

TIDA-010208 REV E1 Bill of Materials

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
PCB1	1		TIDA-010208	Any	Printed Circuit Board	
C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C20, C21, C22	17	0.22uF	GCM188R71H224KA64D	MuRata	CAP, CERM, 0.22 μ F, 50 V,+/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C15	1	2.2uF	CL31B225KCHSNE	Samsung Electro-Mechanics	CAP, CERM, 2.2 μ F, 100 V,+/- 10%, X7R, 1206	1206
C16, C17, C23, C24, C33	5	100pF	GRM1885C2A101JA01D	MuRata	CAP, CERM, 100 pF, 100 V,+/- 5%, C0G/NP0, 0603	0603
C18	1	1uF	C1608X7R1E105K080AB	TDK	CAP, CERM, 1 μ F, 25 V,+/- 10%, X7R, 0603	0603
C19, C37	2	2.2uF	EMK107BB7225MA-T	Taiyo Yuden	CAP, CERM, 2.2 μ F, 16 V,+/- 10%, X7R, 0603	0603
C25, C26	2	1uF	GCM188R71C105KA64D	MuRata	CAP, CERM, 1 μ F, 16 V,+/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C27	1	0.022uF	GRM188R71H223KA01D	MuRata	CAP, CERM, 0.022 μ F, 50 V,+/- 10%, X7R, 0603	0603
C28, C30, C31, C34, C35, C40	6	470pF	GRM188R71H471KA01D	MuRata	CAP, CERM, 470 pF, 50 V,+/- 10%, X7R, 0603	0603
C29	1	1uF	C3216X7R2A105K160AA	TDK	CAP, CERM, 1 μ F, 100 V,+/- 10%, X7R, 1206	1206
C32, C38, C41, C42, C43	5	0.1uF	GRM188R71H104KA93D	MuRata	CAP, CERM, 0.1 μ F, 50 V,+/- 10%, X7R, 0603	0603
C36	1	10uF	CL21B106KOQNNNE	Samsung Electro-Mechanics	CAP, CERM, 10 μ F, 16 V,+/- 10%, X7R, 0805	0805
C39	1	1000pF	GRM1885C1H102JA01D	MuRata	CAP, CERM, 1000 pF, 50 V,+/- 5%, C0G/NP0, 0603	0603
C44, C45	2	4.7uF	C3225X7S2A475K200AE	TDK	CAP, CERM, 4.7 μ F, 100 V,+/- 10%, X7S, 1210	1210
C46, C55, C56, C57, C58, C59, C60	7	0.1uF	GRM188R72A104KA35D	MuRata	CAP, CERM, 0.1 μ F, 100 V,+/- 10%, X7R, 0603	0603
C47	1	10uF	UUX2A100MNL1GS	Nichicon	CAP, AL, 10 μ F, 100 V, +/- 20%, SMD	D8xL6.2mm
C48	1	56pF	GRM1885C1H560JA01D	MuRata	CAP, CERM, 56 pF, 50 V,+/- 5%, C0G/NP0, 0603	0603
C49	1	2200pF	GRM155R71H222KA01D	MuRata	CAP, CERM, 2200 pF, 50 V,+/- 10%, X7R, 0402	0402
C50	1	100pF	GRM1885C1H101JA01D	MuRata	CAP, CERM, 100 pF, 50 V,+/- 5%, C0G/NP0, 0603	0603
C51	1	1500pF	GRM155R71H152KA01D	MuRata	CAP, CERM, 1500 pF, 50 V,+/- 10%, X7R, 0402	0402
C52, C53, C54	3	4.7uF	GRM21BR71C475KA73L	MuRata	CAP, CERM, 4.7 μ F, 16 V,+/- 10%, X7R, 0805	0805
D1, D2, D3, D4, D5, D6, D7, D8, D12, D13, D14, D15, D16, D17, D18, D19	16	5.6V	BZT52C5V6T-7	Diodes Inc.	Diode, Zener, 5.6 V, 300 mW, SOD-523	SOD-523
D9	1	30V	BAT42WS-7-F	Diodes Inc.	Diode, Schottky, 30 V, 0.2 A, SOD-323	SOD-323
D10, D21, D22	3	3.6V	MMSZ4685T1G	ON Semiconductor	Diode, Zener, 3.6 V, 500 mW, SOD-123	SOD-123
D11, D20, D30, D37	4	100V	BAS516,115	Nexperia	Diode, Switching, 100 V, 0.25 A, SOD-523	SOD-523
D23, D24	2	Red	150060RS75000	Würth Elektronik	LED, Red, SMD	LED_0603
D25	1		150060RS75000	Würth Elektronik	LED, Red, SMD	LED_0603
D26	1	5.6V	MMSZ4690T1G	ON Semiconductor	Diode, Zener, 5.6 V, 500 mW, SOD-123	SOD-123

