

## TIDA-050040\_02B REV E2 Bill of Materials

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
IPCBB	1		TIDA-050040_02B	Any	Printed Circuit Board	
C1, C18	2	470pF	GRM1885C2A471JA01D	MuRata	CAP, CERM, 470 pF, 100 V, +/- 5%, C0G/NP0, 0603	0603
C2, C10, C19, C28, C29, C35, C36	7	0.01uF	CGA3E2X7R2A103K080AA	TDK	CAP, CERM, 0.01 uF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C3, C9, C20, C27, C33	5	0.1uF	GRM188R72A104KA35D	MuRata	CAP, CERM, 0.1 uF, 100 V, +/- 10%, X7R, 0603	0603
C4, C21, C22, C23, C25, C26	6	10uF	C3225X7R1H106M250AC	TDK	CAP, CERM, 10 uF, 50 V, +/- 20%, X7R, 1210	1210
C5, C6, C7, C8, C30	5	4.7uF	C3225X7S2A475K200AB	TDK	CAP, CERM, 4.7 uF, 100 V, +/- 10%, X7S, 1210	1210
C11	1	33uF	EEE-FK1K330P	Panasonic	CAP, AL, 33 uF, 80 V, +/- 20%, 1.3 ohm, AEC-Q200 Grade 2, SMD	SMT Radial F
C12, C13, C34, C37	4	1000pF	GRM188R71H102KA01D	MuRata	CAP, CERM, 1000 pF, 50 V, +/- 10%, X7R, 0603	0603
C14	1	0.047uF	GRM188R71E473KA01D	MuRata	CAP, CERM, 0.047 uF, 25 V, +/- 10%, X7R, 0603	0603
C15, C40	2	100pF	885012006057	Wurth Elektronik	CAP, CERM, 100 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
C16	1	1uF	CL31B105KCHNNNE	Samsung	CAP, CERM, 1 uF, 100 V, +/- 10%, X7R, 1206	1206
C17, C24, C31, C32, C42, C45, C49, C57, C65, C66, C74, C85, C87, C88	14	3300pF	GCM188R72A332KA37D	MuRata	CAP, CERM, 3300 pF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C38, C39	2	2.2uF	GRM188Z71C225KE43	MuRata	CAP, CERM, 2.2 uF, 16 V, +/- 10%, X7R, 0603	0603
C41, C46, C63	3	0.1uF	CGA3E3X7S2A104K080AB	TDK	CAP, CERM, 0.1 uF, 100 V, +/- 10%, X7S, AEC-Q200 Grade 1, 0603	0603
C43, C47	2	2.2uF	CGA5L3X7S2A225M160AB	TDK	CAP, CERM, 2.2 uF, 100 V, +/- 20%, X7S, AEC-Q200 Grade 1, 1206_190	1206_190
C44, C64	2	0.22uF	CGA4F3X7S2A224M085AE	TDK	CAP, CERM, 0.22 uF, 100 V, +/- 10%, X7S, AEC-Q200 Grade 1, 0805	0805
C48, C62	2	2200pF	GRM188R71C222KA01D	MuRata	CAP, CERM, 2200 pF, 16 V, +/- 10%, X7R, 0603	0603
C50, C60	2	0.1uF	CGA3E2X7R1E104K080AA	TDK	CAP, CERM, 0.1 uF, 25 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C51, C61	2	1000pF	GRM188R72A102KA01D	MuRata	CAP, CERM, 1000 pF, 100 V, +/- 10%, X7R, 0603	0603
C52, C59	2	1.5uF	CGA6M3X7R2A155K200AB	TDK	CAP, CERM, 1.5 uF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1210	1210
C53, C55	2	1uF	GCM188R71C105KA64D	MuRata	CAP, CERM, 1 uF, 16 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C54, C56, C58	3	0.1uF	CL10B104KO8WPNC	Samsung Electro-Mechanics	CAP, CERM, 0.1 uF, 16 V, +/- 10%, X7R, 0603	0603
C67, C71, C72, C75, C80	5	0.1uF	C0805C104K5RACAUTO	Kemet	CAP, CERM, 0.1 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 0, 0805	0805
