

# Bill of Materials

TI DESIGNS

TIDA-00094

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint	Note
1	1	C1	47uF	Capacitor	KEMET	T494B476M010AT		TANT_B	
2	3	C2 C16 C24	33uF	Capacitor	AVX	TPSB336K016R0350		TANT_B	
3	30	C3 C4 C5 C6 C9 C10 C11 C12 C17 C18 C19 C20 C22 C25 C26 C27 C28 C29 C114 C115 C116 C117 C118 C119 C120 C121 C122 C123 C124 C125	0.1uF	Capacitor	AVX	02016D104KAT2A		0201	
4	4	C7 C53 C109 C113	1uF	Capacitor	MURATA	GRM155R60J105KE19D		0402	
5	4	C8 C21 C23 C97	10uF	Capacitor	MURATA	GRM188R60J106ME47D		0603	
6	2	C13 C15	0.1uF	Capacitor	AVX	0603YC104KAT2A		0603	
7	4	C14 C30 C37 C46	1uF	Capacitor	AVX	0603YC105KAT2A		0603	
8	2	C31 C48	2.2uF	Capacitor	MURATA	GRM188R71A225KE15D		0603	
9	2	C32 C41	4.7uF	Capacitor	AVX	06036D475KAT2A		0603	
10	2	C33 C43	4.7uF	Capacitor	TDK CORP	C3216X7R1C475K/1.60		1206	
11	3	C34 C40 C44	10nF	Capacitor	TDK	C1005X7R1E103K		0402	
12	0	C35 C45	10uF	Capacitor	MURATA	GRM21BR71A106KE51L_DNI		0805	DNI
13	36	C36 C39 C47 C61 C62 C65 C72 C77 C89 C102 C105 C106 C107 C108 C110 C111 C112 C128 C129 C130 C135 C136 C144 C148 C149 C151 C161 C162 C163 C164 C165 C168 C169 C186 C187 C190	.1uF	Capacitor	MURATA	GRM155R61A104KA01D		0402	
14	1	C38	10uF	Capacitor	MURATA	GRM21BR71A106KE51L		0805	
15	1	C42	33pF	Capacitor	MURATA	GRM1555C1H330J201D		0402	
16	8	C49 C55 C64 C71 C87 C92 C93 C95	1uF	Capacitor	MURATA	GRM155R60J105KE19D		0402	OR EQUIVALENT
17	16	C50 C51 C70 C74 C79 C86 C88 C91 C96 C103 C104 C138 C145 C167 C185 C188	.01uF	Capacitor	MURATA	GRM155R71H103KA88D		0402	
18	7	C52 C59 C66 C68 C73 C75 C94	10uF	Capacitor	TDK CORP	C3216X5R1A106K		1206	

