

TIDA-010938 DC-DC REV E2 Bill of Materials

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
!PCB	1		TIDA-010938 DC-DC	Any	Printed Circuit Board	
C1, C8, C21, C31, C36, C37, C43, C48, C49, C50, C51, C52, C56, C57, C61, C70, C71, C77, C84, C85, C95, C102, C107, C108, C119, C124, C125, C128, C129, C132, C146, C155	32	0.1uF	06033C104JAT2A	AVX	CAP, CERM, 0.1 uF, 25 V, +/- 5%, X7R, 0603	0603
C2, C30, C224	3	5.6μF	R533R456050P0M	KEMET	5.6 μF Film Capacitor 310V 630V Polypropylene (PP), Metallized Radial	RADIAL
C3, C4, C10, C24	4	2.7μF	C4AKOBU4270A3YJ	Kemet	2.7 μF Film Capacitor 900V Polypropylene (PP), Metallized Radial	RADIAL
C5, C115, C121, C144	4	100uF	UWT1E101MCL1GS	Nichicon	CAP, AL, 100 μF, 25 V, +/- 20%, SMD	6.6x6.6mm
C6, C20, C34, C59, C68, C93	6	10uF	TMK316AB7106KLHT	Taiyo Yuden	CAP, CERM, 10 μF, 25 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1206	1206
C7, C11, C12, C14, C15, C19, C22, C25, C26, C28, C29, C35, C45, C54, C55, C58, C62, C64, C69, C79, C88, C89, C90, C92, C96, C98, C112, C116, C118, C120, C122, C142, C151, C152	34	220pF	GRM188R72A221KA01D	MuRata	CAP CER 220PF 100V X7R 0603	0603
C9, C23	2	6μF	C4AUJBU4600M18J	KEMET	6 μF Film Capacitor 700V Polypropylene (PP), Metallized Radial	RADIAL
C13, C27, C46, C65, C80, C99	6	2.2uF	CGA4J3X7R1E225K125AB	TDK	CAP, CERM, 2.2 uF, 25 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0805	0805
C16	1	0.1uF	GRM188R72A104KA35J	MuRata	CAP, CERM, 0.1 uF, 100 V, +/- 10%, X7R, 0603	0603
C17, C32, C38, C72	4	1uF	TMK107BJ105KA-T	Taiyo Yuden	CAP, CERM, 1 μF, 25 V, +/- 10%, X5R, 0603	0603
C18, C33, C44, C47, C53, C81	6	0.01uF	885012206089	Wurth Elektronik	CAP, CERM, 0.01 μF, 50 V, +/- 10%, X7R, 0603	0603
C39, C73	2	20uF	GRMJN7R61C206ME05	MuRata	CAP, CERM, 20 uF, 16 V, +/- 20%, X5R, 0704	0704
C40, C41, C74, C75	4	10μF	ZRB18AR61E106ME01L	Murata Electronics	10μF ±20% 25V Ceramic Capacitor X5R 0603 (1608 Metric)	0603