C68	1	0.01uF	GCM188R71H103KA37D	MuRata	CAP, CERM, 0.01 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C69, C70, C76, C77, C78, C79	6	4.7uF	C3216X7R1H475K160AC	TDK	CAP, CERM, 4.7 uF, 50 V, +/- 10%, X7R, 1206	1206
C73	1	100uF	EEE-FK1H101P	Panasonic	CAP, AL, 100 uF, 50 V, +/- 20%, 0.34 ohm, AEC-Q200 Grade 2, SMD	SMT Radial F
C81	1	220pF	GCM1885C2A221JA16D	MuRata	CAP, CERM, 220 pF, 100 V, +/- 5%, C0G/NP0, AEC-Q200 Grade 1, 0603	0603
C82, C83	2	15pF	GCM1885C2A150JA16D	MuRata	CAP, CERM, 15 pF, 100 V, +/- 5%, C0G/NP0, AEC-Q200 Grade 1, 0603	0603
C86, C133, C134	3	0.01uF	GRM188R72A103KA01D	MuRata	CAP, CERM, 0.01 uF, 100 V, +/- 10%, X7R, 0603	0603

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C89, C90, C94, C95, C97, C98, C100, C101, C110	9	10uF	GRM31CR71E106KA12L	MuRata	CAP, CERM, 10 uF, 25 V, +/- 10%, X7R, 1206	1206
C91	1	0.1uF	GRM188R71C104KA01D	MuRata	CAP, CERM, 0.1 uF, 16 V, +/- 10%, X7R, 0603	0603
C92	1	1uF	CGA4J3X7S2A105K125AB	TDK	CAP, CERM, 1 uF, 100 V, +/- 10%, X7S, AEC-Q200 Grade 1, 0805	0805
C93	1	0.1uF	CGA4J2X7R2A104K125AA	TDK	CAP, CERM, 0.1 uF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0805	0805
C96	1	100uF	EEF1P1C101AP	Panasonic	CAP, AL, 100 uF, 16 V, +/- 20%, 0.26 ohm, AEC-Q200 Grade 2, SMD	SMT Radial D
C99	1	1uF	GRM188R71E105KA12D	MuRata	CAP, CERM, 1 uF, 25 V, +/- 10%, X7R, 0603	0603
C102	1	5pF	GRM1555C2A5R0CA01D	MuRata	CAP, CERM, 5 pF, 100 V, +/- 5%, C0G/NP0, 0402	0402
C103	1	0.022uF	CGA3E2X7R2A223K080AA	TDK	CAP, CERM, 0.022 uF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C104	1	3900pF	GRM188R71H392KA01D	MuRata	CAP, CERM, 3900 pF, 50 V, +/- 10%, X7R, 0603	0603
C105, C106, C107, C108, C109, C113, C115, C119	8	0.1uF	GRM155R71C104KA88D	MuRata	CAP, CERM, 0.1 uF, 16 V, +/- 10%, X7R, 0402	0402
C111	1	2.2uF	GRM188R61C225KE15D	MuRata	CAP, CERM, 2.2 uF, 16 V, +/- 10%, X5R, 0603	0603
C112	1	1uF	GRM155R61A105KE15D	MuRata	CAP, CERM, 1 uF, 10 V, +/- 10%, X5R, 0402	0402
C114	1	2.2uF	GRM31CR71H225KA88L	MuRata	CAP, CERM, 2.2 uF, 50 V, +/- 10%, X7R, 1206	1206
C116, C117, C118, C124, C125, C126, C127, C128, C129, C130, C131, C132	12	330pF	C0603C331K5RACTU	Kemet	CAP, CERM, 330 pF, 50 V, +/- 10%, X7R, 0603	0603
C120, C121, C122, C123	4	12pF	GRM1555C1H120JA01D	MuRata	CAP, CERM, 12 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
D1, D2	2	100V	PDS3100Q-13	Diodes Inc.	Diode, Schottky, 100 V, 3 A, AEC-Q101, PowerDI5	PowerDI5
D3, D4	2	100V	BAS16D-E3-08	Vishay-Semiconductor	Diode, Switching, 100 V, 0.25 A, AEC-Q101, SOD-123	SOD-123
D5	1	28V	SZ1SMA28CAT3G	Littelfuse	Diode, TVS, Bi, 28 V, 45.4 Vc, 400 W, 8.8 A, AEC-Q101, SMA (non-polarized)	SMA (non-polarized)
D6, D7, D13, D14	4	100V	1N4148WQ-7-F	Diodes Inc.	Diode, Switching, 100 V, 0.3 A, AEC-Q101, SOD-123	SOD-123
D8, D9, D15, D16	4	3V	MMSZ4683-E3-08	Vishay-Semiconductor	Diode, Zener, 3 V, 500 mW, SOD-123	SOD-123
