

# Bill of Materials

TI DESIGNS TIDA-00171

Filter Board

Isolated Current Shunt and Voltage Measurement Kit

Qty	Reference	Part Description	Manufacturer	Manufacturer Part Number	PCB Footprint	Note
37	C1, C2, C3, C9, C10, C11, C13, C21, C23, C24, C25, C26, C28, C35, C36, C37, C38, C44, C58, C64, C67, C80, C89, C90, C100, C109, C114, C115, C116, C117, C118, C119, C125, C136, C155, C172, C177	CAP, CERM, 0.1uF, 50V, +/-10%, X7R, 0603	Kemet	C0603C104K5RACTU	0603	Fitted
2	C4, C139	CAP, CERM, 0.1uF, 16V, +/-5%, X7R, 0603	AVX	0603YC104JAT2A	0603	Fitted
1	C5	CAP, CERM, 1uF, 16V, +/-10%, X5R, 0603	TDK	C1608X5R1C105K080AA	0603	Fitted
14	C6, C7, C8, C16, C29, C30, C31, C110, C111, C112, C113, C120, C121, C122	CAP, CERM, 4700pF, 100V, +/-10%, X7R, 0603	AVX	06031C472KAT2A	0603	Fitted
1	C12	CAP, AL, 10uF, 16V, +/-20%, 3 ohm, SMD	Panasonic	EEFEC1C100R	SMT Radial B	Fitted
9	C14, C43, C45, C53, C54, C72, C73, C76, C77	CAP, CERM, 0.1uF, 25V, +/-5%, X7R, 0603	AVX	06033C104JAT2A	0603	Fitted
1	C18	CAP, CERM, 0.47uF, 16V, +/-10%, X7R, 0805	AVX	0805YC474KAT2A	0805	Fitted
5	C19, C33, C46, C71, C93	CAP, CERM, 10uF, 35V, +/-20%, X7R, 1210	Taiyo Yuden	GMK325AB7106MM-T	1210	Fitted
16	C32, C34, C39, C40, C47, C57, C59, C61, C68, C75, C81, C85, C94, C97, C102, C105	CAP, CERM, 0.01uF, 100V, +/-5%, X7R, 0603	AVX	06031C103JAT2A	0603	Fitted
1	C41	CAP, CERM, 1000pF, 2KV 10% X7R 1206	Johanson Dielectrics Inc	202R18W102KV4E	1206	Fitted
7	C42, C56, C60, C62, C69, C74,	CAP, CERM, 0.01uF, 100V, +/-10%, X7R, 0603	AVX	06031C103KAT2A	0603	Fitted
2	C48, C49	CAP, CERM, 10uF, 50V, +/-10%, X7R, 1210	MuRata	GRM32ER71H106KA12L	1210	Fitted
1	C50	CAP, AL, 100uF, 50V, +/-20%, 0.17 ohm, TH	Nichicon	UHE1H101MPD1TD	8.0x10.5mm	Fitted
3	C51, C52, C87	CAP, CERM, 10uF, 16V, +/-10%, X7R, 1206	MuRata	GRM31CR71C106KAC7L	1206	Fitted
4	C55, C65, C106, C107	CAP, CERM, 27pF, 50V, +/-5%, COG/NPO, 0603	AVX	06035A270JAT2A	0603	Fitted
1	C70	CAP, CERM, 22uF, 10V, +/-20%, X5R, 1210	TDK	C3225X5R1A226M230AA	1210	Fitted
1	C78	CAP, CERM, 10uF, 35V, +/-10%, X7R, 1206	Taiyo Yuden	GMK316AB7106KL-TR	1206	Fitted
1	C79	CAP, CERM, 1uF, 25V, +/-10%, X7R, 1206	AVX	12063C105KAT2A	1206	Fitted
1	C84	CAP, CERM, 330pF, 50V, +/-5%, COG/NPO, 0603	AVX	06035A331JAT2A	0603	Fitted
1	C91	CAP, AL, 150uF, 16V, +/-20%, 0.34 ohm, SMD	Nichicon	EEFKA1C151XP	6.3x7.7	Fitted
1	C95	CAP, CERM, 0.039uF, 50V, +/-10%, X7R, 0603	MuRata	06033C393KAT2A	0603	Fitted
1	C98	CAP, CERM, 0.1uF, 50V, +/-10%, X7R, 0603	AVX	06035C104KAT2A	0603	Fitted
1	C135	CAP, CERM, 680pF, 25V, +/-5%, COG/NPO, 0603	MuRata	MCMT18N681F250CT	0603	Fitted
1	C146	CAP, CERM, 2.2uF, 100V, +/-10%, X7R, 1210	MuRata	GRM32ER72A225KA35L...	1210	Fitted
