

# Bill of Materials

TI DESIGNS

TIDM-3PHMETER-ROGOWSKI

Qty	Value	Digikey #	Description	Eagle Library Package	Board Designator
1	24C02CSN	24LC02B-I/SN-ND	IC EEPROM 2KBIT 400KHZ 8S	24C02CSN	IC1
1	32.768 KHZ	300-8341-1-ND	CRYSTAL 32.768 KHZ 6PF SM	LF Crystal	XT1
2	12pF	311-1059-1-ND	CAP CER 12PF 50V 5% NPO	C-EUC0603	C37 C40
4	1nF	399-1136-1-ND	CAP CER 0.001UF 50V 10% X	C-EUC0805	C65 C76 C81 C86
3	15nF	311-1143-1-ND	CAP CER 0.015UF 50V 10% X	C-EUC0805	C8 C10 C12
16	47nF	399-8092-1-ND	CAP CER 0.047UF 25V Y5V 060	C-EUC0805	C17 C19 C5 C7 C16 C18 C20 C64 C77 C78 C79 C80 C82 C83 C84 C85
9	100nF	311-1343-1-ND	CAP CER 0.1UF 50V Y5V 060	C-EUC0603	C23 C25 C27 C28 C30 C31 C33 C36 C43
7	0.1uF	311-1343-1-ND	CAP CER 0.1UF 50V Y5V 060	C-EUC0603	C41 C42 C52 C53 C54 C57 C59
2	0.47uF	311-1428-1-ND	CAP CER 0.47UF 16V 10% X7	C-EUC0603	C38 C44
9	4.7uF	311-1455-1-ND	CAP CER 4.7UF 10V 10% X5R	C-EUC0603	C22 C24 C26 C29 C32 C34 C35 C51 C49
6	47pF	311-1484-1-ND	CAP CER 47PF 500V 5% NPO	C-EUC0805	C1 C2 C3 C9 C11 C13
1	10uF	399-3685-1-ND	CAP TANT 10UF 6.3V 20% 12	CPOL-USCT3216	C55 C56 C58
1	4.7uF/400V	399-6097-ND	CAP ALUM 4.7UF 400V 20% R	CPOL-USE5-10.5	C100
8	2x1 0.1 Header	3M9447-ND	CONN HEADER VERT SGL 2P	JP1E	ACT JP2 JP11 JP12 REACT RX_EN TX_EN HD1
8	3x1 0.1 Header	3M9448-ND	CONN HEADER VERT SGL 3P	JP2E	JP3 JP4 JP5 JP6 JP7 JP8 JP9 JP10 AUXVCC3
8	5x1 0.1 Header	961105-6404-AR	CONN HEADER VERT SGL 5P	MA05-1	SV2
3	4x1 0.1 Header	3M9449-ND	CONN HEADER VERT SGL 4P	MA04-1	DGND DVCCs
1	2x2 0.1 Header	A106735-ND	CONN HEADER VERT DUAL	JP2Q	SV1
4	S20K275	495-1417-ND	VARISTOR 275V RMS 20MM	S20K275	R1 R2 R3
2	Orange	511-1245-ND	LED 3.1MM 610NM ORANGE	LED3MM	LED_3 LED_4
2	Green	511-1247-ND	LED 3.1MM 563NM GREEN T	LED3MM	LED_1 LED_6
2	Red	511-1249-ND	LED 3.1MM 650NM RED TRAN	LED3MM	LED_ACT LED_REACT
2	Yellow	511-1251-ND	LED 3.1MM 585NM YELLOW T	LED3MM	LED_2 LED_5
2	BC857BSMD	568-6094-1-ND	TRANSISTOR PNP 45V 100M	BC857BSMD	Q1 Q2
1	TFBS4711-TT1	751-1068-1-ND	TXRX IRDA 115.2KBIT 1.9MM	TFBS4711-TT1	IRDA
1	RS-232 Connector	A32036-ND	CONN D-SUB RCPT STR 9PO	F09VP	RS1