D10	1	Green	LG R971-KN-1	OSRAM	LED, Green, SMD	2x1.25mm
D11	1	60V	SS26SHE3_A/H	Vishay-Semiconductor	Diode, Schottky, 60 V, 2 A, AEC-Q101, SMA	SMA
D12, D18, D19, D20	4	30V	FSV530AF	Fairchild Semiconductor	Diode, Schottky, 30 V, 5 A, AEC-Q101, SMAF	SMAF
D17	1	10V	MMSZ4697-HE3-08	Vishay-Semiconductor	Diode, Zener, 10 V, 500 mW, AEC-Q101, SOD-123	SOD-123
D21	1	100V	MMSD4148T1G	ON Semiconductor	Diode, Switching, 100 V, 0.2 A, SOD-123	SOD-123
J3	1		FTSH-105-01-F-DV	Samtec	Header, 1.27mm, 5x2, Gold, Black, SMT	Header, 1.27mm, 5x2, SMT
L1	1	22uH	SPM12565VT-220M-D	TDK	Inductor, Shielded, 22 uH, 6.9 A, 0.0341 ohm, AEC-Q200 Grade 0, SMD	13x12.5mm
L2, L5, L6, L8, L9	5	33 ohm	742792012	Würth Elektronik	Ferrite Bead, 33 ohm @ 100 MHz, 4 A, 0805	0805
L3	1	33uH	MSD1278-333ML	Coilcraft	Coupled inductor, 33 uH, 5.6 A, 0.15 ohm, TH	12.3x12.3mm
L4, L7	2	68uH	SPM6545VT-680M-D	TDK	Inductor, Shielded, Metal Composite, 68 uH, 1.8 A, 0.316 ohm, SMD	SMD
L10	1	3.3uH	XAL6030-332MEB	Coilcraft	Inductor, Shielded, Composite, 3.3 uH, 8 A, 0.02081 ohm, AEC-Q200 Grade 1, SMD	IND_6.4x3.1x6.6
L20	1	2.2uH	LPS3010-222MLB	Coilcraft	Inductor, Shielded Drum Core, Ferrite, 2.2 uH, 1.1 A, 0.22 ohm, SMD	LPS3010
L21	1	15uH	XAL4040-153MEB	Coilcraft	Inductor, Shielded, Composite, 15 uH, 2.8 A, 0.109 ohm, SMD	4.0x4.1x4.0mm
L22	1	220 ohm	BLM21PG221SN1D	MuRata	Ferrite Bead, 220 ohm @ 100 MHz, 2 A, 0805	0805
L23	1	60 ohm	BKP2125HS600-T	Taiyo Yuden	Ferrite Bead, 60 ohm @ 100 MHz, 3 A, 0805	0805
Q1, Q3	2	80V	SQJA94EP-T1_GE3	Vishay-Siliconix	MOSFET, N-CH, 80 V, 60 A, AEC-Q101, PowerPAK_SO-8L	PowerPAK_SO-8L

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
Q4	1	-20V	SI2323DS	Vishay-Siliconix	MOSFET, P-CH, -20 V, -3.7 A, SOT-23	SOT-23
Q5	1	40 V	MMBT3904LT1G	ON Semiconductor	Transistor, NPN, 40 V, 0.2 A, SOT-23	SOT-23
Q6	1	-30V	SI7617DN-T1-GE3	Vishay-Siliconix	MOSFET, P-CH, -30 V, -13.9 A, PowerPAK 1212	PowerPAK 1212
Q7, Q8, Q10	3		BSS123-7-F	Diodes Incorporated	MOSFET N-CH 100V 170MA SOT23-3	SOT23
Q9	1	40V	SQS840EN-T1-GE3	Vishay-Siliconix	MOSFET, N-CH, 40 V, 12 A, AEC-Q101, PowerPAK 1212	PowerPAK 1212
R1, R18	2	7.5	CRCW20107R50JNEF	Vishay-Dale	RES, 7.5, 5%, 0.75 W, AEC-Q200 Grade 0, 2010	2010
R2, R14, R25, R89, R91, R92, R94, R96	8	0	CRCW06030000Z0EA	Vishay-Dale	RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R3, R24, R58, R60, R116, R118, R121	7	100k	CRCW0603100KFKEA	Vishay-Dale	RES, 100 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R4, R30	2	100	CRCW0603100RFKEA	Vishay-Dale	RES, 100, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R5, R8, R21, R38, R40	5	200k	CRCW0603200KFKEA	Vishay-Dale	RES, 200 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R6, R9, R32	3	0.04	CSRN2010FK40L0	Stackpole Electronics Inc	RES, 0.04, 1%, 1 W, 2010	2010
