

TIDA-00459 REV E1 Bill of Materials

Item #	Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
1	IPC B1	1		TIDA-00459	Any	Printed Circuit Board	
2	C1, C2	2	220pF	C1608C0G1H221J	TDK	CAP, CERM, 220 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
3	C3, C5, C10, C12, C27, C28, C29, C30	8	10uF	GRM21BR61C106KE15L	MuRata	CAP, CERM, 10 µF, 16 V, +/- 10%, X5R, 0805	0805
4	C4, C6, C11, C13	4	0.1uF	GRM155R71A104KA01D	MuRata	CAP, CERM, 0.1 µF, 10 V, +/- 10%, X7R, 0402	0402
5	C7, C8, C14, C15	4	10pF	GRM1555C1H100JA01D	MuRata	CAP, CERM, 10 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
6	C17	1	1uF	GRM155R61A105KE15D	MuRata	CAP, CERM, 1µF, 10V, +/-10%, X5R, 0402	0402
7	C18	1	22uF	GRM31CR61A226KE19L	MuRata	CAP, CERM, 22µF, 10V, +/-10%, X5R, 1206	1206
8	C19, C24	2	4.7uF	CGB3B1X5R1A475K055AC	TDK	CAP, CERM, 4.7 µF, 10 V, +/- 10%, X5R, 0603	0603
9	C21	1	6.8uF	C1608X5R1E685K080AC	TDK	CAP, CERM, 6.8 µF, 25 V, +/- 10%, X5R, 0603	0603
10	C22	1	4.7uF	C0603C475K8PACTU	Kemet	CAP, CERM, 4.7µF, 10V, +/-10%, X5R, 0603	0603
11	C23	1	1uF	GRM188R71A105KA61D	MuRata	CAP, CERM, 1µF, 10V, +/-10%, X7R, 0603	0603
12	C25, C26	2	10uF	GRM21BR71A106KE51L	MuRata	CAP, CERM, 10µF, 10V, +/-10%, X7R, 0805	0805
13	C31	1	1uF	GRM188R61C105KA93D	MuRata	CAP, CERM, 1 µF, 16 V, +/- 10%, X5R, 0603	0603
14	C32	1	1uF	GRM188R61A105KA61D	MuRata	CAP, CERM, 1 µF, 10 V, +/- 10%, X5R, 0603	0603
15	D1, D4	2	Super Red	150060SS75000	Würth Elektronik eiSos	LED, Super Red, SMD	LED_0603
16	D2, D5	2	Green	150060VS75000	Würth Elektronik eiSos	LED, Green, SMD	LED_0603
17	D3, D6	2	Yellow	150060YS75000	Würth Elektronik eiSos	LED, Yellow, SMD	LED_0603
18	D7, D8	2	30V	RB520S30,115	NXP Semiconductor	Diode, Schottky, 30 V, 0.2 A, SOD-523	SOD-523
19	J1, J4, J7, J16, J17, J23	6		61300211121	Würth Elektronik	Header, 2.54 mm, 2x1, Gold, TH	Header, 2.54mm, 2x1, TH
20	J9, J10	2		SBH11-PBPC-D07-RA-BK	Sullins Connector Solutions	Header (Shrouded), 2.54 mm, 7x2, Gold, R/A, TH	Header (Shrouded), 2.54 mm, 7x2, R/A, TH
21	J11, J18	2		TSW-103-08-G-S-RA	Samtec	Header, 100mil, 3x1, Gold, R/A, TH	3x1 R/A Header
22	J13, J14, J20, J21	4		SSW-110-23-F-D	Samtec	Connector, Receptacle, 100mil, 10x2, Gold plated, TH	10x2 Receptacle
23	J15, J19, J22, J24	4		61300311121	Würth Elektronik	Header, 2.54 mm, 3x1, Gold, TH	Header, 2.54mm, 3x1, TH
24	L1	1	15uH	VLF302515MT-150M	TDK	Inductor, Shielded, Ferrite, 15 µH, 0.56 A, 0.275 ohm, SMD	IND_3x1.5x3mm
25	L2, L3	2	1000 ohm	742792662	Würth Elektronik	Ferrite Bead, 1000 ohm @ 100 MHz, 0.6 A, 0603	0603
26	R1, R2, R5, R8, R25	5	2.00Meg	CRCW06032M00FKEA	Vishay-Dale	RES, 2.00 M, 1%, 0.1 W, 0603	0603