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint	Note
19	6	C54 C57 C60 C131 C133 C134	.001uF	Capacitor	AVX	04025C102JAT2A		0402	
20	11	C56 C69 C83 C132 C141 C146 C170 C171 C172 C177 C179	100pF	Capacitor	MURATA	GRM1555C1H101JZ01D		0402	
21	47	C58 C63 C76 C80 C82	0	Resistor	PANASONIC	ERJ-2GE0R00X		0402	
22	3	C67 C85 C189	.22uF	Capacitor	TAIYO YUDEN	JMK105B7224KV-F		0402	OR EQUIVALENT
23	0	C78 C90 C150	10pF	Capacitor	MURATA	GRM1555C1H100JZ01D_DNI		0402	DNI
24	0	C81 C142 C143 C160	.1uF	Capacitor	MURATA	GRM155R61A104KA01D_DNI		0402	DNI
25	1	C98	.01uF	Capacitor	MURATA	GRM2195C1H103JA01D		0805	
26	1	C99	4.7uF	Capacitor	AVX CORP	0805YC475KAT2A		0805	
27	3	C100 C101 C194	47pF	Capacitor	AVX	04025A470JAT2A		0402	
28	1	C137	10pF	Capacitor	MURATA	GRM1555C1H100JZ01D		0402	
29	1	C191	0	Resistor	PANASONIC	ERJ-2GE0R00X		0402	OR EQUIVALENT
30	1	C193	15pF	Capacitor	KEMET	CBR04C150F5GAC		0402	
31	3	D1 D3 D4	LED GREEN	LED	PANASONIC	LNJ306G5UUX		LED_0805	
32	1	D2	LED AMBER	LED	PANASONIC	LNJ406K54RX		LED_0805	
33	1	FB1	1K OHM @ 100MHZ	Ferrite Bead	MURATA	BLM41PG1025N1L		1806	
34	2	FB2 FB3	27uF	Capacitor	MURATA	NFM31PC276B0J3		1206_BEAD_NFM31P	
35	1	FB4	120 OHM @ 100MHZ	Ferrite Bead	MURATA	BLM31PG1215N1L		1206	
36	3	FB5 FB6 FB7	68 OHM @ 100MHZ	Ferrite Bead	PANASONIC	EXC-ML32A680U		1206	
37	1	J1	CONN JACK PWR	Power Connector	SWITCHCRAFT	RAPC722X		CON_RAPC722_JACK_THVT_3	
38	4	J2 J15 J16 J17	RED	Test Point	ALLIED	ST-351A		JACK_THVT_BANANA_250DIA	
39	3	J3 J18 J19	BLK	Test Point	ALLIED	ST-351B		JACK_THVT_BANANA_250DIA	
40	1	J4	USB_SUPER-MINI_AB	USB Connector	WURTH ELEKTRONIK	651305142821		CON_SMRT_USBMNE20_F	
41	9	J6 J7 J8 J9 J10 J11 J12	SMB_THVT_REC	SMA Connector	Johnson Components	142-0701-201		SMA_THVT_312x312	
42	1	J5	QTH-060-01-F-D-A-RT1	Connector	SAMTEC	QTH-060-01-F-D-A-RT1		CON_SMVT_120POS_QTH_SAMTEC_RT1	
43	0	JP1 JP4	HEADER_1x2_100_430L	Header Pins	SAMTEC	HTSW-103-07-G-S_DNI		HDR_THVT_1x2_100_M	DNI
44	4	JP2 JP3 JP5 JP6	HEADER_1x3_100_430L	Header Pins	SAMTEC	HTSW-103-07-G-S		HDR_THVT_1x3_100_M	SHUNT 1-2
45	5	JP7 JP9 JP11 JP12	JUMPER_1X3_100	Jumper Pins	SAMTEC	HTSW-103-07-G-S		HDR_THVT_1x3_100_M	SHUNT 2-3
46	2	JP8 JP10	JUMPER_1X2_100	Jumper Pins	SAMTEC	HTSW-102-07-G-S		HDR_THVT_1X2_100_M	
47	2	JP13 JP15	JUMPER_1X3_100	Jumper Pins	SAMTEC	HTSW-103-07-G-S		HDR_THVT_1x3_100_M	SHUNT 1-2
48	0	L1 L9 L11 L25 L26 L31	0.12uH	Capacitor	COILCRAFT	0402CS-R12XGL_DNI		0402	DNI
49	2	L3 L6	22nH	Capacitor	COILCRAFT	0402CS-22NXGL		0402	
50	2	L4 L5	2.2uH	Capacitor	COILCRAFT	LPS3015-222ML		IND_SM_LPS3015	
51	0	L7 L10 L13 L19	82nH	Capacitor	COILCRAFT	0402CS-82NXGL_DNI		0402	DNI
52	4	L12 L23 L33 L36	82nH	Capacitor	COILCRAFT	0402CS-82NXGL		0402	
53	0	PP1 PP2 PP3 PP4	PROBE POINT	Probe Point	N/A	N/A		PROBE_POINT_22PAD	
54	1	Q1	CSD17313Q2	Power FET	TI	CSD17313Q2		SON_8_2MMX2MM_OP65MM	
55	2	Q2 Q3	DTC114EET1G	Digital BJT	ON SEMI	DTC114EET1G		SC_75_321	
56	3	R1 R4 R14	10K	Resistor	PANASONIC	ERJ-3EKF1002V		0603	
57	1	R2	30.9K	Resistor	Panasonic	ERJ-3EKF3092V		0603	
58	1	R3	649K	Resistor	PANASONIC	ERJ-2RKF6493X		0402	
59	1	R5	120K	Resistor	PANASONIC	ERJ-2RKF1203X		0402	
60	1	R6	12K	Resistor	VISHAY	CRCW060312K0FKEA		0603	
61	1	R7	536K	Resistor	PANASONIC	ERJ-2RKF5363X		0402	
62	1	R10	180K	Resistor	PANASONIC	ERJ-2RKF1803X		0402	
63	1	R11	1.8K	Resistor	VISHAY	CRCW06031K80FKEA		0603	
64	0	R12 R13 R27 R43 R44	0	Resistor	PANASONIC	ERJ-2GE0R00X_DNI		0402	DNI
65	6	R15 R16 R18 R88 R92	10K	Resistor	PANASONIC	ERJ-2RKF1002X		0402	
66	0	R17 R19	0	Resistor	PANASONIC	ERJ-6GEY0R00V_DNI		0805	DNI
67	20	R20 R22 R23 R24 R40	49.9	Resistor	PANASONIC	ERJ-2RKF49R9X		0402	
68	2	R21 R69	91	Resistor	PANASONIC	ERJ-2RKF91R0X		0402	