1	C150	CAP, CERM, 0.015uF, 16V, +/-10%, X7R, 0603	MuRata	MC0603B153K160CT	0603	Fitted
2	C153, C174	CAP, CERM, 0.1uF, 10V, +/-10%, X7R, 0603	Kemet	0603ZC104KAT2A	0603	Fitted
1	C156	CAP, CERM, 0.01uF, 50V, +/-10%, X7R, 0805	AVX	08055C103KAT2A	0805	Fitted
1	C164	CAP, CERM, 1uF, 16V, +/-10%, X5R, 0603	Kemet	C0603C105K4PACTU	0603	Fitted
3	C166, C167, C168	CAP, CERM, 47uF, 10V, +/-10%, X5R, 1210	MuRata	GRM32ER61A476KE20L	1210	Fitted
3	D4, D5, D10	LED SMARTLED GREEN 570NM 0603	OSRAM Opto Semiconductors	KPT-1608CGCK	0603	Fitted
1	D6	Rectifier, Ultrafast Power, 50V 1A	On Semi	MURA105T3G	403D	Fitted
1	D7	Diode, Schottky, 40V, 3A, SMC	ON Semiconductor	MBRS340T3G	SMC	Fitted
1	D8	Diode, Schottky, 30V, 0.2A, SOT-23	Diodes Inc.	BAT54S-7-F	SOT-23	Fitted
16	D11, D12, D14, D15, D16, D17, D19, D20, D21, D22, D24, D25, D26, D27, D28, D29	Diode, P-N, 70V, 0.2A, SOT-323	Diodes Inc		SOT-323	Fitted
1	D18	Diode, Schottky, 20V, 2A, SMA	Diodes Inc.	B220A-13-F	SMA	Fitted
1	D23	Diode, Schottky, 200V, 4A, SMC	ON Semiconductor	MBRS4201T3G	SMC	Fitted
1	FB1	FERRITE CHIP 1000 OHM 300MA 0603	TDK Corporation		0603	Fitted
1	J1	Connector, Right Angle, Male, 2x20 pin, 100mil spacing	WURTH ELEKTRONIK			Fitted
2	J2, J15	Header, Male 2x5-pin, 100mil spacing	Sullins		0.100 inch x 5 X 2	Fitted
1	J4	CONN HIGH SPD CARD EDGE 60 POS	3M		28.6x7mm	Fitted
1	J5	CONN HIGH SPD CARD EDGE 120 POS	3M		7x56mm	Fitted
2	J6, J7	Header, Male 10-pin, 100mil spacing,	Sullins		0.100 inch x 10	Fitted
3	J8, J9, J10	Header, Male 2-pin, 100mil spacing,	Sullins		0.100 inch x 2	Fitted
1	J12	Header, Male 2x6 pin, 100mil spacing	Sullins		0.100 inch x 2X6	Fitted
1	J13	Terminal Block, 2-pin, 15-A, 5.1mm	OST		0.40 x 0.35 inch	Fitted
1	J14	Connector, SMA Jack, Vertical, Gold, SMD	Emerson Network Power	142-0711-201	SMA	Fitted
1	L1	Inductor, Shielded Drum Core, Ferrite, 3.3uH, 3.72A, 0.02 ohm, SMD	Coilcraft	MSS7341-332NLB	MSS7341	Fitted
1	LBL1	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	Brady	THT-14-423-10	PCB Label 0.650"H x 0.200"W	Fitted
4	MH1, MH2, MH3, MH4	Mountin hole, NPTH Drill 3.2mm			Screw	Fitted
5	R1, R19, R20, R164, R165	RES, 22 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW040222R0JNED	0402	Fitted
7	R2, R3, R4, R25, R31, R35, R36	RES, 270k ohm, 1%, 0.1W, 0603	Yageo America	RC0603FR-07270KL	0603	Fitted
14	R5, R6, R7, R15, R16, R17, R26, R28, R32, R33, R34, R69, R70, R71	RES, 4.7k ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW06034K70JNEA	0603	Fitted
7	R8, R13, R14, R24, R37, R38, R39	RES, 7.50k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06037K50FKEA	0603	Fitted
16	R9, R43, R79, R85, R92, R102, R108, R109, R126, R130, R139, R140, R150, R159, R186, R204	RES, 0 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW06030000Z0EA	0603	Fitted