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C42, C76	2	330pF	GRM1885C1H331JA01D	MuRata	CAP, CERM, 330 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
C60, C94	2	2.4µF	C4AUJBU4240M1WJ	KEMET	2.4 µF Film Capacitor 700V Polypropylene (PP), Metallized Radial	RADIAL
C63, C66, C103, C104, C105, C109, C123	7	1600pF	GRM1885C1H162JA01D	MuRata	CAP, CERM, 1600 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
C67, C78, C82, C83, C86, C87, C91, C97	8	330pF	C0603C331J5GACTU	Kemet	CAP, CERM, 330 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
C100, C101, C106, C110, C111, C113, C127, C130, C131, C135, C140, C141	12	0.03uF	C1812C303KDGLCAUTO	Kemet	CAP, CERM, 0.1 uF, 1000 V, +/- 10%, X7R, 1812	1812
C114	1	160µF	ALH82D161DD600	KEMET	ALH82, Aluminum Electrolytic, 160 uF, 20%, 600 VDC, -40/+105°C	RADIAL
C117	1	10uF	25SVP10M	Panasonic	CAP, Aluminum Polymer, 10 uF, 25 V, +/- 20%, 0.06 ohm, 8x10 SMD	8x10
C143	1	15µF	C4AQHBU5150P12J	KEMET	15 µF Film Capacitor 600V Polypropylene (PP), Metallized Radial	RADIAL
D1, D3	2		C6D20065G	Wolfspeed	Schottky Diode 650 V 20A Surface Mount TO-263-2	TO263-2
D6, D9	2	16V	BZT52C16-7-F	Diodes Inc.	Diode, Zener, 16 V, 500 mW, AEC-Q101, SOD-123	SOD-123
D11	1		SMBJ5350B-TP	MCC	Zener Diode 13 V 5 W ±5% Surface Mount DO-214AA (SMB)	SMB
D12	1	150V	ES1C-13-F	Diodes Inc.	Diode, Superfast Rectifier, 150 V, 1 A, SMA	SMA
D13, D15, D16	3	Green	150060VS75000	Würth Elektronik	LED, Green, SMD	LED_0603
D14, D17, D18, D19, D20, D21, D22	7		KG DELLS1.22-JGKH-24	Osram Opto	Standard LEDs - SMD Green TOPLED E 1608	0603
FB1, FB2, FB3, FB4, FB5, FB6, FB7, FB9, FB10, FB11, FB12, FB13, FB14	13		MH1608-601Y	Bourns	600 Ohms @ 100 MHz 1 Power, Signal Line Ferrite Bead 0603 (1608 Metric) 1A 200mOhm	0603
FID1, FID2, FID3, FID4, FID5, FID6	6		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	N/A
J1, J4	2		74650073R	Würth Elektronik	Power Element Bush, M3, TH	Power Element Bush, M3, TH
J2, J5, J9, J10	4		FCR7350R	CLIFF Electronic Components	Banana Jack Connector Standard Banana Solder Red	CONN_BANANA_JACK
J3, J7, J11, J12	4		FCR7350B	CLIFF Electronic Components	Banana Jack Connector Standard Banana Solder Black	CONN_BANANA_JACK
J6, J8	2		SHF-112-01-L-D-TH	Samtec	Conn Shrouded Header (4 Sides) HDR 24 POS 1.27mm Solder ST Top Entry Thru-Hole Tube	HDR24
K1	1		G7L-2A-X DC12	Omron	General Purpose Relay DPST-NO (2 Form A) 12VDC Coil Through Hole	PTH_RELAY_52MM5_35MM5
L1, L4	2	120uH	145451	Bourns	PFC Inductor 120uH	PTH_IND_50MM0_50MM0
L2, L5, L7, L10, L11, L14	6		SDEM20161T-4R7MS	Cyntec	4.7µH Unshielded Inductor 1.1A 426mOhm Max 0806 (2016 Metric)	SMD2
L6, L8	2	22uH	SRP1513CA-220M	Bourns	22 µH Shielded Inductor 17 A 13.86mOhm Max Nonstandard	SMD2
L9, L13	2	200uH	145452	Bourns	Inductor	PTH_INDUCTOR_38MM5_60MM0

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L18	1	22uH	145454	Bourns	Inductor 22 µH 10% 5mΩ	PTH12
LBL1	1		THT-14-423-10	Brady	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650 x 0.200 inch
MP1, MP2, MP3, MP4, MP5, MP6, MP7, MP8, MP9, MP11	10		9774015960R	Würth Electronics	Round Spacer Unthreaded Steel 0.059" (1.50mm)	ROUND_SPACER_6 MM0
Q1	1		CSD17318Q2	Texas Instruments	30-V N-Channel NexFET™ Power MOSFET	WSON6
R1, R3, R4, R5, R8, R11, R13, R14, R15, R19, R24, R34, R35, R37, R38, R40, R46, R49, R51, R59, R60, R61, R62, R63, R65, R66, R72, R73, R75, R76, R77, R78, R83, R84, R85, R86, R87, R89, R95, R99, R108, R109, R112, R113, R116, R117, R120, R121, R146, R149, R150, R151, R152, R155, R158, R159	56	56	RG1608P-560-B-T5	Susumu Co Ltd	RES, 56, 0.1%, 0.1 W, 0603	0603
R2, R88	2	1000Ω	PTCEL13R102SBE	Vishay	PTCEL Series 850 V 1 kΩ ±30 % Radial Inrush Current Limiter PTC Thermistor	RADIAL
R6, R16, R32, R45, R57, R70	6	20.0k	RC0603FR-0720KL	Yageo	RES, 20.0 k, 1%, 0.1 W, 0603	0603
R7, R147	2	1.67k	RT0603DRE071K67L	Yageo America	RES, 1.67 k, 0.5%, 0.1 W, 0603	0603
R9, R10, R20, R56, R58, R67, R71, R96	8	10	RT0603BRD0710RL	Yageo America	RES, 10.0, 0.1%, 0.1 W, 0603	0603
R12, R29, R39, R54, R64, R79, R80, R81, R82, R90, R91, R92, R93, R104, R106, R107, R125, R127, R129, R131, R139, R140, R141, R145, R156, R157	26	10.0k	RG1608P-103-B-T5	Susumu Co Ltd	RES, 10.0 k, 0.1%, 0.1 W, 0603	0603

