

Bill of Materials

TI DESIGNS

TIDA-00281

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	PCB Footprint
1	1	!PCB1		Printed Circuit Board	Any	TIDA-00281	
2	15	3V3_B, 3V3_CAN, 12V_B,	Red	Test Point, Miniature, Red, TH	Keystone	5000	Red Miniature
3	8	5V_A, 5V_CAN, 5V_I_N, 5V_I_P, 12V_A, 12V_BATT_A, DIS_FLYBACK, PSR_FB	Orange	Test Point, Miniature, Orange, TH	Keystone	5003	Orange Miniature Testpoint
4	2	C1, C10	680pF	CAP, CERM, 680 pF, 50 V, +/- 10%, X7R, 0603	Kemet	C0603C681K5RACTU	0603
5	10	C2, C9, C15, C22, C26, C54, C63, C76, C90, C99	0.1uF	CAP, CERM, 0.1 µF, 100 V, +/- 10%, X7R, 0805	TDK	C2012X7R2A104K	0805
6	18	C3, C4, C7, C8, C14, C18,	10uF	CAP, CERM, 10uF, 50V, +/-10%,	MuRata	GRM32ER71H106KA12L	1210
7	3	C5, C16, C17	220uF	CAP, AL, 220 µF, 100 V, +/- 20%,	Panasonic	EEV-FK2A221M	SMT Radial K16
8	27	C11, C12, C32, C36, C37,	0.1uF	CAP, CERM, 0.1 µF, 25 V, +/-	TDK	C1608X7R1E104K	0603
9	1	C13	0.22uF	CAP, CERM, 0.22 µF, 16 V, +/-	AVX	0805YC224KAT2A	0805
10	11	C20, C21, C31, C49, C68, C69, C70, C71, C106, C107, C108	2200pF	CAP, CERM, 2200 pF, 25 V, +/- 10%, X7R, 0402	MuRata	GRM155R71E222KA01D	0402
11	1	C25	0.068uF	CAP, CERM, 0.068 µF, 16 V, +/-	MuRata	GRM188R71C683KA01D	0603
12	5	C27, C28, C56, C57, C67	22uF	CAP, CERM, 22 µF, 25 V, +/-	MuRata	GRM32ER71E226KE15L	1210
13	2	C33, C41	68pF	CAP, CERM, 68 pF, 50 V, +/- 5%, C0G/NP0, 0603	TDK	C1608C0G1H680J	0603
14	6	C35, C38, C60, C74, C88, C97	1uF	CAP, CERM, 1 µF, 25 V, +/- 10%, X7R, 0603	TDK	C1608X7R1E105K080A B	0603
15	1	C42	4700pF	CAP, CERM, 4700 pF, 50 V, +/- 10%, X7R, 0402	TDK	C1005X7R1H472K	0402
16	3	C43, C47, C48	0.015uF	CAP, CERM, 0.015 µF, 25 V, +/- 10%, X7R, 0603	MuRata	GRM188R71E153KA01D	0603

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17	1	C50	2200pF	CAP, CERM, 2200 pF, 2000 V, +/- 10%, X7R, 1812	TDK	C4532X7R3D222K	1812
18	1	C61	220pF	CAP, CERM, 220 pF, 50 V, +/- 10%, X7R, 0603	Kemet	C0603C221K5RACTU	0603
19	1	C62	15pF	CAP, CERM, 15 pF, 50 V, +/- 5%, C0G/NP0, 0603	TDK	C1608C0G1H150J	0603
20	1	C64	330pF	CAP, CERM, 330 pF, 50 V, +/- 10%, X7R, 0603	Kemet	C0603C331K5RACTU	0603
21	1	C65	0.01uF	CAP, CERM, 0.01 µF, 25 V, +/- 10%, X7R, 0402	TDK	C1005X7R1E103K	0402
22	3	C72, C86, C95	2.2uF	CAP, CERM, 2.2 µF, 100 V, +/- 10%, X7R, 1210	MuRata	GRM32ER72A225KA35L	1210
23	6	C73, C77, C87, C91, C96, C100	1000pF	CAP, CERM, 1000 pF, 100 V, +/- 10%, X7R, 0805	TDK	C2012X7R2A102K	0805
24	1	D1	28V	Diode, TVS, Uni, 28 V, 600 W, SMB	Diodes Inc.	SMBJ28A-13-F	SMB
25	7	D2, D11, D14, D21, D24, D27, D30	14V	Diode, TVS, Uni, 14 V, 600 W, SMB	Diodes Inc.	SMBJ14A-13-F	SMB
26	1	D5	24V	Diode, TVS, Bi, 24 V, 350 W, SOT-23	ON Semiconductor	NUP2105LT1G	SOT-23
27	2	D6, D8	100V	Diode, Switching, 100 V, 0.2 A, SOD-123	ON Semiconductor	MMSD914T1G	SOD-123
28	1	D7	200V	Diode, Superfast Rectifier, 200 V, 1 A, SMB	Diodes Inc.	MURS120-13-F	SMB
29	12	D9, D10, D12, D13, D19, D20, D22, D23, D25, D26, D28, D29	100V	Diode, Schottky, 100 V, 1 A, PowerDI123	Diodes Inc.	DFLS1100-7	PowerDI123
30	4	D15, D16, D17, D18	0.44V	Diode, Schottky, 35V, 0.1A, 0603 Diode	Bourns	CD0603-B0130L	0603 Diode
31	3	GND_A1, GND_A2, GND_A3	Blue	Test Point, Miniature, Blue, TH	Keystone	5117	Blue Miniature Testpoint
32	9	GND_B1, GND_B2, GND_B3, GND_B4, GND_B5, GND_B6, GND_B7, GND_B8, GND_B9	Black	Test Point, Miniature, Black, TH	Keystone	5001	Black Miniature Testpoint
33	4	H1, H2, H3, H4		Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	B&F Fastener Supply	NY PMS 440 0025 PH	Screw
34	4	H5, H6, H7, H8		Standoff, Hex, 1"L #4-40 Nylon	Keystone	1902E	Standoff
35	2	J1, J2		Terminal Block, 4x1, 5.08mm, TH	Molex	39544-3004	4x1 Terminal Block

