

TIDA-010042 REV E2 Bill of Materials



Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
IPCB1	1		TIDA-010042	Any	Printed Circuit Board	
C1, C2, C3, C4, C5, C6, C11, C12, C13, C14, C18, C37, C38	13	0.1uF	TMK107BJ104KA-T	Taiyo Yuden	CAP CER 0.1UF 25V X5R 0603	0603
C7	1	0.47uF	GRM188R61A474KA61D	MuRata	CAP, CERM, 0.47 uF, 10 V, +/- 10%, X5R, 0603	0603
C8	1	4.7uF	LMK212B7475MGHT	Taiyo Yuden	CAP, CERM, 4.7 uF, 10 V, +/- 10%, X7R, 0805	0805
C9, C10	2	1uF	C0805C105K8RACAUTO	Kemet	CAP, CERM, 1 uF, 10 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0805	0805
C15	1	1uF	C3216X7R2A105M160AA	TDK	CAP, CERM, 1 uF, 100 V, +/- 10%, X7R, 1206	1206
C16, C39, C40	3	1uF	885012207078	Würth Electronics Inc.	CAP CER 1UF 25V X7R 0805	0805
C17	1	0.022uF	CL10B223KA8NNWC	Samsung Electro-Mechanics	CAP CER 0.022UF 25V X7R 0603	0603
C19, C20	2	1uF	CC0603MRY5V7BB105	Yageo	CAP CER 1UF 16V Y5V 0603	0603
C21	1	10uF	CL31B106KOHZW6E	Samsung Electro-Mechanics	CAP CER 10UF 16V X7R 1206	1206_190
C22	1	2200pF	885012206036	Würth Elektronik	CAP, CERM, 2200 pF, 16 V, +/- 10%, X7R, 0603	0603
C23, C24	2	1200uF	EKYB800ELL122MMN3S	Chem-Con	CAP, AL, 1200 uF, 80 V, +/- 20%, 0.02 ohm, TH	D18xL31.5mm
C25, C26, C27, C28, C29	5	4.7uF	CGA9N2X7R2A475M230KA	TDK	CAP, CERM, 4.7 uF, 100 V, +/- 20%, X7R, AEC-Q200 Grade 1,	
C30	1	1000uF	UVR2A102MHD	Nichicon	CAP, AL, 1000 uF, 100 V, +/- 20%, TH	D18xL40mm
C31, C32	2	10uF	22201C106MAT2A	AVX	CAP, CERM, 10 uF, 100 V, +/- 20%, X7R, 2220	2220
C33, C34	2	1000pF	06031C102JAT2A	AVX	CAP, CERM, 1000 pF, 100 V, +/- 5%, X7R, 0603	0603
C35, C36	2	0.1uF	885012207045	Würth Electronics Inc.	CAP CER 0.1UF 16V X7R 0805	0805
C41, C42	2	560pF	C0603C561J5GACTU	Kemet	CAP, CERM, 560 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
C43, C44	2	220pF	885012006010	Würth Electronics Inc.	CAP CER 220PF 10V C0G/NP0 0603	0603
D1, D2, D3, D4, D5	5	45V	BAS 52-02V H6327	Infineon Technologies	Diode, Schottky, 45 V, 0.75 A, SOD-523	SOD-523
D6	1	100V	B1100B-13-F	Diodes Inc.	Diode, Schottky, 100 V, 1 A, SMB	SMB
D7	1	15V	BZT52C15-7-F	Diodes Inc.	Diode, Zener, 15 V, 370 mW, AEC-Q101, SOD-123	SOD-123
D12, D13	2	100V	B1100-13-F	Diodes Inc.	Diode, Schottky, 100 V, 1 A, SMA	SMA
D14, D15	2	100V	MURA110T3G	ON Semiconductor	Diode, Ultrafast, 100 V, 2 A, SMA	SMA
FID1, FID2, FID3, FID4, FID5, FID6	6		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	N/A
H1, H2, H3, H4	4		NY PMS 440 0025 PH	B&F Fastener Supply	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	Screw
H5, H6, H7, H8	4		1902C	Keystone	Standoff, Hex, 0.5"L #4-40 Nylon	Standoff
J1	1		PEC08SAAN	Sullins Connector Solutions	Header, 100mil, 8x1, Tin, TH	Header, 8x1, 100mil, TH