27	R3, R4	2	1.0k	CRCW06031K00JNEA	Vishay-Dale	RES, 1.0 k, 5%, 0.1 W, 0603	0603
28	R6, R7	2	1.50k	CRCW06031K50FKEA	Vishay-Dale	RES, 1.50 k, 1%, 0.1 W, 0603	0603
29	R9, R10, R11, R13, R14, R15	6	470	CRCW0402470RJNED	Vishay-Dale	RES, 470, 5%, 0.063 W, 0402	0402
30	R12, R16	2	47k	CRCW040247K0JNED	Vishay-Dale	RES, 47 k, 5%, 0.063 W, 0402	0402
31	R17	1	1.00k	CRCW04021K00FKED	Vishay-Dale	RES, 1.00k ohm, 1%, 0.063W, 0402	0402
32	R20, R21	2	499k	CRCW0402499KFKED	Vishay-Dale	RES, 499k ohm, 1%, 0.063W, 0402	0402
33	R22	1	1.8Meg	CRCW06031M80FKEA	Vishay-Dale	RES, 1.8 M, 1%, 0.1 W, 0603	0603
34	R23	1	1.30Meg	CRCW06031M30FKEA	Vishay-Dale	RES, 1.30 M, 1%, 0.1 W, 0603	0603
35	R24	1	576k	CRCW0603576KFKEA	Vishay-Dale	RES, 576 k, 1%, 0.1 W, 0603	0603
36	R26	1	499k	CRCW0603499KFKEA	Vishay-Dale	RES, 499 k, 1%, 0.1 W, 0603	0603
37	R27	1	255k	CRCW0603255KFKEA	Vishay-Dale	RES, 255 k, 1%, 0.1 W, 0603	0603
38	S1, S2, S3, S4, S5, S6	6		434121025816	Würth Elektronik eiSos	Switch, Tactile, SPST, 12 V, SMD	SMD, 6x3.9mm
39	SH-22, SH-J1, SH-J4, SH-J7, SH-J15, SH-J16, SH-J17, SH-J19, SH-J23, SH-J24	10	1x2	969102-0000-DA	3M	Shunt, 100mil, Gold plated, Black	Shunt
40	T1	1	400 uH	750315155	Würth Elektronik eiSos	Transformer, 400 uH, SMT	SMD, Body 8.26x6.6mm
41	T2	1	1.8 mH	750315504	Würth Elektronik	Transformer, 1.8 mH, SMT	8.38x7.87mm
42	U1, U2	2		MSP430FR5969IRGZ	Texas Instruments	Mixed Signal Microcontroller, RGZ0048B	RGZ0048B
43	U3	1		TPS60402DBV	Texas Instruments	UNREGULATED 60-mA CHARGE PUMP VOLTAGE INVERTER, DBV0005A	DBV0005A
44	U4	1		TPS62125DSGR	Texas Instruments	3V-17V, 300mA Step Down Converter With Adjustable Enable Threshold And Hysteresis, DSG0008A	DSG0008A
45	U5	1		TPS715A33DRVR	Texas Instruments	Single Output LDO, 80 mA, Fixed 3.3 V Output, 2.5 to 24 V Input, with Low IQ, 6-pin SON (DRV), -40 to 85 degC, Green (RoHS & no Sb/Br)	DRV0006A
46	Y1, Y2	2		MS3V-T1R 32.768KHZ +/-20PPM 12.5PF	Micro Crystal AG	Crystal, 32.768kHz, 12.5pF, SMD	1.4x1.4x5.0mm SMD
47	C9, C16	0	2200pF	GRM155R70J222KA01D	MuRata	CAP, CERM, 2200 pF, 6.3 V, +/- 10%, X7R, 0402	0402
48	C20	0	560pF	GRM155R71H561KA01D	MuRata	CAP, CERM, 560pF, 50V, +/-10%, X7R, 0402	0402
49	FID1, FID2, FID3	0	N/A	N/A	N/A	Fiducial mark. There is nothing to buy or mount.	N/A
50	H1, H2, H3, H4	0		NY PMS 440 0025 PH	B&F Fastener Supply	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	Screw
51	H5, H6, H7, H8	0		1902C	Keystone	Standoff, Hex, 0.5"L #4-40 Nylon	Standoff
52	J2, J3, J5, J6, J8	0		61300111121	Würth Elektronik	Header, 2.54 mm, 1x1, Gold, TH	Header, 2.54 mm, 1x1, TH
53	R19	0	10.0	CRCW040210R0FKED	Vishay-Dale	RES, 10.0 ohm, 1%, 0.063W, 0402	0402

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.