

Bill of Materials
TI DESIGNS TIDA - 00222

Qty	Reference	Part Description	Manufacturer	Manufacturer Part Number	PCB Footprint	DNIE
1	!PCB1	Printed Circuit Board	Any	TIDA-00222		
2	C1, C7	CAP, CERM, 1uF, 16V, +/-10%, X7R, 0603	TDK	C1608X7R1C105K	0603	
2	C2, C13	CAP, CERM, 0.1uF, 50V, +/-10%, X7R, 0603	Kemet	C0603C104K5RACTU	0603	
13	C3, C4, C10, C12, C14, C39, C45, C48, C51, C52, C53, C54, C57	CAP, CERM, 0.1uF, 25V, +/-5%, X7R, 0603	AVX	06033C104JAT2A	0603	
2	C5, C6	CAP, CERM, 0.01uF, 25V, +/-5%, COG/NPO, 0603	TDK	C1608COG1E103J	0603	
3	C8, C9, C16	CAP, CERM, 100pF, 50V, +/-1%, COG/NPO, 0603	AVX	06035A101FAT2A	0603	
2	C11, C15	CAP, CERM, 12pF, 50V, +/-5%, COG/NPO, 0603	AVX	06035A120JAT2A	0603	
1	C17	CAP, TA, 4.7uF, 35V, +/-10%, 1.9 ohm, SMD	Vishay-Sprague	293D475X9035C2TE3	6032-28	
7	C18, C19, C20, C21, C22, C23, C24	CAP, CERM, 0.015uF, 50V, +/-10%, X7R, 0805	AVX	08055C153KAT2A	0805_HV	
14	C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38	CAP, CERM, 47pF, 500V, +/-5%, COG/NPO, 0805	MuRata	GRM21A5C2E470JW01D	0805_HV	
0	C40, C43	CAP, CERM, 0.1uF, 25V, +/-5%, X7R, 0603	AVX	06033C104JAT2A	0603	DNI
3	C41, C42, R66	RES 0.0 OHM 1/10W JUMP 0603 SMD	Vishay-Dale	CRCW06030000Z0EA	0603	
5	C44, C49, C50, C55, C56	CAP, CERM, 4.7uF, 10V, +/-10%, X5R, 0603	AVX	0603ZD475KAT2A	0603	
2	C46, C47	CAP, CERM, 0.47uF, 25V, +/-10%, X7R, 0603	MuRata	GRM188R71E474KA12J	0603	
2	D1, D2	LED, 5MM, RED, TH	VISHAY	TLHR6405	LED_5MM	
1	D3	LED SmartLED Green 570NM	OSRAM	LG L29K-G2J1-24-Z	LED0603AA	
1	D4	Diode, Switching, 200V, 0.2A, SOT-23	Diodes Inc.	BAS21-7-F	SOT-23	
1	D5	DIODE ZENER 3.9V 500MW SOD123	Diodes Incorporated	MMSZ5228B-7-F	sod-123	
2	FB1, FB3	FERRITE BEAD, 42 OHM, 4 A, DCR0.008 OHM, SMT-0805	TAIYO YUDEN	FBMJ2125HS420-T	0805_hv	
1	FB2	FERRITE CHIP 1000 OHM 300MA 0603	TDK Corporation	MMZ1608B102C	0603	
1	J1	Header, Male 5-pin, 100mil spacing,	TE Connectivity	826926-5	HEADER_5P	
1	J2	Header, TH, 100mil, 12x2, Gold plated, 230 mil above insulator	FCI	67997-424HLF	TSW-112-07-G-D	
1	J3	Header, 8x2, 100mil, TH	FCI	67997-416HLF	TSW-108-07-G-D	
1	J4	Header, Male 2x5-pin, 100mil spacing	FCI	67997-410HLF	HDR2X5	
1	J5	3 pin berger	FCI	68001-403HLF	HDR1X3	
1	J6	Header, 2x2-pin, 100mil spacing	FCI	67997-404HLF	HDR_2X2	
9	J7, J9, J10, J11, J12, J13, J14, J15, J16	TERMINAL BLOCK 5.08MM VERT 2POS, TH	On-Shore Technology	ED120/2DS	CONN_ED120-2DS	
1	J8	Header, 7x2, 100mil, SMT	Molex	N2514-6002-RB	3M_N2514-6002-RB	