R7, R13, R16, R17, R20, R46, R48, R50, R99, R102, R103, R105	12	10.0k	RMCF0603FT10K0	Stackpole Electronics Inc	RES, 10.0 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R10	1	4.12k	CRCW06034K12FKEA	Vishay-Dale	RES, 4.12 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R11	1	1.00	CRCW08051R00FKEA	Vishay-Dale	RES, 1.00, 1%, 0.125 W, AEC-Q200 Grade 0, 0805	0805
R12	1	14.7k	ERJ-3EKF1472V	Panasonic	RES, 14.7 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R15, R28, R90, R107	4	10.0Meg	CRCW060310M0FKEA	Vishay-Dale	RES, 10.0 M, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R19	1	0.165	PT1206FR-070R165L	Yageo America	RES, 0.165, 1%, 0.25 W, 1206	1206
R22	1	402k	CRCW0603402KFKEA	Vishay-Dale	RES, 402 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R23, R39, R41, R44, R54, R55, R56, R57, R59, R61, R62, R66, R72, R77, R111, R112, R113, R114, R115, R117, R120, R123, R124, R125, R126, R128, R129, R130, R131, R135, R136, R140, R141	33	10.0k	CRCW060310K0FKEA	Vishay-Dale	RES, 10.0 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R26, R27, R63, R64, R65, R100, R144	7	10.0	CRCW060310R0FKEA	Vishay-Dale	RES, 10.0, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R29	1	9.09k	CRCW06039K09FKEA	Vishay-Dale	RES, 9.09 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R31	1	130k	CRCW0603130KFKEA	Vishay-Dale	RES, 130 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R33	1	47.5	CRCW060347R5FKEA	Vishay-Dale	RES, 47.5, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R34, R49	2	15.8k	CRCW060315K8FKEA	Vishay-Dale	RES, 15.8 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R35, R52	2	0.1	ERJ-L14KF10CU	Panasonic	RES, 0.1, 1%, 0.33 W, AEC-Q200 Grade 1, 1210	1210

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R36, R43, R51, R108, R109, R110, R122, R127, R132, R133, R134, R137, R138, R139, R142, R143	16	1.00k	CRCW06031K00FKEA	Vishay-Dale	RES, 1.00 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R37, R53	2	30.1k	CRCW060330K1FKEA	Vishay-Dale	RES, 30.1 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R42, R45	2	0	ERJ-3GEY0R00V	Panasonic	RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R47	1	24.9k	CRCW060324K9FKEA	Vishay-Dale	RES, 24.9 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R67, R70, R79	3	47.0k	RC0603FR-0747KL	Yageo	RES, 47.0 k, 1%, 0.1 W, 0603	0603
R68	1	402k	ERJ-3EKF4023V	Panasonic	RES, 402 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R69	1	31.6k	RC0603FR-0731K6L	Yageo	RES, 31.6 k, 1%, 0.1 W, 0603	0603
R71	1	680	RC0603FR-07680RL	Yageo	RES, 680, 1%, 0.1 W, 0603	0603