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36	1	J3		Header, 2.54 mm, 2x1, Gold, TH	Wurth Elektronik	61300211121	Header, 2.54mm, 2x1, TH
37	2	J4, J9		Header, 2.54 mm, 3x1, Gold, TH	Wurth Elektronik	61300311121	Header, 2.54mm, 3x1, TH
38	2	J5, J6		Connector, Receptacle, 100mil, 10x2, Gold plated, TH	Samtec	SSW-110-23-F-D	10x2 Receptacle
39	1	J7		Terminal Block, 6A, 3.5mm Pitch, 5-Pos, TH	On-Shore Technology	ED555/5DS	17.5x8.2x6.5mm
40	1	J8		Terminal Block, 10.16mm, 4x1, Tin, TH	TE Connectivity	282843-4	Terminal Block, 10.16mm, 4x1, TH
41	1	L1	4.7uH	Inductor, Shielded Drum Core, Superflux, 4.7 μ H, 6 A, 0.02 ohm, SMD	Wurth Elektronik	744311470	WE-HC4
42	1	L2		SMD High Current Inductor WE-HCF, L=4.7 μ H			
43	1	L3	2.2uH	Inductor, Shielded, Composite, 2.2 μ H, 3.7 A, 0.02 ohm, SMD	Coilcraft	XFL4020-222MEB	4x2x4mm
44	1	L4	51uH	Coupled inductor, 51 μ H, A, 0.25 ohm, +/- 30%, SMD	TDK	B82799S0513N001	4.5x3.2mm
45	2	LED1, LED3	Blue	LED, Blue, SMD	Rohm	SMLP12BC7TT86	Blue LED
46	3	LED2, LED4, LED5	Green	LED, Green, SMD	Wurth Elektronik	150060VS75000	LED_0603
47	1	Q1	60V	MOSFET, N-CH, 60 V, 19 A, SON 5x6mm	Texas Instruments	CSD18531Q5A	SON 5x6mm
48	2	Q2, Q10	100V	MOSFET, N-CH, 100 V, 200 A,	Texas Instruments	CSD19536KTT	
49	1	Q3	100V	MOSFET, N/P-CH, 100 V, 5.5 A, DPAK	Fairchild Semiconductor	FDD86113LZ	DPAK
50	6	Q4, Q5, Q6, Q7, Q8, Q9	100V	MOSFET, N-CH, 100 V, 197 A,	Texas Instruments	CSD19535KTT	
51	3	R1, R8, R100	2.80k	RES, 2.80 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW04022K80FKED	0402
52	5	R2, R16, R35, R47, R63	0	RES, 0, 5%, 0.125 W, 0805	Vishay-Dale	CRCW08050000Z0EA	0805
53	1	R4	49.9k	RES, 49.9 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080549K9FKEA	0805
54	1	R5	174k	RES, 174 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW0603174KFKEA	0603
55	13	R6, R12, R20, R24, R34, R43, R48, R56, R59, R83, R86, R92, R95	10.0k	RES, 10.0 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080510K0FKEA	0805

