

# Materials

TI DESIGNS

TIDA-00449

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint	Note
1	1	!PCB1		Printed Circuit Board	Any	TIDA-00449			
2	12	C1, C2, C5, C8, C9, C12, C15, C17, C19, C20, C21, C22	0.22uF	CAP, CERM, 0.22 $\mu$ F, 16 V, +/- 10%, X7R, 0603_095	Wurth Elektronik	885012206048		0603_095	
3	2	C3, C6	10uF	CAP, CERM, 10uF, 35V, +/-10%, X7R, 1210	MuRata	GRM32ER7YA106KA12L		1210	
4	2	C4, C7	1uF	CAP, CERM, 1 $\mu$ F, 50 V, +/- 10%, X7R, 0805	MuRata	GRM21BR71H105KA12L		0805	
5	2	C10, C13	1uF	CAP, CERM, 1 $\mu$ F, 16 V, +/- 10%, X7R, 0603_095	Wurth Elektronik	885012206052		0603_095	
6	2	C11, C16	4700pF	CAP, CERM, 4700 pF, 50 V, +/- 10%, X7R, 0603_095	Wurth Elektronik	885012206087		0603_095	
7	2	C14, C32	4.7uF	CAP, CERM, 4.7 $\mu$ F, 10 V, +/- 10%, X7R, 0805	Wurth Elektronik	885012207025		0805	
8	1	C18	470pF	CAP, CERM, 470 pF, 50 V, +/- 10%, X7R, 0603_095	Wurth Elektronik	885012206081		0603_095	
9	4	C23, C25, C28, C29	0.1uF	CAP, CERM, 0.1uF, 100V, +/-10%, X7R, 0603	MuRata	GRM188R72A104KA35D		0603	
10	3	C24, C26, C27	0.1uF	CAP, CERM, 0.1 $\mu$ F, 50 V, +/- 10%, X7R, 0603_095	Wurth Elektronik	885012206095		0603_095	
11	2	C30, C33	0.1uF	CAP, CERM, 0.1 $\mu$ F, 16 V, +/- 10%, X7R, 0603_095	Wurth Elektronik	885012206046		0603_095	
12	1	C31	2200pF	CAP, CERM, 2200 pF, 16 V, +/- 10%, X7R, 0603_095	Wurth Elektronik	885012206036		0603_095	
13	3	D1, D4, D6	100V	Diode, Ultrafast, 100V, 0.15A, SOD-123	Diodes Inc.	1N4148W-7-F		SOD-123	
14	16	D2, D3, D5, D7, D8, D9, D10, D11, D12, D13, D18, D19, D20, D21, D22, D23	5.6V	Diode, Zener, 5.6V, 200mW, SOD-323	Diodes Inc.	MMSZ5232BS-7-F		SOD-323	
15	1	D14	100V	Diode, Switching, 100 V, 0.2 A, SOD-123	ON Semiconductor	MMSD914T1G		SOD-123	
16	1	D15	600V	Diode, Ultrafast, 600V, 3A, SMC	ON Semiconductor	MURS360T3G		SMC	
17	1	D16	75V	Diode, TVS, Uni, 75V, 1500W, SMC	Fairchild Semiconductor	SMCJ75A		SMC	
18	1	D17	16V	Diode, Zener, 16V, 500mW, SOD-123	Diodes Inc.	MMSZ5246B-7-F		SOD-123	
19	4	D24, D25, D26, D27	Green	LED, Green, SMD	Wurth Elektronik	150060GS75000		LED_0603	
20	3	FID1, FID2, FID3		Fiducial mark. There is nothing to buy or mount.	N/A	N/A		Fiducial	
21	4	H1, H2, H3, H4		Bumpon, Hemisphere, 0.44 X 0.20, Clear	3M	SJ-5303 (CLEAR)		Transparent Bumpon	
22	4	HS1, HS2, HS3, HS4		Heatsink, DDPak/TO-263, SMT	Aavid	573300D00010G		Heatsink, DDPak	
23	1	J1		Terminal block, 3.5mm, 11x1, R/A, TH	Molex	395021011		39.90x7.03x9.33 mm	
24	4	J2, J3, J4, J5		Power Element Bush, M5, 4x2	Wurth Elektronik	7460305		Power Bush	
25	1	J6		Header, 2.54 mm, 2x1, Gold, TH	Wurth Elektronik	61300211121		Header, 2.54mm, 2x1, TH	
26	1	J7		Header, 100mil, 4x2, Tin, TH	Sullins Connector Solutions	PEC04DAAN		Header, 4x2, 100mil, Tin	
27	4	L1, L2, L3, L4	220 ohm	Ferrite Bead, 220 ohm @ 100 MHz, 2.5 A, 0603	MuRata	BLM18SG221TN1D		0603	
28	10	Q1, Q2, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11	12V	MOSFET, N/P-CH, 12 V, 2.1 A, 1.0x0.35x0.6mm	Texas Instruments	CSD13381F4		1.0x0.35x0.6mm	

