

# Bill of Materials

TI DESIGNS

TIDM-BIDIR-400-12

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint	Note
1	1	C:C1	22uF	CAP CER 22UF 25V 10% X5R 1206	Murata	GRM31CR61E226KE15L			
2	3	C:C2-4	330uF	CAP ALUM 330UF 20% 25V RADIAL	Panasonic	ECA-1EM331			
3	1	C:C5	10uF	CAP CER 10UF 25V 10% X7R 1206	Taiyo Yuden	TMK316B7106KL-TD			
4	1	C:C6	100nF	CAP CER 0.1UF 25V 10% X7R 0805	Kemet	C0805C104K3RACTU			
5	1	C:C7	4.7uF	CAP CER 4.7UF 25V 10% X7R 0805	Taiyo Yuden	TMK212AB7475KG-T			
6	1	C:JP1	CONN_PWR_JACK_2.1	CONN PWR JACK 2.1X5.5MM HIGH CUR	CUI Inc.	PJ-002AH			
7	6	C:JPG1 E:J2-3 E:JPG1 F:JPG1	HEADER_1X2_100	CONN HEADER 50POS .100" SGL GOLD	Samtec Inc.	Standard	TSW-150-07-L-S		
8	2	C:LD1 E:LD1	LED_GREEN	LED GREEN 0805 SMD, Diffused	Standard	Standard			
9	1	C:M1	PTH08080WAH	MODULE PIP .9-5.5V 2.25A HORZ TH	Texas Instruments Inc.	PTH08080WAH			
10	1	C:R1	330ohm	RES 1/8W 1% 0805 SMD	Standard	Standard			
11	1	C:R2	470ohm	RES 1/8W 1% 0805 SMD	Standard	Standard			
12	1	C:SW1	TOGGLE_SWITCH	SWITCH TOGGLE SPDT 5A 120V	C&K Components	7101SD9CQE			
13	1	C:U1	IC_LDO	IC LDO REG 3.3V 500MA SOT223-6	Texas Instruments Inc.	TPS79533DCQR			
14	1	C1	220nF	CAP CER 0.22UF 100V 10% X7R 1206	AVX Corporation	12061C224KAZ2A			
15	1	C13	1000pF	CAP CER 1000PF 500V 10% RADIA	Vishay BC	D102K25Y5PL63L6R			
16	6	C14-16 C18 C27 C29	1 uF	CAP CER 1UF 50V 10% X7R 0805	Kemet	C0805C105K5RACTU			
17	1	C17	6.8nF	CAP CER 6800PF 100V 10% X7R 0805	AVX Corporation	08051C682KAT2A			
18	1	C19	22uF	CAP ALUM 22UF 20% 35V RADIAL	Panasonic	ECA-1VM220			
19	1	C2	0.47uF	CAP FILM 0.47UF 20% 300VAC RAD	Panasonic	ECQ-U3A474MG			
20	2	C20-21	1uF	CAP CER 1UF 100V 10% X7R 1210	TDK Corporation	C3225X7R2A105K200AA			
21	3	C22 C26 C33	3.3nF	CAP CER 3300PF 100V 10% X7R 0805	AVX Corporation	08051C332KAT2A			
22	1	C23	330pF	CAP CER 330PF 50V 10% X7R 0805	Kemet	C0805C331K5RACTU			
23	1	C24	220pF	CAP CER 220PF 50V 10% X7R 0603	Kemet	C0603C221K5RACTU			
24	16	C25, C31, E:C3-4, E:C8-19	100nF	CAP CER 0.1UF 16V 10% X7R 0603	AVX Corporation	0603YC104KAT2A			
25	1	C3	10uF	CAP ALUM 10UF 20% 450V RADIAL	Panasonic	EEU-ED2W100			
26	1	C30	0.1uF	CAP CER 0.1UF 200V 10% X7R 2220	Kemet	C2220X104K2RAC7800			
27	3	C34 F:C2-3	1uF	CAP CER 1UF 16V 10% X7R 0805	Kemet	C0805C105K4RACTU			
28	5	C4-8	1500uF	CAP ALUM 1500UF 20% 16V RADIAL	United Chemi-Con	EKY-160ELL152MJ30S			
29	5	C9-12 C28	1uF	CAP CER 1UF 25V 10% X7R 1206	Kemet	C1206C105K3RACTU			
30	7	D1 D14-19	D-BAT54	DIODE SCHOTTKY 30V 200MA SOT23-3	Diodes Incorporated	BAT54-7-F			
31	4	D7, D8, D12, D13	D-ZENER	DIODE ZENER 12V 500MW SOD123	ON Semiconductor	MMSZ5242BT1G			
32	3	D20 D23-24	D-SCHOTTKY	DIODE SCHOTTKY 60V 3A DO214AB	Vishay Semiconductor	SS36-E3/57T			
33	2	D21-22	D-ARRAY	DIODE ARRAY SCHOTTKY 30V SOT23-3	Diodes Incorporated	BAT54STA			
34	4	D2-3 D9-10	D-GEN	DIODE GEN PURP 100V 300MA SOD123	Diodes Incorporated	1N4148W-7-F			
35	4	D25-D28	D-SCHOTTKY	DIODE SCHOTTKY 600V 10A TO220-2	Cree Inc.	C3D10060A			
36	2	D4 D6	D-GEN	DIODE GEN PURP 100V 3A SMB	Diodes Incorporated	ES3BB-13-F			
37	2	D5 D11	D-GEN	DIODE GEN PURP 600V 3A SMC	ON Semiconductor	MURS360T3G			
38	1	E:C1	0.1uF	CAP CER 0.1UF 100V 20% AXIAL	AVX Corporation	SA111E104MAR			
39	3	E:C2 E:C5-6	1uF	CAP CER 1UF 16V 10% X7R 0603	TDK Corporation	C1608X7R1C105K080AC			
40	1	E:C7	2.2uF	CAP CER 2.2UF 16V 10% X5R 0603	Murata Electronics Nor	GRM188R61C225KE15D			