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint	Note
69	2	R25 R75	3.01K	Resistor	PANASONIC	ERJ-2RKF3011X		0402	
70	10	R28 R30 R31 R32 R33	24.9	Resistor	PANASONIC	ERJ-2RKF24R9X		0402	
71	11	R29 R34 R41 R42 R94	1K	Resistor	PANASONIC	ERJ-2RKF1001X		0402	
72	2	R35 R37	169	Resistor	PANASONIC	ERJ-2RKF1690X		0402	
73	2	R38 R39	64.9	Resistor	PANASONIC	ERJ-2RKF64R9X		0402	
74	0	R45 R53 R99	0	Resistor	PANASONIC	ERJ-3GEY0R00V_DNI		0603	DNI
75	4	R46 R52 R76 R98	0	Resistor	PANASONIC	ERJ-3GEY0R00V		0603	
76	2	R48 R51	4.99K	Resistor	PANASONIC	ERJ-2RKF4991X		0402	
77	0	R49 R50 R54 R55	68	Resistor	PANASONIC	ERJ-2RKF68R0X_DNI		0402	DNI
78	0	R58 R62 R73 R121	24.9	Resistor	PANASONIC	ERJ-2RKF24R9X_DNI		0402	DNI
79	4	R59 R119 R120 R131	17.4	Resistor	VISHAY DALE	CRCW040217R4FKED		0402	
80	2	R60 R74	15	Resistor	VISHAY DALE	CRCW040215R0FKED		0402	
81	2	R63 R64	348	Resistor	PANASONIC	ERJ-2RKF3480X		0402	
82	2	R67 R68	200	Resistor	PANASONIC	ERJ-2RKF2000X		0402	
83	2	R70 R71	76.8	Resistor	PANASONIC	ERJ-2RKF76R8X		0402	
84	2	R85 R93	330	Resistor	PANASONIC	ERJ-3EKF3300V		0603	
85	3	R91 R95 R116	10	Resistor	PANASONIC	ERJ-2RKF10R0X		0402	
86	2	R101 R103	121	Resistor	PANSONIC	ERJ-2RKF1210X		0402	
87	0	R102 R156 R157	1K	Resistor	PANASONIC	ERJ-2RKF1001X_DNI		0402	DNI
88	1	R117	10	Resistor	PANASONIC	ERF-2RKF10R0X		0402	
89	2	R188 R189	39pF	Capacitor	AVX	04025A390FAT2A		0402	
90	0	SJP1	SOLDER JUMPER, 0603	Solder Jumper	DNI	DNI		SJP3_JUMPER	DNI
91	2	SW1 SW2	SWITCH, PUSHBUTTON, THRU HOLE	Pushbutton	C & K SWITCH	PTS635SL43 LFS		SW_THVT_SPST_2	
92	1	SW3	SWITCH, THVT, DIP, SPST	DIP Switch	CTS CORP	206-75T		SW_THVT_SPST_8	
93	1	T1	RF TRANSFORMER	Transformer	PULSE	CX2156NL		XFMR_5_106x169_59	
94	0	T2 T3 T4	TC2-1T+	Transformer	MINI-CIRCUITS	TC2-1T+_DNI		XFMR_5_150X150_50_AT224	DNI
95	1	T5	ADT4-1WT+	Transformer	MINICIRCUITS	ADT4-1WT+		XFMR_6_310X220_100	
96	2	TP1 TP2	RED	Test Point	KEYSTONE	5000		TP_THVT_100_RND	
97	8	TP3 TP4 TP5 TP10	BLK	Test Point	KEYSTONE	5001		TP_THVT_100_RND	
98	4	TP6 TP7 TP8 TP9	WHT	Test Point	KEYSTONE	5002		TP_THVT_100_RND	
99	9	TP11 TP13 TP14 TP15	BLU	Test Point	KEYSTONE	5117		TP_THVT_100_RND	
100	1	U1	TPS2400	IC	TI	TPS2400DBV		SOT_23_5	
101	2	U2 U4	TPS7A8001DRB	IC	TI	TPS7A8001DRB		SON_8_3MMx3MM_OP65MM	
102	1	U3	TPS62420	IC	TI	TPS62420DRCR		SON_10_3MMx3MM_OP50MM	
103	1	U5	LP2985-50	IC	TI	LP2985-50DBVR		SOT_5_120X69_OP95MM	
104	1	U6	FT245RL	IC	FTDI Chip	FT245RL-REEL		ssop_28_413x220_26	
105	1	U8	THS770006	IC	Texas Instruments	THS770006IRGET		QFN_24_163x163_0p50mm_RGE	
106	1	U9	THS4509	IC	TI	THS4509RGT		QFN_16_124X124_PWRPAD	
107	1	U10	LMH6554	IC	TI	LMH6554LE		QFN_14_98X98_OP4MM_LLP	
108	1	U11	LMH6881	IC	TI	LMH6881SQE/NOPB		WQFN_24_157X157_OP50MM	
109	1	U7	ADS4449	IC	TI	ADS4449IZCR		BGA_144_10MMx10MM_OP80MM	
110	1		BARE BOARD, ADS4449 AMP I/F	PCB	VIASYSTEMS	ADS4449 AMP I/F REV B			
111	4		PANHEAD SCREW 4-40 x 3/8"	Screw	Building Fasteners	PMSS5 440 0038 PH			SCREW FOR STANDOFF
112	13		SHUNT-HEADER	Header	KELTRON	MJ-5.97-G or equivalent			SHUNT FOR HEADER
113	1		SHUNT-JUMPER-0603	Jumper	PANASONIC	ERJ-3GE0R00X			SHUNT FOR JUMPER
114	4		STANDOFF ALUM HEX 4-40 x 1/2"	Standoff	KEYSTONE	2203		STANDOFF_HEX_4-40	STANDOFF

