

TIDA-010956 REV E1.1 Bill of Materials

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
!PCB1	1		TIDA-010956	Any	Printed Circuit Board	
C1, C3, C4, C5, C6, C8, C9, C13, C20, C28, C29, C39, C40, C42, C46, C47, C51, C52	18	0.1uF	8.85012E+11	Wurth Elektronik	CAP, CERM, 0.1 uF, 16 V, +/- 10%, X7R, 0402	402
C2, C7, C15	3	0.033uF	GRM155R71A333KA01D	MuRata	CAP, CERM, 0.033 uF, 10 V, +/- 10%, X7R, 0402	402
C10	1	4.7uF	CC0402MRX5R7BB475	Yageo America	CAP, CERM, 4.7 uF, 16 V,+/- 20%, X5R, 0402	402
C11	1		GRT32EC81C476KE13L	Murata	47uF ±10% 16V Ceramic Capacitor X6S 1210 (3225 Metric)	1210
C12	1	1uF	GRM155R61C105MA12D	MuRata	CAP, CERM, 1 uF, 16 V,+/- 20%, X5R, 0402	402
C14	1	1uF	8.85012E+11	Wurth Elektronik	CAP, CERM, 1 uF, 50 V, +/- 10%, X7R, 0805	805
C16	1	0.01uF	C0603C103K5RACTU	Kemet	CAP, CERM, 0.01 uF, 50 V, +/- 10%, X7R, 0603	603
C21, C22, C23, C24, C25, C26, C27	7	2200pF	GRM155R71C222KA01D	MuRata	CAP, CERM, 2200 pF, 16 V, +/- 10%, X7R, 0402	402
C30	1	22uF	EMK325B7226KMHP	Taiyo Yuden	22uF ±10% 16V Ceramic Capacitor X7R 1210 (3225 Metric)	1210
C31, C34, C58, C60, C74, C79, C83, C98, C104, C108, C124	11	0.1uF	GRM188R72A104KA35J	MuRata	CAP, CERM, 0.1 uF, 100 V, +/- 10%, X7R, 0603	603
C33	1	4.7uF	C3225X7S2A475K200AE	TDK	CAP, CERM, 4.7 uF, 100 V, +/- 10%, X7S, 1210	1210
C35, C41	2	10uF	8.85012E+11	Wurth Elektronik	CAP, CERM, 10 uF, 10 V, +/- 10%, X7R, 0805	805
C36, C37, C38	3	10uF	8.85012E+11	Wurth Electronics	10 uF ±10% 50V Ceramic Capacitor X7R 1210 (3225 Metric)	1210
C43, C48, C54, C69, C78, C93, C102, C103, C118	9		8.85012E+11	Wurth Elektronik	CAP, 0603, X7R, 1uF, 50VDC	
C44, C49	2	10uF	GRM21BZ71E106KE15L	MuRata	CAP, CERM, 10 uF, 25 V, +/- 10%, X7R, 0805	805
C45, C50	2	2200pF	GRM188R72A222KA01D	MuRata	CAP, CERM, 2200 pF, 100 V, +/- 10%, X7R, 0603	603
C53, C77, C101	3	2.2uF	GRM188C71E225KE11D	MuRata	CAP, CERM, 2.2 uF, 25 V,+/- 10%, X7S, 0603	603
C55, C56, C80, C81, C105, C106	6	47pF	8.85012E+11	Wurth Elektronik	CAP, CERM, 47 pF, 50 V, +/- 5%, C0G/NP0, 0402	402
C57, C59, C72, C73, C75, C76, C82, C84, C96, C97, C99, C100, C107, C109, C121, C122, C123, C125, C126, C127	20	2.2uF	GRM32ER72A225KA35L	MuRata	CAP, CERM, 2.2 uF, 100 V, +/- 10%, X7R, 1210	1210