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R17, R18	2	3m	CSS2H-2512K-3L00F	Bourns	Res Metal Strip 2512 0.003 Ohm 1% 4W ±75ppm/C Pad SMD Automotive T/R	2512
R21, R26, R28, R30, R31, R33, R36, R41, R42, R43, R44, R53, R68, R69, R74, R94, R98, R100, R101, R102, R103	21	560k	TNPV1206560KBEEN	Vishay Draloric	RES, 560 k, 0.1%, 1 W, 1206	1206
R22, R25, R47, R50	4	12.0k	ERJ-3EKF1202V	Panasonic	RES, 12.0 k, 1%, 0.1 W, 0603	0603
R23, R48	2	38.8k	RT0603DRE0738K8L	Yageo America	RES, 38.8 k, 0.5%, 0.1 W, 0603	0603
R27, R52	2	4.02k	RT0603BRD074K02L	Yageo America	RES, 4.02 k, 0.1%, 0.1 W, 0603	0603
R105, R132, R133, R135, R136, R138	6	5.6k	RC0603JR-075K6L	Yageo	RES, 5.6 k, 5%, 0.1 W, 0603	0603
R134, R137	2	1.5m	CSS2H-2512K-1L50FE	Bourns	1.5 mOhms ±1% 3W Chip Resistor 2512 (6432 Metric) Automotive AEC-Q200, Current Sense Metal Element	2512
R144	1	1.00k	RNCF0603TKY1K00	Stackpole Electronics Inc	RES, 1.00 k, 0.01%, 0.063 W, 0603	0603
R153	1	499	CRCW0603499RFKEAC	Vishay-Dale	RES, 499, 1%, 0.1 W, 0603	0603
R154	1	218	RT0603DRE07218RL	Yageo America	RES, 218, 0.5%, 0.1 W, 0603	0603
TP1, TP4, TP5, TP6, TP42	5		5001	Keystone Electronics	Test Point, Miniature, Black, TH	Black Miniature Testpoint
U1, U4, U7, U10, U12, U15	6		LMG3522R030Q	Texas Instruments	650-V 30-mΩ GaN FET with Integrated Driver and Protection	VQFN52
U2, U25	2		SN74LVC2G34DBVR	Texas Instruments	Dual Buffer Gate, DBV0006A, LARGE T&R	DBV0006A
U3, U5	2		INA181A2IDBV	Texas Instruments	Bidirectional, Low- and High-Side Measurement, Multichannel, Voltage Output, Current-Sense Amplifier, DBV0006A (SOT-6)	DBV0006A
U6, U11	2		UCC14131QDWNRQ1	Texas Instruments	Automotive 1.5-W, 12-V VIN / 12-VOUT, 15-V VIN / 15-V VOUT, HighDensity, > 5-kVRMS, Isolated DC/DC Module	SSOP36
U8, U13, U17, U18, U19, U20	6		SN74LVC1G08DBVT	Texas Instruments	Single 2-Input Positive-AND Gate, DBV0005A, SMALL T&R	DBV0005A
U9, U14	2		ISO7741FDBQR	Texas Instruments	General Purpose Digital Isolator 5000Vrms 4 Channel 100Mbps 85kV/μs CMTI 16-SSOP (0.154", 3.90mm Width)	SSOP-16
U16	1		OPA2388IDR	Texas Instruments	Precision, Zero-Drift, Zero-Crossover, True Rail-to-Rail, Input/Output Operational Amplifiers	SOIC8
U21, U22	2		AMC1302DWV	Texas Instruments	Precision Reinforced Isolated Amplifier for Current Sensing, DWV0008A (SOIC-8)	DWV0008A
U23, U26	2		OPA388IDR	Texas Instruments	Precision, Zero-Drift, Zero-Crossover, True Rail-to-Rail Input/Output, Operational Amplifier, D0008A (SOIC-8)	D0008A