## IMPORTANT NOTICE FOR TI REFERENCE DESIGNS

Texas Instruments Incorporated ("TI") reference designs are solely intended to assist designers ("Buyers") who are developing systems that incorporate TI semiconductor products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products.

TI reference designs have been created using standard laboratory conditions and engineering practices. **TI has not conducted any testing other than that specifically described in the published documentation for a particular reference design.** TI may make corrections, enhancements, improvements and other changes to its reference designs.

Buyers are authorized to use TI reference designs with the TI component(s) identified in each particular reference design and to modify the reference design in the development of their end products. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN, including but not limited to any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI components or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services, or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

TI REFERENCE DESIGNS ARE PROVIDED "AS IS". TI MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE REFERENCE DESIGNS OR USE OF THE REFERENCE DESIGNS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. TI DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO TI REFERENCE DESIGNS OR USE THEREOF. TI SHALL NOT BE LIABLE FOR AND SHALL NOT DEFEND OR INDEMNIFY BUYERS AGAINST ANY THIRD PARTY INFRINGEMENT CLAIM THAT RELATES TO OR IS BASED ON A COMBINATION OF COMPONENTS PROVIDED IN A TI REFERENCE DESIGN. IN NO EVENT SHALL TI BE LIABLE FOR ANY ACTUAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY AND WHETHER OR NOT TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, ARISING IN ANY WAY OUT OF TI REFERENCE DESIGNS OR BUYER'S USE OF TI REFERENCE DESIGNS.

TI reserves the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI's terms and conditions of sale of semiconductor products. Testing and other quality control techniques for TI components are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

TI assumes no liability for applications assistance or the design of Buyers' products. Buyers are responsible for their products and applications using TI components. To minimize the risks associated with Buyers' products and applications, Buyers should provide adequate design and operating safeguards.

Reproduction of significant portions of TI information in TI data books, data sheets or reference designs is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards that anticipate dangerous failures, monitor failures and their consequences, lessen the likelihood of dangerous failures and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in Buyer's safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI's goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed an agreement specifically governing such use.

Only those TI components that TI has specifically designated as military grade or "enhanced plastic" are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components that have **not** been so designated is solely at Buyer's risk, and Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components as meeting ISO/TS16949 requirements, mainly for automotive use. In any case of use of non-designated products, TI will not be responsible for any failure to meet ISO/TS16949.