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56	20	R7, R54, R55, R57, R58, R60, R62, R81, R82, R84, R85, R87, R89, R90, R91, R93, R94, R96, R98, R99	10.0	RES, 10.0, 1%, 0.1 W, 0603	Vishay-Dale	CRCW060310R0FKEA	0603
57	2	R9, R13	270	RES, 270, 5%, 0.063 W, 0402	Vishay-Dale	CRCW0402270RJNED	0402
58	5	R10, R73, R75, R77, R79	100k	RES, 100 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW0402100KFKED	0402
59	1	R11	1.62k	RES, 1.62 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW04021K62FKED	0402
60	2	R15, R17	60.4	RES, 60.4, 1%, 1 W, 2512	Vishay-Dale	CRCW251260R4FKEG	2512
61	6	R19, R25, R26, R27, R31, R33	20.0k	RES, 20.0 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW060320K0FKEA	0603
62	12	R21, R45, R51, R52, R53, R101, R102, R103, R104, R105, R106, R107	49.9	RES, 49.9, 1%, 0.063 W, 0402	Vishay-Dale	CRCW040249R9FKED	0402
63	8	R22, R23, R28, R29, R30, R32, R39, R50	1.00k	RES, 1.00k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06031K00FKEA	0603
64	1	R38	4.7	RES, 4.7, 5%, 0.1 W, 0603	Vishay-Dale	CRCW06034R70JNEA	0603
65	1	R40	113k	RES, 113 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW0603113KFKEA	0603
66	1	R41	0.05	RES, 0.05, 1%, 0.5 W, 1206	Bourns	CRM1206-FZ-R050ELF	1206
67	1	R42	30.1k	RES, 30.1 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW060330K1FKEA	0603
68	1	R46	61.9k	RES, 61.9 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080561K9FKEA	0805
69	3	R61, R88, R97	0.001	RES, 0.001 ohm, 1%, 2W, 2512	Panasonic	CSNL2512FT1L00	2512
70	4	R74, R76, R78, R80	4.99k	RES, 4.99k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06034K99FKEA	0603
71	1	T1	39 uH	Transformer, 39 uH, SMT	Würth Elektronik	750315511	17.75x13.46mm
72	1	U1		Smart Diode Controller, DGK0008A	Texas Instruments	LM74610QDGKRQ1	DGK0008A
73	1	U2		High-Side Protection Controller with Low Quiescent Current, 10-pin MSOP, Pb-Free	Texas Instruments	LM5060Q1MMX/NOPB	MUB10A
74	1	U3		3 to 17-V 1-A Step-Down Converter in 3x3-mm QFN Package, RGT0016C	Texas Instruments	TPS62152QRGTRQ1	RGT0016C
75	1	U4		5-V CAN TRANSCEIVER WITH I/O LEVEL ADAPTING AND LOW-POWER-MODE SUPPLY OPTIMIZATION, D0008A	Texas Instruments	HVDA553QDRQ1	D0008A
76	1	U5		Robust EMC, Low Power, Triple-Channel Digital Isolators, DW0016B	Texas Instruments	ISO7331CDWR	DW0016B

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	PCB Footprint
77	1	U6		50-MHz Low-Distortion High-CMRR Rail-to-Rail I/O, Single-Supply Operational Amplifier, D0008A	Texas Instruments	OPA2365AQDRQ1	D0008A
78	2	U7, U16		Automotive Catalog, 50 MHz, Low-Noise, Single-Supply Rail-to-Rail Operational Amplifier, 2.2 to 5.5 V, -40 to 125 degC, 5-pin SOT23 (DBV0005A), Green (RoHS & no Sb/Br)	Texas Instruments	OPA365AQDBVRQ1	DBV0005A
79	1	U8		4.5-V TO 52-V INPUT CURRENT MODE BOOST CONTROLLER, DGQ0010D	Texas Instruments	TPS40210QDQGRQ1	DGQ0010D
80	3	U10, U12, U13		120-V, 3-A Peak, High-Frequency, High-Side/Low-Side Driver, DDA0008G	Texas Instruments	UCC27201AQDDARQ1	DDA0008G
81	3	U11, U14, U15		SC70 Analog Temperature Sensor with Class-AB Output, DCK0005A	Texas Instruments	LMT86QDCKRQ1	DCK0005A
82	0	C6	220uF	CAP, AL, 220 µF, 100 V, +/- 20%, 0.153 ohm, SMD	Panasonic	EEV-FK2A221M	SMT Radial K16
83	0	C19	0.068uF	CAP, CERM, 0.068 µF, 100 V, +/- 10%, X7R, 0805	Kemet	C0805C683K1RACTU	0805
84	0	C58, C66	0.1uF	CAP, CERM, 0.1 µF, 100 V, +/- 10%, X7R, 0805	TDK	C2012X7R2A104K	0805
85	0	D4	24V	Diode, TVS, Bi, 24 V, 350 W, SOT-23	ON Semiconductor	NUP2105LT1G	SOT-23
86	0	FID1, FID2, FID3		Fiducial mark. There is nothing to buy or mount.	N/A	N/A	Fiducial
87	0	R3, R49	10.0k	RES, 10.0 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080510K0FKEA	0805
88	0	R14, R18	0	RES, 0, 5%, 0.125 W, 0805	Vishay-Dale	CRCW08050000Z0EA	0805
89	0	R36, R37, R44	10k	RES, 10 k, 5%, 0.125 W, 0805	Vishay-Dale	CRCW080510K0JNEA	0805
90	0	R64, R65, R66, R67, R68, R69, R70, R71, R72	1.00k	RES, 1.00k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06031K00FKEA	0603

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