Qty	Value	Digikey #	Description	Eagle Library Package	Board Designator
4	LL103A	LLSD103ADICT-ND	DIODE SCHOTTKY 40v 350M	D-SOD-80	D24 D25 D26 D27
1	JTAG	MHC14K-ND	CONN HEADER 14 POS STR	ML14	JTAG
6	EXCML20A	P10191CT-ND	BEAD CORE 4A 100 MHZ 080	EXCELSA390805	L1 L3 L5 L6
1	150uF	P14374-ND	CAP ALUM 150UF 10V 20% R	CPOL-EUE2-5	C101
4	Switch	P8079SCT-ND	SWITCH TACTILE SPST-NO 0	PB	BTN1 BTN2 BTN3 BTN4 RESET
2	TIL191	PS2501-1A-ND	OPTOCOUPLER 1CH TRANS	TIL191	OPTO1 OPTO2
2	PS8802	PS8802-1-F3-AXCT-ND	OPTOISOLATOR ANALOG HS	PS8802	U1 U2
1	68Ω	RMCF0603FT68R0CT-ND	RES TF 68 OHM 1% 0.1W 060	R-EU_R0603	R65
8	100Ω	RMCF0603JT100RCT-ND	RES 100 OHM 1/10W 5% 0603	R-EU_R0603	R54 R55 R56 R57 R58 R59 R60 R61
2	1kΩ	RMCF0603JT1K00CT-ND	RES 1K OHM 1/10W 5% 0603	R-EU_R0603	R62 R68 R72 R78
1	1.5kΩ	RMCF0603JT1K50CT-ND	RES 1.5K OHM 1/10W 5% 060	R-EU_R0603	R67
1	220Ω	RMCF0603JT220RCT-ND	RES 220 OHM 1/10W 5% 0603	R-EU_R0603	R64
2	2.2kΩ	RMCF0603JT2K20CT-ND	RES 2.2K OHM 1/10W 5% 060	R-EU_R0603	R69 R71
1	330Ω	RMCF0603JT330RCT-ND	RES 330 OHM 1/10W 5% 0603	R-EU_R0603	R48
1	47kΩ	RMCF0603JT47K0CT-ND	RES 47K OHM 1/10W 5% 0603	R-EU_R0603	R51
1	47Ω	RMCF0603JT47R0CT-ND	RES 47 OHM 1/10W 5% 0603	R-EU_R0603	R47
18	0Ω	RMCF0603ZT0R00CT-ND	RES 0.0 OHM 1/10W 0603 SM	R-EU_R0603	R73 R74 R75 R76 R77 R79 R80 R81 R82 R83 R84 R85 R86 R87 R88 R89 R90 R91
5	560kΩ	RMCF0603FT560KCT-ND	RES TF 560K OHM 1% 0.125	R-EU_R0603	R42 R43 R46
4	100kΩ	RMCF0603JT100KCT-ND	RES 100K OHM 0.1W 5% 0805	R-EU_R0603	R49 R50 R52 R53
3	10kΩ	RMCF0603JT10K0CT-ND	RES 10K OHM 0.1W 5% 0805	R-EU_R0603	R40 R41 R63
1	10Ω	RMCF0805JT10R0CT-ND	RES 10 OHM 1/8W 5% 0805 S	RES0805	R36
8	12kΩ	311-12.0KCRCT-ND	RES 12k OHM 1/8W 5% 0805 S	RES0805	R22 R26 R29 R104 R122 R125 R128 R131
16	4.3kΩ	311-4.3KARCT-ND	RES 4.3k OHM 1/8W 5% 0805 S	RES0805	R21 R23 R27 R28 R30 R31 R105 R106 R123 R124 R126 R127 R129 R130 R132 R133
6	1kΩ	RMCF0805JT1K00CT-ND	RES 1.0K OHM 1/8W 5% 0805	RES0805	R14 R16 R18 R32 R33 R34
3	2.37kΩ	RMCF0805FT2K37CT-ND	RES 2.37K OHM 1/8W 1% 080	RES0805	R15 R17 R19
9	330kΩ	RMCF0805JT330KCT-ND	RES 330K OHM 1/8W 5% 0805	RES0805	R5 R6 R7 R8 R9 R10 R11 R12 R13
7	0Ω	RMCF0805ZT0R00CT-ND	RES 0.0 OHM 1/8W 0805 SMD	RES0805	R4 R39 R99 R100 R101 R102 R103
2	EM Connector	Must Order From Samtec	CONN HEADER 20POS 1.27M	TFM-110-02-SM-D-A-K	RF1 RF2
1	SMAJ5.0ABCT	SMAJ5.0ABCT-ND	DIODE TVS 5.0V 400W UNI 5	DIODE-DO214AC	ZD3
4	SMAJ5.0CA	SMAJ5.0CABCT-ND	DIODE TVS 5.0V 400W BI 5%	SMAJ5.0CA	TVS1 TVS2 TVS3 TVS4
1	SL127L6TH		Mill-Max 850-10-006-20-001000	SL127L6TH	EZ-RF
1	TI_160SEG_LCD	Not on Digikey	Custom LCDs for TI EVMs	TI_160SEG_LCD	LCD1
	DNP			R-EU_R0603	R44 R45
	DNP			DNP	C63
1	DNP			R-EU_R0603	R66