R73	1	4.7	CRCW06034R70JNEA	Vishay-Dale	RES, 4.7, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R74	1	133k	CRCW0603133KFKEA	Vishay-Dale	RES, 133 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R75	1	52.3k	CRCW060352K3FKEA	Vishay-Dale	RES, 52.3 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R76	1	95.3k	CRCW060395K3FKEA	Vishay-Dale	RES, 95.3 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R78	1	71.5k	CRCW060371K5FKEA	Vishay-Dale	RES, 71.5 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R80	1	100	RMCF0402JT100R	Stackpole Electronics Inc	RES, 100, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R81, R82, R83, R84	4	10.0k	RMCF0402FT10K0	Stackpole Electronics Inc	RES, 10.0 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R85, R86, R87, R88	4	33.0	RMCF0402FT33R0	Stackpole Electronics Inc	RES, 33.0, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R93	1	2.20k	RC0603FR-072K2L	Yageo	RES, 2.20 k, 1%, 0.1 W, 0603	0603
R95	1	51.0	RC0603FR-0751RL	Yageo	RES, 51.0, 1%, 0.1 W, 0603	0603
R97	1	1.00Meg	CRCW06031M00FKEA	Vishay-Dale	RES, 1.00 M, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R98, R119	2	10.0Meg	RC0603FR-0710ML	Yageo	RES, 10.0 M, 1%, 0.1 W, 0603	0603
R101	1	4.87k	CRCW06034K87FKEA	Vishay-Dale	RES, 4.87 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R104	1	0	RC0402JR-070RL	Yageo America	RES, 0, 5%, 0.063 W, 0402	0402
R106	1	2.0k	CRCW04022K00JNED	Vishay-Dale	RES, 2.0 k, 5%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
RT1	1	100k	NCP18WF104J03RB	MuRata	Thermistor NTC, 100k ohm, 5%, 0603	0603
TP1	1		5015	Keystone	Test Point, Miniature, SMT	Testpoint_Keystone_Miniature
TP3	1		1502-2	Keystone	Terminal, Turret, TH, Double	Keystone1502-2
U1	1		TPS92682QRHMQ1	Texas Instruments	Dual Channel Constant Voltage and Constant Current Controller with SPI Interface, RHM0032C (VQFN-32)	RHM0032C
U2	1		TPS92520QDAPRQ1	Texas Instruments	4.5 to 65-V Input Dual 1.6-A Synchronous Buck LED Driver with SPI Control, DAP0032A (HTSSOP-32)	DAP0032A
U3	1		TLIN1029DRQ1	Texas Instruments	Local Interconnect Network (LIN) Transceiver with Dominant State Timeout, D0008A (SOIC-8)	D0008A
U4	1		TPS57160QDQGQRQ1	Texas Instruments	Automotive 3.5V to 60V, 1.5A Step Down SWIFT(TM) Converter with Eco-Mode(TM), DGQ0010D (VSSOP-10)	DGQ0010D
U5	1		LM26420Q0XMHX/NOPB	Texas Instruments	Dual 2.0A, High Frequency Synchronous Step-Down DC-DC Regulator, PWP0020A (HTSSOP-20)	PWP0020A
U10	1		MSP432E401YTPDT	Texas Instruments	MSP432E401YTPDT, PDT0128A (TQFP-128)	PDT0128A
Y1	1		CMR200T-32.768KDZY-UT	Citizen FineDevice	Crystal, 32.768 kHz, SMD	D1.9xL6mm
Y2	1		NX3225GA-25.000M-STD-CRG-2	NDK	Crystal, 25 MHz, 8pF, SMD	3.2x0.75x2.5mm
FID1, FID2, FID3	0		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	N/A

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