7	R10, R11, R12, R27, R40, R41,	RES, 100k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603100KFKEA	0603	Fitted
23	R18, R21, R23, R68, R73, R74, R77, R83, R87, R91, R96, R107, R117, R123, R132, R138, R143, R145, R153, R160, R161, R162, R163	RES, 10.0 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060310R0FKEA	0603	Fitted
7	R72, R80, R84, R118, R137, R142, R200	RES, 10.0k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060310K0FKEA	0603	Fitted
4	R86, R88, R207, R208	RES, 4.70k ohm, 1%, 0.1W, 0603	Yageo America	RC0603FR-0747K7L	0603	Fitted
2	R93, R104	RES, 0 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW04020000Z0ED	0402	Fitted
1	R98	RES, 1.5k ohm, 5%, 0.25W, 1206	Vishay-Dale	CRCW12061K50JNEA	1206	Fitted
3	R113, R114, R115	RES, 100 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW0603100RJNEA	0603	Fitted

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1	R122	RES, 150k ohm, 1%, 0.1W, 0603	Yageo America	RC0603FR-07150KL	0603	Fitted
1	R131	RES, 6.8 ohm, 5%, 0.25W, 1206	Vishay-Dale	CRCW12066R80JNEA	1206	Fitted
1	R135	RES, 49.9 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060349R9FKEA	0603	Fitted
1	R149	RES, 1.47k ohm, 1%, 0.1W, 0603	Yageo America	ERJ3EKF1471V	0603	Fitted
1	R151	RES, 137k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603137KFKEA	0603	Fitted
2	R156, R157	RES, 10k ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW060310K0JNEA	0603	Fitted
1	R168	RES, 300 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW0603300RJNEA	0603	Fitted
1	R169	RES, 620 ohm, 1%, 0.1W, 0603	Yageo America	MCO063W06031620R	0603	Fitted
1	R170	RES, 17.4k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060317K4FKEA	0603	Fitted
1	R172	RES, 0 ohm, 5%, 0.1W, 0603	Yageo America	RC0603JR-070RL	0603	Fitted
1	R173	RES, 15k ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW060315K0JNEA	0603	Fitted
1	R176	RES, 47.5k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060347K5FKEA	0603	Fitted
1	R177	RES, 10.2k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060310K2FKEA	0603	Fitted
1	R178	RES, 3.24k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06033K24FKEA	0603	Fitted
1	R180	RES, 42.2k ohm, 1%, 0.1W, 0603	Yageo America	ERJ3EKF4222V	0603	Fitted
1	R181	RES, 58.3k ohm, 0.1%, 0.1W, 0603	Yageo America		0603	Fitted
1	R182	RES, 0 ohm, 5%, 0.25W, 1206	Vishay-Dale	CRCW12060000Z0EA	1206	Fitted
1	R184	RES, 48.7k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060348K7FKEA	0603	Fitted
1	R190	RES, 14.0k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060314K0FKEA	0603	Fitted
1	R191	RES, 499 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603499RFKEA	0603	Fitted