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C62, C63, C70, C71, C86, C87, C94, C95, C111, C112, C119, C120	12	1000pF	GRM1885C1E102JA01D	MuRata	CAP, CERM, 1000 pF, 25 V, +/- 5%, C0G/NP0, 0603	603
C64, C65, C66, C67, C89, C90, C91, C92, C114, C115, C116, C117	12	100pF	CC0402KRX7R9BB101	Yageo America	CAP, CERM, 100 pF, 50 V, +/- 10%, X7R, 0402	402
D1	1	100V	ES1B-13-F	Diodes Inc.	Diode, Superfast Rectifier, 100 V, 1 A, SMA	SMA
D2, D3, D4, D5, D12	5	30V	BAT54C-7-F	Diodes Inc.	Diode, Schottky, 30 V, 0.2 A, SOT-23	SOT-23
D6, D7, D8	3	10V	DDZ10C-7	Diodes Inc.	Diode, Zener, 10 V, 500 mW, SOD-123	SOD-123
E1, E2	2	330uF	EKZE101ELL331MK35S	Chemi-Con	CAP, AL, 330 uF, 100 V, +/- 20%, TH	D12.5xL35mm
FID1, FID2, FID3, FID4, FID5, FID6	6		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	N/A
J1, J2	2		89898-310ALF	FCI	Receptacle, 2.54mm, 10x2, Gold, SMT	Receptacle, 2.54mm, 10x2, SMT
J3	1		6.91243E+11	Würth Elektronik	Terminal Block, 3.5mm Pitch, 4x1, TH	14x8.2x6.5mm
L1, L2, L3	3	300 ohm	74279272	Würth Elektronik	Ferrite Bead, 300 ohm @ 100 MHz, 0.2 A, 0402	402
L4	1	22uH	74437324220	Würth Elektronik	Inductor, Shielded Drum Core, Powdered Iron, 22 uH, 1 A, 0.47 ohm, SMD	4.45x1.8x4.06mm
L5	1	100 ohm	742792711	Würth Elektronik	Ferrite Bead, 100 ohm @ 100 MHz, 0.2 A, 0402	402
LBL1	1		THT-14-423-10	Brady	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650 x 0.200 inch
LED1, LED2, LED3, LED4	4	Green	150060GS75000	Würth Elektronik	LED, Green, SMD	LED_0603
Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12	12		NTMTSC1D6N10MCTXG	On Semi	MOSFET N-Channel 100 V 35A (Ta), 267A (Tc) 5.1W (Ta), 291W (Tc) Surface Mount, Wettable Flank 8-TDFNW (8.3x8.4)	DFNW8
R1	1	150k	RC0603FR-07150KL	Yageo	RES, 150 k, 1%, 0.1 W, 0603	603
R2, R3, R8, R21	4	110k	CRCW0402110KFKED	Vishay-Dale	RES, 110 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402
R4, R9	2	200μ	WSK1216L2000FEA	Vishay Dale	0.2 mOhms ±1% 3W Chip Resistor Wide 1612 (3831 Metric), 1216 Anti-Sulfur, Automotive AEC-Q200, Current Sense, Pulse Withstanding Metal Element	1612
R5, R6, R10, R23	4	4.70k	RC0402FR-074K7L	Yageo America	RES, 4.70 k, 1%, 0.0625 W, 0402	402
R7, R11, R19, R34, R38, R40, R83, R86, R98, R101, R111, R114, R130, R131, R132	15	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, 0402	402
R12, R13, R14, R15, R16, R17, R18	7	150	RC0603FR-07150RL	Yageo	RES, 150, 1%, 0.1 W, 0603	603
R22, R85, R100, R113	4	3.30k	RK73H1ETTP3301F	KOA Speer	RES, 3.30 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402

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R24, R44, R48, R52, R71, R72, R73, R75, R76, R77, R89, R102, R115, R117, R118, R119, R120, R121, R122, R123, R124, R125, R126, R127, R128, R129	26	10.0k	RK73H1ETTP1002F	KOA Speer	RES, 10.0 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402
R25	1	300μ	WSK1216L3000FEA	Vishay	0.3 mOhms ±1% 3W Chip Resistor Wide 1612 (3831 Metric), 1216 Anti-Sulfur, Automotive AEC-Q200, Current Sense, Pulse Withstanding Metal Element	1216
R26	1	49.9	RC0603FR-0749R9L	Yageo	RES, 49.9, 1%, 0.1 W, 0603	603
R27, R28	2	10	RC0402FR-0710RL	Yageo	Res General Purpose Thick Film 0402 10 Ohm 1% 1/16W ±200ppm/°C Molded SMD Paper T/R	402
R29, R42, R43, R49, R53, R54, R59, R60, R61, R62, R66, R68, R69	13	0	PMR03EZPJ000	Rohm	RES, 0, 0%, 0.25 W, AEC-Q200 Grade 0, 0603	603
R30, R31, R32, R33, R35, R36, R39, R41, R78, R79, R91, R93, R104, R106	14	24.9	RC0402FR-0724R9L	Yageo	24.9 Ohms ±1% 0.063W, 1/16W Chip Resistor 0402 (1005 Metric) Moisture Resistant Thick Film	402
R37	1	51	RC0603FR-0751RL	Yageo	RES, 51.0, 1%, 0.1 W, 0603	603
R45, R133	2	1.50k	RMCF0402FT1K50	Stackpole Electronics Inc	RES, 1.50 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402
R46	1	113k	ERJ-2RKF1133X	Panasonic	RES, 113 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0402	402
R47	1	25.5k	RC0603FR-0725K5L	Yageo	RES, 25.5 k, 1%, 0.1 W, 0603	603
R50, R57	2	2.26k	CRCW12102K26FKEA	Vishay Dale	RES, 2.26 k, 1%, 0.5 W, 1210	1210
R56, R64, R65, R70, R74	5	47.0k	RC0402FR-0747KL	Yageo America	RES, 47.0 k, 1%, 0.0625 W, 0402	402
R81, R82, R87, R88, R94, R95, R96, R97, R107, R108, R109, R110	12	3.01	RC0603FR-073R01L	Yageo	RES, 3.01, 1%, 0.1 W, 0603	603
R84, R99, R112	3	2.00k	RG1005P-202-B-T5	Susumu Co Ltd	RES, 2.00 k, 0.1%, 0.063 W, 0402	402
R134	1	62.0k	RC0603FR-0762KL	Yageo	RES, 62.0 k, 1%, 0.1 W, 0603	603
R135	1	30.0k	RC0603FR-0730KL	Yageo	RES, 30.0 k, 1%, 0.1 W, 0603	603
RT1	1	10k	TMP6131DYAR	Texas Instruments	±1% tolerance 10kΩ linear thermistor available in 0402 and 0603 package options 2-SOT-5X3 -40 to 125	SOD-523
TP10	1		5001	Keystone	Test Point, Miniature, Black, TH	Black Miniature Testpoint
U1, U3	2		INA241A3IDDF	Texas Instruments	-4-V to 110-V, Bidirectional, Ultra-Precise Current Sense Amplifier With Enhanced PWM Rejection	SOT23-8
U4	1		AMC0106DENR	Texas Instruments	±50 mV Input Functionally Isolated Delta-Sigma Modulator for Current Sensing, VSON8	VSON8

