

Bill of Materials

TI DESIGNS

TIDA-00500

Capacitor-based Backup Power Supply for PLC Modules

Item	Qty	Reference	Description	Manufacturer	Manufacturer Part Number	PCB Footprint
1	1	!PCB1	Printed Circuit Board	Any	TIDA-00500	
2	1	R14	RES, 10.2 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW040210K2FKED	0402
3	1	R17	RES, 115 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW0402115KFKED	0402
4	1	C1	CAP, CERM, 0.1uF, 100V, +/-10%, X7R, 0805	Kemet	C0805C104K1RACTU	0805
5	1	C17	CAP, CERM, 22 pF, 50 V, +/- 5%, COG/NP0, 0805	Kemet	C0805C220J5GACTU	0805_HV
6	1	C18	CAP, CERM, 2200 pF, 50 V, +/- 5%, COG/NP0, 0805	TDK	C2012COG1H222J	0805_HV
7	1	C20	CAP, CERM, 0.01 uF, 100 V, +/- 10%, X7R, 0805	TDK	C2012X7R2A103K	0805_HV
8	1	C21	CAP, CERM, 100 pF, 50 V, +/- 5%, COG/NP0, 0805	TDK	C2012C0G1H101J	0805_HV
9	1	C23	CAP, CERM, 10 uF, 16 V, +/- 10%, X5R, 0805	MuRata	GRM21BR61C106KE15L	0805_HV
10	1	R1	RES, 169 k, 0.1%, 0.125 W, 0805	Yageo America	RT0805BRD07169KL	0805_HV
11	1	R15	RES, 4.02 k, 1%, 0.125 W, 0805	Panasonic	ERJ-6ENF4021V	0805_HV
12	1	R16	RES, 8.87 k, 1%, 0.125 W, 0805	Panasonic	ERJ-6ENF8871V	0805_HV
13	1	R2	RES, 15.8 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080515K8FKEA	0805_HV
14	1	R23	RES, 1.50 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW08051K50FKEA	0805_HV
15	1	R24	RES, 2.26 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW08052K26FKEA	0805_HV
16	1	R25	RES, 150 k, 1%, 0.125 W, 0805	Panasonic	ERJ-6ENF1503V	0805_HV
17	1	R26	RES, 187 k, 1%, 0.125 W, 0805	Panasonic	ERJ-6ENF1873V	0805_HV
18	1	R27	RES, 47.0 k, 1%, 0.125 W, 0805	Panasonic	ERJ-6ENF4702V	0805_HV
19	1	R28	RES, 30.1 k, 1%, 0.125 W, 0805	Panasonic	ERJ-6ENF3012V	0805_HV
20	1	R37	RES, 33.2 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080533K2FKEA	0805_HV
21	1	R39	RES, 66.5 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080566K5FKEA	0805_HV
22	1	R4	RES, 4.99 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW08054K99FKEA	0805_HV
23	1	R41	RES, 73.2 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080573K2FKEA	0805_HV
24	1	R45	RES, 52.3 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080552K3FKEA	0805_HV
25	1	R47	RES, 1.02 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW08051K02FKEA	0805_HV
26	2	C6, C10	CAP, CERM, 0.01 uF, 50 V, +/- 10%, X7R, 0805	TDK	C2012X7R1H103K	0805_HV
27	2	R12, R13	RES, 47.5 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080547K5FKEA	0805_HV
28	2	R19, R20	RES, 0, 5%, 0.125 W, 0805	Yageo America	RC0805JR-070RL	0805_HV
29	2	R38, R57	RES, 10.0, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080510R0FKEA	0805_HV
30	2	R42, R43	RES, 2.49 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW08052K49FKEA	0805_HV
31	2	R7, R8	RES, 40.2 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080540K2FKEA	0805_HV
32	5	C5, C9, C11, C19, C28	CAP, CERM, 0.1 uF, 50 V, +/- 10%, X7R, 0805	TDK	C2012X7R1H104K	0805_HV
33	5	R3, R5, R22, R29, R46	RES, 100 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW0805100KFKEA	0805_HV