J2, J4	2		PEC04SAAN	Sullins Connector Solutions	Header, 100mil, 4x1, Tin, TH	Header, 4x1, 100mil, TH
J3	1		PEC03SAAN	Sullins Connector Solutions	Header, 100mil, 3x1, Tin, TH	Header, 3 PIN, 100mil, Tin
J5, J6, J7	3		OSTT7020150	On-Shore Technology	Terminal Block, 6.35mm, 2x1, TH	On-Shore_OSTT7020150
L1, L2, L3, L4	4	32 ohm	74279201	Würth Elektronik	Ferrite Bead, 32 ohm @ 100 MHz, 0.5 A, 0805	0805
L5	1	220uH	SLF10145T-221MR65-PF	TDK	Inductor, Shielded Drum Core, Ferrite, 220 uH, 0.65 A, 0.47 ohm, SMD	SLF10145
L6, L7	2	22uH	7443642200	Würth Elektronik	Inductor, Shielded, Ferrite, 22 uH, 18 A, 0.00264 ohm, SMD	28.5x19.5mm
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
Q1	1	80 V	MMBTA56LT1G	ON Semiconductor	Transistor, PNP, 80 V, 0.5 A, SOT-23	SOT-23
Q2	1	40 V	MMBT3904-TP	Micro Commercial Co	TRANS NPN 40V 0.2A SOT23	SOT-23
Q3, Q4, Q5	3	60V	CSD18540Q5B	Texas Instruments	MOSFET, N-CH, 60 V, 100 A, DNK0008A (VSON-CLIP-8)	DNK0008A
Q6, Q7, Q8, Q9	4	100V	CSD19531Q5A	Texas Instruments	MOSFET, N-CH, 100 V, 16 A, DQJ0008A (VSONP-8)	DQJ0008A
R1, R3	2	100k	MCU08050C1003FP500	Vishay/Beyschlag	RES, 100 k, 1%, 0.2 W, 0805	0805
R2	1	49.9k	CRCW080549K9FKEA	Vishay-Dale	RES, 49.9 k, 1%, 0.125 W, AEC-Q200 Grade 0, 0805	0805
R4	1	4.53k	CRCW08054K53FKEA	Vishay-Dale	RES, 4.53 k, 1%, 0.125 W, AEC-Q200 Grade 0, 0805	0805
R5, R8, R10, R12, R19	5	205	RC0603FR-07205RL	Yageo	RES, 205, 1%, 0.1 W, 0603	0603
R6	1	196k	ERJ-6ENF1963V	Vishay-Dale	RES SMD 196K OHM 1% 1/8W 0805	0805
R7, R9, R11, R13, R14, R15, R16, R17, R18, R20, R22, R26, R27, R28, R38	15	1.00k	RG1608P-102-B-T5	Susumu Co Ltd	RES, 1.00 k, 0.1%, 0.1 W, 0603	0603
R21	1	10.2k	RC0603FR-0710K2L	Yageo	RES, 10.2 k, 1%, 0.1 W, 0603	0603
R23, R30, R31, R32	4	10.0k	ERJ-3EKF1002V	Panasonic	RES, 10.0 k, 1%, 0.1 W, 0603	0603
R24, R25, R29	3	2.05k	RC0603FR-072K05L	Yageo	RES, 2.05 k, 1%, 0.1 W, 0603	0603
R33	1	430k	CRCW0603430KFKEA	Vishay-Dale	RES, 430 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R34	1	169k	CRCW0603169KFKEA	Vishay-Dale	RES, 169 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R35	1	3.0	CRCW06033R00JNEA	Vishay-Dale	RES, 3.0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R36	1	3.00k	RC0603FR-073KL	Yageo	RES, 3.00 k, 1%, 0.1 W, 0603	0603
R37	1	47k	RC0603JR-0747KL	Yageo	RES, 47 k, 5%, 0.1 W, 0603	0603
R39, R41, R42	3	0.002	CRE2512-FZ-R002E-3	Bourns Inc.	RES 0.002 OHM 1% 3W 2512	2512
R40	1	10.0k	RG1608P-103-B-T5	Susumu Co Ltd	RES, 10.0 k, 0.1%, 0.1 W, 0603	0603
R43, R44	2	5.11	CRCW12065R11FKEA	Vishay-Dale	RES, 5.11, 1%, 0.25 W, AEC-Q200 Grade 0, 1206	1206
R47, R48	2	5.6	CRCW25125R60JNEG	Vishay-Dale	RES, 5.6, 5%, 1 W, AEC-Q200 Grade 0, 2512	2512