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
D27	1	24V	NUP3105LT1G	ON Semiconductor	Diode, TVS, Bi, 24 V, SOT-23	SOT-23
D28, D29	2	20V	PMEG2010AEH,115	Nexperia	Diode, Schottky, 20 V, 1 A, SOD-123F	SOD-123F
D31	1	60V	SMBJ60A-13-F	Diodes Inc.	Diode, TVS, Uni, 60 V, 96.8 Vc, SMB	SMB
D32, D34, D39, D40	4	16V	MMSZ5246B-7-F	Diodes Inc.	Diode, Zener, 16 V, 500 mW, SOD-123	SOD-123
D33, D41, D43	3	75V	MMSZ5267BT1G	ON Semiconductor	Diode, Zener, 75V, 500 mW, AEC-Q101, SOD-123	SOD-123
D35	1	NC	MMSZ5263BT1G	ON Semiconductor	Diode, Zener, 75V, 500 mW, AEC-Q101, SOD-123	SOD-123
D36, D42, D44, D45, D46	5	100V	BAT46W-7-F	Diodes Inc.	Diode, Schottky, 100 V, 0.15 A, SOD-123	SOD-123
D38	1	5.1V	BZT52C5V1S-7-F	Diodes Inc.	Diode, Zener, 5.1 V, 200 mW, SOD-323	SOD-323
D47	1	200V	ES3D-E3/57T	Vishay-Semiconductor	Diode, Ultrafast, 200 V, 3 A, SMC	SMC
F1	1		NC	POLYTRONICS	NC	9.5x2x5mm
F2	1		0678L9300-02	Bel Fuse	Fuse, 30 A, 250 VAC, 72 VDC, SMD	9.8x3.05mm
L1	1	1uH	74438335010	Würth Elektronik	Inductor, Shielded, 1 µH, 2.7 A, 0.039 ohm, SMD	3x3mm
L2	1	68uH	744777168	Würth Elektronik	Inductor, Shielded Drum Core, Metal Composite, 68 µH, 0.87 A, 0.239 ohm, SMD	SMD
L3, L4, L5, L6, L7, L8	6	600 ohm	74279265	Würth Elektronik	Ferrite Bead, 600 ohm @ 100 MHz, 0.2 A, 0603	0603
P1	1				Header, 4-Pin	
P2	1				Header, 2-Pin, Dual row	
P3	1				Header, 17-Pin	
P4	1				Header, 2-Pin	
Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16	16	20V	DMG2302UK-7	Diodes Inc.	MOSFET, N-CH, 20 V, 2.8 A, AEC-Q101, SOT-23	SOT-23
Q17	1	-100V	ZXMP10A13FTA	Diodes Inc.	MOSFET, P-CH, -100 V, -0.6 A, SOT-23	SOT-23
Q18	1	100V	BSS123	Fairchild Semiconductor	MOSFET, N-CH, 100 V, 0.17 A, SOT-23	SOT-23
Q19	1	100 V	ZXTN25100BFHTA	Diodes Inc.	Transistor, NPN, 100 V, 3 A, AEC-Q101, SOT-23	SOT-23
Q20	1	100V	DMN10H220L-7	Diodes Inc.	MOSFET, N-CH, 100 V, 1.4 A, SOT-23	SOT-23
Q21, Q22, Q23, Q25, Q26, Q27	6	100V	CSD19536KTT	Texas Instruments	MOSFET, N-CH, 100 V, 200 A, KTT0002A (TO-263-2)	KTT0002A
Q24	1	-80V	FDC3535	Fairchild Semiconductor	MOSFET, P-CH, -80 V, -2.1 A, SSOT-6	SSOT-6
Q28	1	-20V	DMG1013UW-7	Diodes Inc.	MOSFET, P-CH, -20 V, -0.82 A, SOT-323	SOT-323
Q29	1	60V	2N7002W-7-F	Diodes Inc.	MOSFET, N-CH, 60 V, 0.115 A, SOT-323	SOT-323
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R72, R73, R74, R75, R76, R77	32	80.6	CRCW120680R6FKEA	Vishay-Dale	RES, 80.6, 1%, 0.25 W, 1206	1206