Qty	Value	Digikey #	Description	Eagle Library Package	Board Designator
1	DNP			R-EU_R0603	R70
1	CUI_XR	102-1801-ND	Isolated Power Supply, 3.3 V, 700mA	CUI_XR	U\$1
1	MSP430F67791AIPEU	MSP430F67791AIPEUR-ND	MSP430F67791A Chips	PEU128	MSP430F67791
1	100uF	1189-1020-ND	CAP Electrolytic 100uF 100V 2	10 mm x 20 mm, 5 mm leads	C102
3	0.22uF	495-2320-ND	CAP poly 0.22uF 305VAC/630V	18 mm x 7 mm, 15 mm leads	C39 C46 C50
1	2.2uF	445-4497-2-ND	CAP Ceramic 2.2uF 100V X7R	1210	C48
1	0.01uF	445-5100-1-ND	CAP CER 10000PF 25V 10% X	603	C45
1	47uF	587-1383-1-ND	CAP Ceramic 47uF 10V X5R 1	1210	C62
1	0.1uF	399-1095-1-ND	CAP Ceramic 0.1uF 10V X5R 0	603	C47
1	.056uF	490-6433-1-ND	CAP Ceramic .056uF 25V X7R	603	C60
1	100pF	399-6841-1-ND	CAP Ceramic 100pF 25V NPO,	603	C61
1	B160	641-1107-1-ND	Diode Schottky 1A 60V B160 S	SMB	D23
3	48V	1N4757ADICT-ND	Diode Zener 51V 1W 1N4757A	DO-41	D17 D19 D21
3	1N4007	1N4007FSCT-ND	DIODE GEN PURPOSE 1000V	DO-41	D18 D20 D22
1	1mH	Must order from Manufacturer(CoilCraft), Instead of Digikey	Inductor, SMT, MSS1038-105	0.402 x 0.394 inch	L7
1	1MΩ	A102234CT-ND	RES 1M OHM 1/16W 0.1% 0603	603	R35,R38
1	33.2kΩ	RNCS0603BKE33K2CT-ND	RES 33.2K OHM 1/16W .1% 06	603	R37
1	22.1kΩ	A102241CT-ND	RES 22.1K OHM 1/16W 1% 06	603	R95
1	51.1Ω	A102292TR-ND	RES 51.1 OHM 1/16W 1% 060	603	R96
1	31.6kΩ	A102261DKR-ND	RES 31.6K OHM 1/16W 1% 06	603	R97
1	10.0kΩ	A102331CT-ND	RES 10.0K OHM 1/16W 0.1% 0	603	R98
3	100Ω	P100W-2BK-ND	RES 100 OHM 2W 5% AXIAL	12 mm length, 4 mm diameter	R92 R93 R94
1	TPS54060ADGQ	296-30339-5-ND	IC REG BUCK ADJ 0.5A 10MS	MSOP-10	U3

## 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.