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34	5	R6, R9, R10, R18, R21	RES, 10.0 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080510K0FKEA	0805_HV
35	1	C8	CAP, CERM, 22 μ F, 10 V, +/- 20%, X5R, 1210	TDK	C3225X5R1A226M	1210
36	2	C2, C3	CAP, CERM, 10 μ F, 50V, +/-10%, X7R, 1210	MuRata	GRM32ER71H106KA12L	1210
37	3	C14, C15, C22	CAP, CERM, 1 μ F, 100 V, +/- 10%, X7R, 1210	TDK	C3225X7R2A105K200AA	1210
38	1	R11	RES, 0.02, 1%, 0.33 W, 1210	Panasonic	ERJ-L14KF20MU	1210M
39	1	C7	CAP, CERM, 10 μ F, 50 V, +/- 10%, X5R, 1210	TDK	C3225X5R1H106K250AB	1210_280
40	1	U1	1 MHz, 45 μ A, RRIO, Single Operational Amplifier, 2.1 to 5.5 V, -40 to 125 degC, 5-pin SOT23 (DCK0005A), Green (RoHS & no Sb/Br)	Texas Instruments	OPA348AIDCKT	DCK0005A_N
41	1	U4	Single Output LDO, 50 mA, Adjustable 1.175 to 48 V Output, 7 to 50 V Input, 8-pin MSOP (DGN), -40 to 125 degC, Green (RoHS & no Sb/Br)	Texas Instruments	TPS7A4101DGNR	DGN0008B_N
42	1	Q14	Transistor, PNP, 80 V, 8 A, DPAK	ON Semiconductor	MJD45H11RLG	DPAK
43	1	Q5	MOSFET, N-CH, 100 V, 31 A, DPAK	International Rectifier	IRFR3410PBF	DPAK
44	2	Q1, Q2	MOSFET, P-CH, -100 V, 3 A, DPAK	Diodes Inc.	ZXMP10A16KTC	DPAK
45	3	FID1, FID2, FID3	Fiducial mark. There is nothing to buy or mount.	N/A	N/A	Fiducial10-20
46	3	TP4, TP5, TP18	Test Point, Compact, Black, TH	Keystone	5006	Keystone5006
47	10	TP1, TP2, TP3, TP8, TP9, TP10, TP14, TP15, TP16, TP19	Test Point, Compact, White, TH	Keystone	5007	Keystone5007
48	2	TP6, TP7	Test Point, Compact, White, TH	Keystone	5007	Keystone5007
49	4	H5, H6, H7, H8	Standoff, Hex, 0.5"L #4-40 Nylon	Keystone	1902C	Keystone_1902C
50	1	D9	LED, Green, SMD	OSRAM	LG L29K-G2J1-24-Z	LG L29K_GREEN
51	1	U6	High Voltage Switch Mode Regulator, 8-pin Narrow SOIC, Pb-Free	Texas Instruments	LM5001MAX/NOPB	M08A_N
52	1	U7	3-Terminal Adjustable Current Source, 8-pin Narrow SOIC, Pb-Free	Texas Instruments	LM334M/NOPB	M08A_N
53	1	U3	Single General Purpose, Low Voltage, Tiny Pack Comparator, 5-pin SOT-23	Texas Instruments	LMV331MSX/NOPB	MF05A_N
54	1	U2	Positive High Voltage Hot Swap / Inrush Current Controller with Power Limiting, 10-pin MSOP, Pb-Free	Texas Instruments	LM5069MM-2/NOPB	MUB10A_N
55	4	H1, H2, H3, H4	Machine Screw, Round, #4-40 x 1/4, Nylon, Phillips panhead	B&F Fastener Supply	NY PMS 440 0025 PH	NY PMS 440 0025 PH
56	1	J5	Conn Term Block, 2POS, 3.81mm, TH	Phoenix Contact	1727010	PhoenixConact_1727010
57	1	D1	Diode, TVS, Bi, 36 V, 400 W, SMA	Littelfuse	SMAJ36CA	SMA
58	1	D4	Diode, TVS, Bi, 33 V, 400 W, SMA	Littelfuse	SMAJ33CA	SMA
59	4	D2, D6, D8, D11	Diode, Schottky, 100 V, 3 A, SMC	Central Semiconductor	CMSH3-100 TR13	SMC
60	1	C4	CAP, AL, 1 μ F, 50 V, +/- 20%, 5 ohm, SMD	Panasonic	EEE-FC1H1R0R	SM_RADIAL_B
61	1	D3	Diode, Zener, 10 V, 300 mW, SOD-523	Diodes Inc.	BZT52C10T-7	SOD-523
62	1	D13	Diode, Schottky, 30 V, 0.2 A, SOT-23	Vishay-Semiconductor	BAT54S-E3-08	SOT-23
63	2	Q3, Q4	Transistor, NPN, 80 V, 1.5 A, SOT-23	Diodes Inc.	FMMT620TA	SOT-23



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64	1	J3	Terminal Block, 6A, 3.5mm Pitch, 4-Pos, TH	On-Shore Technology	ED555/4DS	TERM_BLK_ED555-4DS
65	1	C16	CAP, AL, 10000 μ F, 50 V, +/- 20%, ohm, TH	Nichicon	UVR1H103MRD	VR_2500x5000
66	1	L1	Inductor, Shielded Drum Core, Powdered Iron, 3.3 μ H, 2.5 A, 0.069 ohm, SMD	Würth Elektronik	74437324033	WE-LHMI_4020
67	1	L2	Inductor, Shielded Drum Core, Ferrite, 150 μ H, 2.1 A, 0.2 ohm, SMD	Würth Elektronik	7447709151	WE-PD_1210
68	1	J1	Header, 2.54 mm, 2x1, Gold, TH	Würth Elektronik	61300211121	WURTH_61300211121
69	1	J14	Header, 2.54 mm, 2x1, Gold, TH	Würth Elektronik	61300211121	WURTH_61300211121
70	1	J2	Header, 2.54 mm, 2x1, Gold, TH	Würth Elektronik	61300211121	WURTH_61300211121
71	1	J4	Header, 2.54 mm, 2x1, Gold, TH	Würth Elektronik	61300211121	WURTH_61300211121
72	1	J6	Header, 2.54 mm, 2x1, Gold, TH	Würth Elektronik	61300211121	WURTH_61300211121

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