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41	1	E:DA1	D-ARRAY	DIODE ARRAY GP 75V 150MA SOT363	Diodes Incorporated	BAW567DW-7-F			
42	1	E:J1	HEADER_7X2_100	Header, Male, 7x2-pin, 100mil spacing	Standard	Standard			
43	1	E:JP1	CONN_USB_B	Connector Receptacle USB TypeB 2.0 4 Position Th	Mill-Max Manufacturing	897-43-004-90-000000			
44	2	E:L1-2	22uH	FIXED IND 22UH 13MA 350 MOHM SMD	Murata Electronics Nor	LQM21FN220N00L			
45	1	E:R1	470ohm	RES 1/10W 1% 0603 SMD	Standard	Standard			
46	1	E:R2	1K	RES 1/10W 1% 0603 SMD	Standard	Standard			
47	1	E:R3	10K	RES 1/10W 1% 0603 SMD	Standard	Standard			
48	1	E:R4	1M	RES 1/10W 1% 0603 SMD	Standard	Standard			
49	3	E:R5 E:R10-11	2K2	RES 1/10W 1% 0603 SMD	Standard	Standard			
50	1	E:R6	47K	RES 1/10W 1% 0603 SMD	Standard	Standard			
51	2	E:R7 E:R9	27ohm	RES 1/10W 1% 0603 SMD	Standard	Standard			
52	1	E:R8	680ohm	RES SMD 680 OHM 1% 1/10W 0603	Panasonic	ERJ-3EKF6800V			
53	1	E:U1	IC_LOGIC	IC D-TYPE POS TRG SNGL SM8	Texas Instruments Inc.	SN74LVC2G74DCTR			
54	1	E:U2	IC_MEM	IC EEPROM 1KBIT 2MHZ SOT23-6	Microchip Technology	93LC46BT-I/OT			
55	1	E:U3	IC_LDO	IC REG LDO 3.3V 0.2A SOT23-5	Texas Instruments Inc.	TPS73033DBVR			
56	1	E:U4	IC_ISO	DGTL ISO 2.5KV GEN PURP 16SOIC	Texas Instruments Inc.	ISO7242CDW			
57	1	E:U5	IC_COMM	IC USB FS DUAL UART/FIFO 48-LQFP	FTDI, Future Technolog	FT2232D-REEL			
58	1	E:U6	IC_ISO	DGTL ISO 2.5KV GEN PURP 16SOIC	Texas Instruments Inc.	ISO7240CDW			
59	1	E:X1	OSC_6MHz	CER RESONATOR 6.00MHZ SMD	Murata Electronics Nor	CSTCR6M00G53Z-R0			
60	1	F:C1	0.1uF	CAP CER 0.1UF 50V 10% X7R 0805	Kemet	C0805C104K5RACTU			
61	1	F:J1	CON100-3	Header, Male, 3x1-pin, 100mil spacing	Standard	Standard			
62	2	F:R1 F:R3	10ohm	RES 1/8W 1% 0805 SMD	Standard	Standard			
63	6	F:R2 R23 R32 R34 R50-51	1K	RES 1/8W 1% 0805 SMD	Standard	Standard			
64	1	F:U1	IC_ISO_CAN	IC TXRX CAN 5V 8SOP	Texas Instruments Inc.	ISO1050DUBR			
65	1	F:U2	DCH01_4PIN	Isolated DC/DC Converters Mini 1W 3kVDC Isolated	Texas Instruments Inc.	DCH010505SN7			
66	1	F1	FUSE_CLIP-250	Fuse Clip, 5mm x 20mm	Wickmann	0100056H			
67	1	H2	HEADER_DIMM100	DIMM Connectors VERT DIMM SKT 100P	Molex	87630-1001			
68	1	HS	HEATSINK	HEATSINK, 0.65 C/W, ALUMINIUM ALLOY	H S MARSTON	150CN-02000-A-200			
69		HS Assembly	HS_Socket_screw	5/16 Socket head cap screw Std, 18-8 SS, 4-40x5/16	Grainger	6XA42	U51050.011.0031		
70		HS Assembly	HS_Standoff_screw	Metric Machine Screw Pan Phillips M3	B&F Fastener Supply	MPMS 003 0012 PH			
71		HS Assembly	HS_Standoffs	Round Spacer #4 Nylon 1/4"	Bivar Inc.	9911-250			
72	23	J18, J2-9, J1, J11-17, J19-20	HEADER_1X2_100	Header, Male, 1x2-pin, 100mil spacing	Samtec Inc.	Standard	TSW-150-07-L-S		
73	1	JP1	JMP	JUMPER WIRE 0.2" LONG PKG OF 200	3M	923345-02-C			
74	1	L1	33uH	Inductor, 33uH	Vitec Electronics Corp	AF5666AR			
75	1	L2	13uH	Inductor, 13uH, Quad, ±18%	Vitec Electronics Corp	AF5667BR			
76	2	IM1-2	TBLK_15A_2X5.1MM,ED120/2	TERMINAL BLOCK 5.08MM VERT 2POS	On Shore Technology I	ED120/2DS			
77	1	IM3	AUX-SUPPLY	Aux Supply 5W - 400Vin to 12V	Texas Instruments Inc.	PR798			
78	2	IM4-5	CONN_LUG	Lug, Solderless, #2 - #8 AWG, 1/4", Copper	ILSCO	SLU-70			
79	4	Q1-4	FET_650V	MOSFET N-CH 650V 16A TO220-3	Infineon Technologies	IPP60R199CP			
80	3	QS-7	FET_60V	MOSFET N-CH 60V 80A TO-220AB	Fairchild Semiconduct	FDP050AN06A0			
81	1	R1	48.7ohm	RES SMD 48.7 OHM 1% 1/8W 0805	Panasonic	ERJ-6ENF48R7V			
82	1	R11	49.9ohm	Resistor, Chip, 1/10W, 1%	Standard	Standard			
83	4	R18-19 R35 R44	3.01ohm	RES SMD 3.01 OHM 1% 1/8W 0805	Yageo	RC0805FR-073R01L			
84	14	R2 R7 R10 R15-16 R28-31	10.0K	Resistor, Chip, 1/10W, 1%	Standard	Standard			
85	1	R20	2.37K	RES 1/8W 1% 0805 SMD	Standard	Standard			
86	1	R21	9.09K	RES 1/8W 1% 0805 SMD	Standard	Standard			
87	2	R24 R49	R0805,DNP	RES 1/8W 1% 0805 SMD	Standard	Standard			
88	2	R25-26	499ohm	RES SMD 499 OHM 1% 1/4W 1206	Panasonic	ERJ-8ENF4990V			
89	1	R27	0.0005ohm	RESISTOR CS 0.0005 3W 2% 4020	Rhopoint/Isotek	BVS-M-R0005			