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
U5	1		TLV431BQDBZRQ1	Texas Instruments	Automotive Catalog Low-Voltage Adjustable Precision Shunt Regulator, 15 mA, -40 to 125 degC, 3-pin SOT-23 (DBZ), Green (RoHS & no Sb/Br)	DBZ0003A
U6	1		SN74LVC1G11DCKR	Texas Instruments	Single 3-Input Positive-AND Gate, DCK0006A (SOT-SC70-6)	DCK0006A
U7	1		LMR38010FDDAR	Texas Instruments	4.2-V to 80-V, 1-A Synchronous Buck Converter with 40-µA IQ	SO8_PowerPAD
U8	1		TPSM861253RDXR	Texas Instruments	3-V to 17-V Input, 1-A, Synchronous Buck Module, QFN-FCMOD7	QFN-FCMOD7
U9	1		TPS22948DCKT	Texas Instruments	0.3A, Current Limited Load Switch with Reverse Current Blocking, DCK0006A (SOT-SC70-6)	DCK0006A
U10, U11	2		ISOM8710DFF	Texas Instruments	3.75-kVRMS, High-Speed Single-Channel Opto-Emulator	SOIC5
U12, U14	2		TPS22810DRVVR	Texas Instruments	18V, 3A, 79mohm Load Switch with Adjustable Rise Time, Adj. Quick Output Discharge, & Thermal Shutdown, DRV0006A (WSON-6)	DRV0006A
U13, U15	2		TXU0304BQA	Texas Instruments	4-Bit Fixed Direction Voltage-Level Translator with Schmitt- Trigger Inputs, and Tri-State Outputs, WQFN14	WQFN14
U16, U17, U18	3		DRV8162DGSR	Texas Instruments	100-V Half-Bridge Smart Gate Driver with Integrated Protection and Current Sense Amplifier	VSSOP20
ZD1	1	5.1V	MMSZ4689T1G	ON Semiconductor	Diode, Zener, 5.1 V, 500 mW, SOD-123	SOD-123
ZD2	1	6.2V	MMSZ4691T1G	ON Semiconductor	Diode, Zener, 6.2 V, 500 mW, SOD-123	SOD-123
C17	0	33pF	C0603C330J5GACTU	Kemet	CAP, CERM, 33 pF, 50 V, +/- 5%, C0G/NP0, 0603	603
C18, C19	0	1000pF	C0603C102K5RACTU	Kemet	CAP, CERM, 1000 pF, 50 V, +/- 10%, X7R, 0603	603
C32	0	18pF	C1005C0G1H180J050BA	TDK	CAP, CERM, 18 pF, 50 V, +/- 5%, C0G/NP0, 0402	402
C61, C68, C85, C88, C110, C113	0	2200pF	GRM188R72A222KA01D	MuRata	CAP, CERM, 2200 pF, 100 V, +/- 10%, X7R, 0603	603
D9, D10, D11	0	100V	ES1B-13-F	Diodes Inc.	Diode, Superfast Rectifier, 100 V, 1 A, SMA	SMA
R20	0	2	RC0603FR-072RL	Yageo	RES, 2.00, 1%, 0.1 W, 0603	603
R51, R58	0	25.5k	RC0603FR-0725K5L	Yageo	RES, 25.5 k, 1%, 0.1 W, 0603	603
R55, R63, R67	0	0	PMR03EZPJ000	Rohm	RES, 0, 0%, 0.25 W, AEC-Q200 Grade 0, 0603	603
R80, R90, R92, R103, R105, R116	0	2.7	CRCW08052R70JNEA	Vishay-Dale	RES, 2.7, 5%, 0.125 W, 0805	805

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