Qty	Reference	Part Description	Manufacturer	Manufacturer Part Number	PCB Footprint	DNIe
2	Q1, Q2	MOSFET, N-CH, 30V, 22A, SON 2X2 MM	TEXAS INSTRUMENTS	CSD17571Q2	SON_CSD17571 Q2	
6	R1, R2, R62, R63, R68, R69	RES, 2.2k ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW06032K20JNEA	0603	
3	R3, R4, R16	RES, 300 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW0603300RJNEA	0603	
6	R5, R8, R13, R17, R23, R24	RES 10K OHM 1/10W 5% 0603 SMD	Vishay-Dale	CRCW060310K0JNEA	0603	
4	R6, R7, R22, R29	RES, 100 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603100RFKEA	0603	
2	R9, R92	RES 390K OHM 1/10W 1% 0603 SMD	Vishay Dale	CRCW0603390KFKEA	0603	
2	R10, R91	RES, 200k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603200KFKEA	0603	
0	R11	RES 2.40K OHM 1/8W 1% 0805 SMD	Vishay-Dale	CRCW08052K40FKEA	0805_hv	DNI
1	R12	RES 2.40K OHM 1/8W 1% 0805 SMD	Vishay-Dale	CRCW08052K40FKEA	0805_hv	
4	R14, R15, R18, R19	RES, 100k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603100KFKEA	0603	
4	R20, R25, R27, R28	RES, 332k ohm, 1%, 0.125W, 0805	Vishay-Dale	CRCW0805332KFKEA	0805_HV	
1	R21	RES, 47k ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW060347K0JNEA	0603	
1	R26	RES, 30k ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW060330K0JNEA	0603	
1	R30	RES, 470 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW0603470RJNEA	0603	
1	R31	RES, 10.0k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060310K0FKEA	0603	
1	R32	RES 1.00M OHM 1/10W 1% 0603 SMD	Vishay-Dale	CRCW06031M00FKEA	0603	
14	R33, R34, R35, R36, R37, R38, R39, R40, R42, R43, R44, R45, R46, R47	RES, 1.0k ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW06031K00JNEA	0603	
0	R41	RES, 0 ohm, 5%, 0.125W, 0805	Vishay-Dale	CRCW08050000Z0EA	0805_HV	DNI
0	R48, R49, R50, R51, R52, R53, R55	RES, 13.0 ohm, 1%, 0.125W, 0805	Vishay-Dale	CRCW080513R0FKEA	0805_HV	DNI
7	R54, R56, R57, R58, R59, R60, R61	RES, 13.0 ohm, 1%, 0.125W, 0805	Vishay-Dale	CRCW080513R0FKEA	0805_HV	
0	R64, R65, R67	RES 560K OHM 1/10W 1% 0603 SMD	Vishay-Dale	CRCW0603560KFKEA	0603	DNI
20	R70, R71, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90	RES, 0 ohm, 5%, 0.125W, 0805	Vishay-Dale	CRCW08050000Z0EA	0805_HV	
1	R72	RES, 10 ohm, 5%, 0.125W, 0805	Vishay-Dale	CRCW080510R0JNEA	0805_HV	
1	S1	Switch, Tactile, SPST-NO, 0.1A, 16V, SMT	Bourns	7914G-1-000E	SW_7914G-1-000E	
1	U1	IC, 300-mA 40-V LOW-DROPOUT REGULATOR WITH 25-uA QUIESCENT CURRENT	TI	TPS7A6533QKVURQ1	KVU_1	
1	U2	LOW-VOLTAGE RAIL-TO-RAIL OUTPUT OPERATIONAL AMPLIFIERS, PW0014A	Texas Instruments	OPA4314AIPW	PW0014A_N	
1	U3	IC, MCU 16BIT 512KB FLASH, LQFP-128	TEXAS INSTRUMENTS	MSP430F6779IPEU	QFP50P1600X22 00X160-128N	
1	U4	IC, Micropower Shunt Voltage Reference 100 ppm/°C, 45µA-12mA, Adjustable	TI	LM4041BIDBZ	SOT-23	
1	Y1	CRYSTAL, 32.768KHz, 6PF, +/- 20PPM, SMD-3P	CITIZEN	CMR200T-32.768KDZBT	XTAL_CMR200T	

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.