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29	2	Q3, Q19	60V	MOSFET, N-CH, 60 V, 0.26 A, SOT-23	ON Semiconductor	2N7002ET1G		SOT-23	
30	2	Q12, Q18	-60V	MOSFET, P-CH, -60 V, -0.185 A, SOT-23	Vishay-Siliconix	TP0610K-T1-GE3		SOT-23	
31	4	Q13, Q14, Q15, Q16	100V	MOSFET, N-CH, 100 V, 200 A,	Texas Instruments	CSD19536KTT			
32	1	Q17	-12V	MOSFET, P-CH, -12 V, -2.3 A,	Texas Instruments	CSD23381F4			
33	20	R1, R3, R6, R11, R14, R17, R20, R21, R22, R29, R31, R35, R38, R41, R63, R64, R70, R71, R72, R73	1.0k	RES, 1.0 k, 5%, 0.1 W, 0603	Vishay-Dale	CRCW06031K00JNEA		0603	
34	10	R2, R7, R12, R15, R18, R23, R28, R32, R36, R39	28.7	RES, 28.7, 1%, 0.75 W, 2010	Vishay-Dale	CRCW201028R7FKEF		2010	
35	13	R4, R9, R13, R16, R19, R24, R25, R26, R30, R34, R37, R40, R68	10k	RES, 10 k, 5%, 0.1 W, 0603	Vishay-Dale	CRCW060310K0JNEA		0603	
36	2	R5, R10	100k	RES, 100k ohm, 1%, 0.125W, 0805	Vishay-Dale	CRCW0805100KFKEA		0805	
37	15	R8, R42, R43, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60	100	RES, 100 ohm, 1%, 0.125W, 0805	Vishay-Dale	CRCW0805100RFKEA		0805	
38	2	R27, R74	3.0k	RES, 3.0 k, 5%, 0.1 W, 0603	Vishay-Dale	CRCW06033K00JNEA		0603	
39	1	R33	499k	RES, 499 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW0603499KFKEA		0603	
40	2	R44, R45	1.00Meg	RES, 1.00 M, 1%, 0.1 W, 0603	Vishay-Dale	CRCW06031M00FKEA		0603	
41	3	R46, R47, R48	0.0015	RES, 0.0015, 1%, 2 W, AEC-Q200 Grade 0, 2512	TT Electronics/IRC	ULRB22512R0015FLFSLT		2512	
42	3	R61, R66, R75	100k	RES, 100 k, 5%, 0.1 W, 0603	Vishay-Dale	CRCW0603100KJNEA		0603	
43	1	R62	154k	RES, 154 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW0603154KFKEA		0603	
44	1	R65	130k	RES, 130 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW0603130KFKEA		0603	
45	3	R67, R69, R76	10.0k	RES, 10.0 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW060310K0FKEA		0603	
46	2	RT1, RT2	10.0k ohm	Thermistor NTC, 10.0k ohm, 1%, Disc, 5x8.4 mm	SEMITEC Corporation	103AT-2		Disc, 5x8.4 mm	
47	2	S1, S2		Switch, SPST-NO, Off-Mom, 1 Pos, 0.05A, 12 VDC, SMT	Würth Elektronik	430182070816		6.2x6.2mm	
48	1	TP1	Black	Test Point, Miniature, Black, TH	Keystone	5001		Black Miniature Testpoint	
49	1	U1		Battery Monitor for Lithium-Ion and Phosphate Battery Packs, DBT0030A	Texas Instruments	BQ7693003DBT		DBT0030A	
50	1	U2		Ultralow Power, Supply Voltage Supervisor, DBZ0003A	Texas Instruments	TPS3839G33DBZR		DBZ0003A	
51	1	U3		16 MHz Mixed Signal Microcontroller with 16 KB Flash, 512 B SRAM and 24 GPIOs, -40 to 85 degC, 20-pin SOP (PW), Green (RoHS & no Sb/Br)	Texas Instruments	MSP430G2553IPW20		PW0020A	
52	1	U4		0.5°C Accurate 2-Pin Digital NTC or PTC Thermistor Replacement, LPG0002A	Texas Instruments	LMT01LPG		LPG0002A	

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