1	R193	RES, 4.99k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06034K99FKEA	0603	Fitted
1	R198	RES, 1.00k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06031K00FKEA	0603	Fitted
1	R206	RES, 910 ohm, 0.1%, 0.1W, 0603	Susumu Co Ltd	CPF0603B910RE1	0603	Fitted
1	T1	Transformer	WURTH ELEKTRONIK	750342354	17.75x12.7x13.46mm	Fitted
2	TP1, TP2	Test Point, 0.040 Hole	STD			Fitted
7	TP3, TP4, TP5, TP6, TP7, TP8,	Test Point, 0.020 Hole	STD			Fitted
7	U1, U2, U3, U8, U13, U14, U15	IC, 1.1nV/vHz Noise, Low Power, Precision OpAmp 7 nsec, 2.7V to 5V Comparator with Rail-to- Rail Output, 5-pin SOT-23	TI	OPA211AID	SO	Fitted
7	U4, U5, U6, U11, U17, U18, U19		TI	LMV7219M5	MF05A	Fitted
1	U10	IC, Voltage Reference, 50ppm/°C Max, 50uA	TI	REF3012AIDBZT	SOT23	Fitted
4	U16, U21, U25, U28	16-Bit, Quad Channel, Ultra-Low Glitch, Voltage Output DAC with 2.5V, 2ppm/°C Internal Reference, PW0016A Programmable 3-PLL Clock Synthesizer / Multiplier/Divider	TI	DAC8564IAPW	PW0016A	Fitted
1	U22		TI	CDCE906PW	TSSOP (PW) 20	Fitted
1	U23	Buck Step Down Regulator with 3.5 to 28 V Input and 0.8 to 25 V Output, -40 to 150 degC, 8-Pin SOIC (D), Green (RoHS & no Sb/Br)	TI	TPS54232D	D0008A	Fitted
1	U24	Ultra Low Noise, 800 mA Linear Voltage Regulator for RF/Analog Circuits, DNT0012B	TI	LP38798SDE-ADJ/NOPB	DNT0012B	Fitted
1	U26	Integrated 5-A 40-V Wide Input Range	TI	TPS55340RTET	RTE0016C	Fitted
1	U30	Optocoupler, 3.75kV RMS, SMT	Vishay-Semiconductor	TCMT1107	SOP-4	Fitted
1	U32	IC, Precision Adjustable Shunt Regulator	TI	TL431AIDBZR	SOT23-3	Fitted
1	U34	IC SRAM 512KBIT 20MHZ 8SOIC			8-SOIC (0.154", 3.90mm Width)	Fitted
1	Y1	Crystal, 10.000MHz, 10pF, SMD	TXC Corporation	7B-27.000MEEQ-T	5x0.9x3.2mm	Fitted
0	C15, C17, C88, C92, C99, C126,	CAP, CERAM, 0.22uF, 6.3V, +/-10%, X7R, 0603	MuRata		0603	Not Fitted
0	C20, C27	CAP, CERAM, 0.047uF, 25V, +/-5%, X7R, 0603	AVX		0603	Not Fitted
0	C22, C83, C86, C96, C104, C124,	CAP, CERAM, 4.7uF, 6.3V, +/-10%, X5R, 0603	Kemet		0603	Not Fitted
0	C63	CAP, CERAM, 1uF, 16V, +/-10%, X5R, 0603	TDK		0603	Not Fitted
0	C66, C178	CAP, CERAM, 0.1uF, 16V, +/-5%, X7R, 0603	AVX		0603	Not Fitted
0	C101, C108	CAP, CERAM, 1uF, 10V, +/-10%, X7R, 0603	MuRata		0603	Not Fitted
0	C103, C176	CAP, CERAM, 100pF, 50V, +/-5%, COG/NPO, 0603	TDK		0603	Not Fitted
0	C123, C138, C143, C144, C160,	CAP, CERAM, 100uF, 6.3V, +/-20%, X5R, 1206	MuRata		1206	Not Fitted
0	C130	CAP, CERAM, 47pF, 25V, +/-5%, COG/NPO, 0402	MuRata		0402	Not Fitted
0	C149	CAP, CERAM, 10uF, 35V, +/-20%, X7R, 1210	Taiyo Yuden		1210	Not Fitted
0	D1, D2	Diode, TVS, Bi, 15V, 160W, SOD-323	NXP Semiconductor		SOD-323	Not Fitted
0	D3, D9	LED SmartLED Green 570NM	OSRAM		0603	Not Fitted