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R17, R19, R21, R23, R25, R27, R29, R31, R33, R52, R54, R56, R58, R60, R61, R79, R81, R83, R87, R88, R93, R95, R96, R97, R98, R105, R106, R107, R115, R130	30	100	CRCW0603100RFKEA	Vishay-Dale	RES, 100, 1%, 0.1 W, 0603	0603
R18, R20, R22, R24, R26, R28, R30, R32, R51, R53, R55, R57, R59, R78, R80, R82, R84, R89, R90, R102, R103, R136	22	10k	CRCW060310K0JNEA	Vishay-Dale	RES, 10 k, 5%, 0.1 W, 0603	0603
R34, R46, R47, R71, R117	5	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, 0402	0402
R35, R48, R49, R50, R62, R63, R64, R65, R66, R67, R68, R69, R70, R111	14	0	CRCW06030000Z0EA	Vishay-Dale	RES, 0, 5%, 0.1 W, 0603	0603
R85	1	13.3k	RT0603DRE0713K3L	Yageo America	RES, 13.3 k, 0.5%, 0.1 W, 0603	0603
R86	1	665k	RT0603DRE07665KL	Yageo America	RES, 665 k, 0.5%, 0.1 W, 0603	0603
R91	1	3.3Meg	CRCW06033M30JNEA	Vishay-Dale	RES, 3.3 M, 5%, 0.1 W, 0603	0603
R92, R126	2	1.0Meg	CRCW06031M00JNEA	Vishay-Dale	RES, 1.0 M, 5%, 0.1 W, 0603	0603
R94	1	249	RC0603FR-07249RL	Yageo America	RES, 249, 1%, 0.1 W, 0603	0603
R99, R100, R101	3	470	RC0603FR-07470RL	Yageo America	RES, 470, 1%, 0.1 W, 0603	0603
R104	1	47.0k	RC0603FR-0747KL	Yageo America	RES, 47.0 k, 1%, 0.1 W, 0603	0603
R108	1	10.0k	CRCW060310K0FKEA	Vishay-Dale	RES, 10.0 k, 1%, 0.1 W, 0603	0603
R109, R110	2	60.4	RC0603FR-0760R4L	Yageo America	RES, 60.4, 1%, 0.1 W, 0603	0603
R112, R113	2	0.002	CSNL2512FT2L00	Stackpole Electronics Inc	RES, 0.002, 1%, 2 W, 2512	2512
R114, R139	2	5.1k	CRCW06035K10JNEA	Vishay-Dale	RES, 5.1 k, 5%, 0.1 W, 0603	0603
R116	1	82.5k	CRCW060382K5FKEA	Vishay-Dale	RES, 82.5 k, 1%, 0.1 W, 0603	0603
R118	1	499k	RC0603FR-07499KL	Yageo America	RES, 499 k, 1%, 0.1 W, 0603	0603
R119	1	523k	RC0402FR-07523KL	Yageo	RES, 523 k, 1%, 0.063 W, 0402	0402
R120	1	63.4k	CRCW060363K4FKEA	Vishay-Dale	RES, 63.4 k, 1%, 0.1 W, 0603	0603
R121	1	200k	CRCW0603200KFKEA	Vishay-Dale	RES, 200 k, 1%, 0.1 W, 0603	0603
R122	1	200	CRCW0603200RFKEA	Vishay-Dale	RES, 200, 1%, 0.1 W, 0603	0603
R123	1	499	ERJ-8ENF4990V	Panasonic	RES, 499, 1%, 0.25 W, 1206	1206
R124, R131, R137	3	10Meg	CRCW060310M0JNEA	Vishay-Dale	RES, 10 M, 5%, 0.1 W, 0603	0603
R125, R138, R140	3	49.9k	RT0603BRD0749K9L	Yageo America	RES, 49.9 k, 0.1%, 0.1 W, 0603	0603

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R127, R128	2	510	RC2512JK-07510RL	Yageo	RES SMD 510 OHM 5% 1W 2512	2512
R129	1	56k	RC0805JR-0756KL	Yageo	RES, 56 k, 5%, 0.125 W, 0805	0805
R132, R133, R134	3	511	CRCW0805511RFKEA	Vishay-Dale	RES, 511, 1%, 0.125 W, 0805	0805
R135	1	511	CRCW0603511RFKEA	Vishay-Dale	RES, 511, 1%, 0.1 W, 0603	0603
R141, R142	2	20k	CRCW060320K0JNEA	Vishay-Dale	RES, 20 k, 5%, 0.1 W, 0603	0603
RT1, RT2, RT3, RT4	4	10.0k ohm	MF51E103F3950	Cantherm	Thermistor NTC, 10.0k ohm, 1%, Disc, 5x8.4 mm	Disc, 5x8.4 mm
RT5	1		TMP6131DECR	Texas Instruments	Thermistor, DEC0002A (X1SON-2)	DEC0002A
S1, S2	2		RS-032G05A3-SM RT	C&K Components	Switch, Tactile, SPST-NO, 0.05A, 12V, SMD	SPST, 6x3.5mm
U1	1		bq76952PFBR	Texas Instruments	Multicell Battery Monitor and Protection Family, PFB0048A (TQFP-48)	PFB0048A
U2	1		TLV70433DBVT	Texas Instruments	Single Output LDO, 150 mA, Fixed 3.3 V Output, 2.5 to 24 V Input, with Ultra-Low IQ, 5-pin SOT-23 (DBV), -40 to 125 degC, Green (RoHS & no Sb/Br)	DBV0005A
U3	1		MSP430FR2155TDBTR	Texas Instruments	24MHz 105C ULP Microcontroller With 32 KB FRAM, 4 KB SRAM, 44 IO, 12-bit ADC, DBT0038A (TSSOP-38)	DBT0038A
U4	1		TCAN1044VDDFR	Texas Instruments	Automotive High Speed CAN Transceiver	SOT23-8
U5	1		LM5163DDAR	Texas Instruments	100-V Input, 0.5-A Synchronous Buck DC/DC Converter with Ultra-low IQ, DDA0008E (HSOIC-8)	DDA0008E

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale (<https://www.ti.com/legal/termsofsale.html>) or other applicable terms available either on [ti.com](https://www.ti.com) or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2021, Texas Instruments Incorporated