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90	5	R3 R5 R12-13 R41	3.01ohm	Resistor, Chip, 1/10W, 1%	Standard	Standard			
91	1	R36	10.0K	RES SMD 10K OHM 1% 1/8W 0805	Vishay Dale	CRCW080510K0FKEA			
92	1	R37	1K	RES 1/10W 1% 0603 SMD	Standard	Standard			
93	1	R38	220ohm	RES 1/10W 1% 0603 SMD	Standard	Standard			
94	1	R39	47K	RES 1/10W 1% 0603 SMD	Standard	Standard			
95	3	R4 R14 R17	1.00M	RES 1/8W 1% 0805 SMD	Standard	Standard			
96	1	R40	4.7ohm	RES 1/8W 5% 0805 SMD	Standard	Standard			
97	1	R47	200ohm	RES 1/8W 1% 0805 SMD	Standard	Standard			
98	1	R48	0ohm	RES 1/8W 1% 0805 SMD	Standard	Standard			
99	1	R6, R52	100K	RES SMD 100K OHM 1% 1W 2512	Panasonic	ERJ-1TNF1003U			
100	2	R8-9	1.00K	Res, Power Metal Strip, 2W, ±5%	Standard	Standard			
101	1	T1	XFMR_PE63587	1:100 Current Transformer, Current Sense	Pulse	PE-63587NL			
102	1	T2	XFMR_AF5551R	12:1, Center-tapped, Main Power Transformer	Vitec Electronics	AF5551R			
103	2	T3-4	XFMR_56PR3362	Transformer, Gate Drive	Vitec Electronics	56PR3362			
104	11	TP3-13	TP	PIN INBOARD .042" HOLE 1000/PKG	Vector Electronics	K24A/M			
105	4	U1-4	UCC27524A	IC, High Speed 2-ch Low Side driver, 8SOIC	Texas Instruments Inc.	UCC27524AQDRQ1			
106	1	U5	OPA345	IC SGL-SUPPLY OPAMP, 3MHz, SOT-23-5	Texas Instruments Inc.	OPA345NA/250			
107	1	U6	D-ARRAY	TVS DIODE 5VWM 16.6VC 6TSOP	ON Semiconductor	NUP4201MR6T1G			

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