0	D13	Diode, Ultrafast, 75V, 0.3A, SOT-23	Diodes Inc.		SOT-23	Not Fitted
0	FB2, FB3, FB4, FB5	FERRITE CHIP 1000 OHM 300MA 0603	TDK Corporation		0603	Not Fitted
0	J3	Connector, USB Micro, Type AB	Molex		5.3x7.5 mm	Not Fitted
0	J11	Cnector Header 14Pos 2mm Vert Gold	Molex Inc		2.00mm	Not Fitted
0	R22, R158, R192	RES, 0 ohm, 5%, 0.1W, 0603	Vishay-Dale		0603	Not Fitted
0	R29, R78, R127, R136, R144,	RES, 4.87k ohm, 1%, 0.1W, 0603	Vishay-Dale		0603	Not Fitted
0	R30	RES, 300 ohm, 5%, 0.1W, 0603	Vishay-Dale		0603	Not Fitted
0	R44, R45, R46, R47, R48, R49,	RES, 22 ohm, 5%, 0.063W, 0402	Vishay-Dale		0402	Not Fitted
0	R75, R76, R81, R82, R89, R90,	RES, 100 ohm, 5%, 0.1W, 0603	Vishay-Dale		0603	Not Fitted
0	R95, R97, R116	RES, 0 ohm, 5%, 0.063W, 0402	Vishay-Dale		0402	Not Fitted
0	R103, R121	RES, 10k ohm, 5%, 0.1W, 0603	Vishay-Dale		0603	Not Fitted
0	R128, R195	RES, 100k ohm, 1%, 0.1W, 0603	Vishay-Dale		0603	Not Fitted
0	R167, R171	Resistor, Chip Array, 4.7K OHM 4 RES 0612	Vishay		0612	Not Fitted
0	R183	RES, 0 ohm, 5%, 0.25W, 1206	Vishay-Dale		1206	Not Fitted
0	R194	RES, 10k ohm, 5%, 0.1W, 0603	Yageo America		0603	Not Fitted
0	R196	RES, 301 ohm, 0.5%, 0.1W, 0603	Yageo America		0603	Not Fitted
0	R197, R205	RES, 0 ohm, 5%, 0.1W, 0603	Yageo America		0603	Not Fitted
0	R199	RES, 220 ohm, 1%, 0.1W, 0603	Yageo America		0603	Not Fitted
0	R201, R203	RES, 4.70k ohm, 1%, 0.1W, 0603	Yageo America		0603	Not Fitted
0	S1, S3	Switch, Tactile, SPST-NO, 0.05A, 12V, SMT	TE Connectivity		SW, SPST 6x6 mm SW, SMT Half Pitch 4SPST, 5.8x2.7x6.25 mm	Not Fitted
0	S2	Switch, Slide, SPST 4 poles, SMT	CTS Electrocomponents			Not Fitted
0	TP10	Test Point, 0.020 Hole	STD			Not Fitted
0	U7	IC, Single Chip USB To UART Bridge	Silicon Laboratories		QFN-28	Not Fitted
0	U9	Polyzen, 5.6V, PPTC/ZENER, SMD	TE		SMD 4 x 4mm	Not Fitted
0	U12	Voltage Reference, SRS PREC 4.096V SOT23-3	TI	REF3040AIDBZT	SOT23	Not Fitted
0	U20	IC FPGA SPARTAN, 102 I/O, 144TQFP	Xilinx		TQG-144	Not Fitted
0	U27	Single LVDS Transmitter	Micron Technology		SO8W	Not Fitted
0	U29	Programmable 1-PLL VCXO Clock Synthesizer With 1.8- V, 2.5-V, and 3.3-V Outputs, PW0014A	Texas Instruments	CDCE913PW	PW0014A	Not Fitted
0	U31	IC, 150mA, Low IQ, LDO Regulator	TI	TLV70718DQCN	uDFN	Not Fitted
0	U33	IC, 100MHz, EconOscillator, 2.7-3.6V, 8 uSOP	Maxim		8 uSOP	Not Fitted
0	U35	IC SRAM 512KBIT 20MHZ 8SOIC			8-SOIC (0.154", 3.90mm Width)	Not Fitted
0	U36	IC, Ultra-low Noise, High PSRR 200 mA, LDO, 1.2V 0.2A SSOT	TI	TPS79912DBV	SOT23-5	Not Fitted
0	U37	IC EEPROM 1MBIT 1MHZ 8SOIC	ON Semiconductor		8-SOIC (0.154", 3.90mm Width)	Not Fitted
0	Y2	Crystal, 10.000MHz, 10pF, SMD	TXC Corporation		5x0.9x3.2mm	Not Fitted