36	1	J43	1x3	Header, TH, 100mil, 1x3, Gold	Sullins Connector Solu	PBC03SAAN		PBC03SAAN	
37	1	J44	PEC03SAAN	Header, Male 3-pin, 100mil	Sullins	PEC03SAAN		0.100 inch x 3	
38	1	L1	6.8 uH	Inductor, SMT, yyA, zzmilohm	TDK	SLF7032T-xxx		0.276 sq inch	
39	3	L100, L200, L300	210 uH	Inductor, Low-Profile, High-Current	Cooper Bussman	FP1308R3-R21		2525/5050	
40	2	LBL1, LBL41		Thermal Transfer Printable Labels,	Brady	THT-14-423-10		PCB Label	
41	1	Q1	25V	MOSFET, N-CH, 25V, 40A, SON	Texas Instruments	CSD16556Q5B		SON 5x6mm	
42	3	R2, R4, R7	0.003	RES, 0.003 ohm, 1%, 1W, 2512	CTS Resistor	73M1R003F		2512	
43	1	R5	8.06k	RES, 8.06k ohm, 1%, 0.063W,	Vishay-Dale	CRCW04028K06FKED		0402	
44	4	R8, R51, R52, R53	10.0k	RES, 10.0k ohm, 1%, 0.063W,	Vishay-Dale	CRCW040210K0FKED		0402	
45	1	R9	402	RES, 402 ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW0402402R2FKED		0402	
46	1	R10	200k	RES, 200k ohm, 1%, 0.063W,	Vishay-Dale	CRCW0402200KFKED		0402	
47	1	R11	1.00k	RES, 1.00k ohm, 1%, 0.063W,	Vishay-Dale	CRCW04021K00FKED		0402	
48	1	R13	0.002	RES, 0.002 ohm, 1%, 2W, 2512	Stackpole Electronics I	CSNL2512FT2L00		2512	
49	1	R14	330	RES, 330 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW0402330RJNED		0402	
50	2	R15, R16	49.9	RES, 49.9 ohm, 1%, 0.063W,	Vishay-Dale	CRCW040249R9FKED		0402	
51	6	R17, R18, R19, R20, R22,	1.00Meg	RES, 1.00Meg ohm, 1%, 0.063W,	Vishay-Dale	CRCW04021M00FKED		0402	
52	1	R21	51	RES, 51 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW040251R0JNED		0402	
53	1	R24	261k	RES, 261k ohm, 1%, 0.063W,	Vishay-Dale	CRCW0402261KFKED		0402	
54	1	R25	294k	RES, 294k ohm, 1%, 0.063W,	Vishay-Dale	CRCW0402294KFKED		0402	
55	1	R44	402k	RES, 402k ohm, 1%, 0.063W,	Vishay-Dale	CRCW0402402KFKED		0402	
56	1	R45	16.5k	RES, 16.5k ohm, 1%, 0.063W,	Vishay-Dale	CRCW040216K5FKED		0402	
57	2	R46, R49	9.31k	RES, 9.31k ohm, 1%, 0.063W,	Vishay-Dale	CRCW04029K31FKED		0402	
58	1	R47	14.0k	RES, 14.0k ohm, 1%, 0.063W,	Vishay-Dale	CRCW040214K0FKED		0402	
59	1	R48	13.7k	RES, 13.7k ohm, 1%, 0.063W,	Vishay-Dale	CRCW040213K7FKED		0402	
60	5	R55, R56, R57, R60, R62	20.0k	RES, 20.0k ohm, 1%, 0.063W,	Vishay-Dale	CRCW040220K0FKED		0402	
61	2	R58, R61	150k	RES, 150k ohm, 1%, 0.063W,	Vishay-Dale	CRCW0402150KFKED		0402	
62	1	R63	39.2k	RES, 39.2k ohm, 1%, 0.063W,	Vishay-Dale	CRCW040239K2FKED		0402	
63	7	R64, R65, R66, R71, R81,	100	RES, 100 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW0402100RJNED		0402	
64	1	R67	100k	RES, 100k ohm, 1%, 0.063W,	Vishay-Dale	CRCW0402100KFKED		0402	
65	1	R68	6.81k	RES, 6.81k ohm, 1%, 0.063W,	Vishay-Dale	CRCW04026K81FKED		0402	
66	1	R69	2.43k	RES, 2.43k ohm, 1%, 0.063W,	Vishay-Dale	CRCW04022K43FKED		0402	
67	1	R70	121k	RES, 121k ohm, 1%, 0.063W,	Vishay-Dale	CRCW0402121KFKED		0402	
68	2	R72, R73	10	RES, 10 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW040210R0JNED		0402	
69	1	R74	1.0	RES, 1.0 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW04021R00JNED		0402	

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70	3	R100, R200, R300	0	RES, 0 ohm, 5%, 0.063W, 0402	Yageo America	RC0402JR-070RL		0402	
71	3	R110, R210, R310	2.2	RES, 2.2 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW0402R20JNED		0402	
72	3	R113, R213, R313	1.0	RES, 1.0 ohm, 5%, 0.5W, 1206	Bourns	CRM1206-JW-1R0ELF		1206	
73	2	TH1, TH2		Thru Hole, 15 mil, plated					
74	4	TP1, TP3, TP4, TP6	5000	Test Point, Red, Thru Hole Color	Keystone	5000		0.100 x 0.100	
75	3	TP2, TP5, TP7	5001	Test Point, Black, Thru Hole Color	Keystone	5001		0.100 x 0.100	
76	1	TP8	131-4244-00	Adaptor, 3.5-mm probe clip (or	Tektronix	131-4244-00		0.200 inch	
77	3	TP100, TP200, TP300	SMT	Test Point, Miniature, SMT	Keystone	5015		Testpoint_Keyst	
78	1	TP301	5016	Test Point, SM, 0.150 x 0.090	Keystone	5016		0.185 x 0.135	
79	1	U1	TLC555CD	IC, Timer, Low-Power CMOS	TI	TLC555CD		SO8	
80	1	U2	UCC37324D	IC, Dual 4-A High Speed Low-	TI	UCC37324D		SO-8	
81	1	U3		Buck Adjustable Regulator with 3.1	Texas Instruments	TPS62110RSAR		RSA0016B	
82	1	U41		3-Phase, D-CAP+ Step-Down	Texas Instruments	TPS53631RSB		RSB0040E	
83	1	U42		Cap-Free, NMOS, 250mA Low	Texas Instruments	TPS73233DBV		DBV0005A	
84	3	U100, U200, U300		Synchronous Buck NexFET Power	Texas Instruments	CSD95372BQ5M		DQP0012A	
85	0	FID1, FID2, FID3		Fiducial mark. There is nothing to	N/A	N/A		Fiducial	

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