R49, R50, R51, R52	4	2.21	CRCW08052R21FKEA	Vishay-Dale	RES, 2.21, 1%, 0.125 W, AEC-Q200 Grade 0, 0805	0805
R53, R54	2	4.42	RC0805FR-074R42L	Yageo America	RES, 4.42, 1%, 0.125 W, 0805	0805
R58	1	1.0	CRCW06031R00JNEA	Vishay-Dale	RES, 1.0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
TP1, TP2	2		5000	Keystone	Test Point, Miniature, Red, TH	Red Miniature Testpoint
TP3	1		5001	Keystone	Test Point, Miniature, Black, TH	Black Miniature Testpoint

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
U1	1		MSP430F5132IDA	Texas Instruments	25 MHz Mixed Signal Microcontroller with 8 KB Flash, 1024 B SRAM and 29 GPIOs, -40 to 85 degC, 38-pin SOP (DA), Green (RoHS & no Sb/Br)	DA0038A
U2	1		TPD1E10B06DPYR	Texas Instruments	Single-Channel ESD in 0402 Package With 10pF Capacitance and 6V Breakdown, DPY0002A (X1SON-2)	DPY0002A
U3, U5, U15	3		INA240A2PWR	Texas Instruments	High/Low Side, Bi-Directional Zero-Drift Current Sense Amp w/ Enhanced PWM Rejection, PW0008A (TSSOP-8)	PW0008A
U4	1		TMP303CDRLR	Texas Instruments	Factory Programmed Temperature Window Comparator, DRL0006A (SOT-OTHER-6)	DRL0006A
U6	1		LM5009MMX/NOPB	Texas Instruments	9.5-95V Wide Vin, 150mA Constant On-Time Non-Synchronous Buck Regulator, DGK0008A (VSSOP-8)	DGK0008A
U7	1		OPT3001DNPR	Texas Instruments	Digital Ambient Light Sensor (ALS) with High Precision Human Eye Response, DNP0006A (USON-6)	DNP0006A
U8	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
U9, U10	2		TVS3300DRVR	Texas Instruments	33-V Precision Surge Protection Clamp, DRV0006A (WSON-6)	DRV0006A
U11, U12	2		UCC27517DBVR	Texas Instruments	4A/4A Single Channel High-speed Low-side Gate Driver, DBV0005A (SOT-23-5)	DBV0005A
U13, U14	2		LM5109BMA/NOPB	Texas Instruments	High Voltage 1A Peak Half Bridge Gate Driver, 8-pin Narrow SOIC, Pb-Free	D0008A
U16	1		TPD2E007DCKR	Texas Instruments	ESD Protection Array for AC Signal Data Interface, 2 Channels, -40 to +85 degC, 3-pin SC70 (DCK), Green (RoHS & no Sb/Br)	DCK0003A
C45	0	0.1uF	TMK107BJ104KA-T	Taiyo Yuden	CAP CER 0.1UF 25V X5R 0603	0603
D8, D9, D10, D11	0	30V	MBRM130LT1G	ON Semiconductor	Diode, Schottky, 30 V, 1 A, POWERMITE	POWERMITE
D17	0	3.6V	MMSZ4685T1G	ON Semiconductor	Diode, Zener, 3.6 V, 500 mW, SOD-123	SOD-123
R45, R46, R55, R56	0	39.0k	CRCW080539R0JNEA	Vishay-Dale	RES, 39.0 k, 1%, 0.2 W, 0805	0805
R57	0	1.0	CRCW06031R00JNEA	Vishay-Dale	RES, 1.0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603

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 (www.ti.com/legal/termsofsale.html) or other applicable terms available either on 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 © 2019, Texas Instruments Incorporated