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11/27/2023 7:03 PM

010933

TIDA-010933-DCDC REV E1 Bill of Materials

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
IPCB	1		TIDA-010933-DCDC	Any	Printed Circuit Board	
C1_A, C1_B, C1_C, C1_D, C4, C6_A, C6_B, C6_C, C6_D, C7, C14_A, C14_B, C14_C, C14_D	14	10uF	22201C106MAT2A	AVX	CAP, CERM, 10 uF, 100 V, +/- 20%, X7R, 2220	2220
C2, C28	2	10uF	TMK316AB7106KLHT	Taiyo Yuden	CAP, CERM, 10 uF, 25 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1206	1206
C3, C5, C15, C35, C36, C37	6	0.033uF	GRM31CR72E333KW03L	MuRata	CAP, CERM, 0.033 uF, 250 V, +/- 10%, X7R, 1206	1206
C8_A, C8_B, C8_C, C8_D, C9_A, C9_B, C9_C, C9_D, C11_A, C11_B, C11_C, C11_D, C24, C32, C60, C61	16	0.1uF	GRM188R72A104KA35D	MuRata	CAP, CERM, 0.1 uF, 100 V, +/- 10%, X7R, 0603	0603

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C10_A, C10_B, C10_C, C10_D, C33, C47	6	1uF	GRM155R61E105KA12D	MuRata	CAP, CERM, 1 uF, 25 V, +/- 10%, X5R, 0402	0402
C16_A, C16_B, C16_C, C16_D, C34, C48, C91_A, C91_B, C91_C, C91_D, C101, C102	12	0.1uF	GRM155R71E104KE14D	MuRata	CAP, CERM, 0.1 uF, 25 V, +/- 10%, X7R, 0402	0402
C17_A, C17_B, C17_C, C17_D, C20_A, C20_B, C20_C, C20_D, C21_A, C21_B, C21_C, C21_D	12	0.1uF	885012206020	Wurth Elektronik	CAP, CERM, 0.1 uF, 10 V, +/- 10%, X7R, 0603	0603
C18_A, C18_B, C18_C, C18_D, C26, C70	6	1000pF	CC0603JRNPO8BN102	Yageo	CAP, CERM, 1000 pF, 25 V, +/- 5%, C0G/NP0, 0603	0603

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C19_A, C19_B, C19_C, C19_D, C22_A, C22_B, C22_C, C22_D, C27, C80, C83, C86, C89	13	300pF	GRM1555C1H301JA01D	MuRata	CAP, CERM, 300 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
C23	1	2.2uF	C3225X7R2A225K230AB	TDK	CAP, CERM, 2.2 uF, 100 V, +/- 10%, X7R, 1210	1210
C25, C50, C51, C52, C53, C64, C65, C69, C76, C77, C78	11		CL10B104KB8NNNC	Samsung	CAP CER 0.1UF 50V X7R 0603	0603
C29, C45	2	100pF	GRM1885C1H101JA01D	MuRata	CAP, CERM, 100 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
C30, C44	2	2.2uF	CGA4J3X7R1E225K125AB	TDK	CAP, CERM, 2.2 uF, 25 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0805	0805
C31_A, C31_B, C31_C, C31_D, C41, C42, C46, C49, C71_A, C71_B, C71_C, C71_D, C72, C73, C74, C75	16	22pF	GRM1885C1H220JA01D	MuRata	CAP, CERM, 22 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603

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C38, C39, C40, C43	4	100nF	C1812X104KDRACAU0	Kemet	0.1µF ±10% 1000V (1kV) Ceramic Capacitor X7R 1812 (4532 Metric)	1812
C54, C55, C56, C57	4	1uF	CGA9N3X7R2E105K230KE	TDK	CAP, CERM, 1 µF, 250 V, +/- 10%, X7R, AEC-Q200 Grade 1, 2220	2220
C58, C59	2	0.22uF	GRM188R71C224KA01D	MuRata	CAP, CERM, 0.22 uF, 16 V, +/- 10%, X7R, 0603	0603
C62	1	2200pF	C0603C222K5RAC	Kemet	CAP, CERM, 2200 pF, 50 V, +/- 10%, X7R, 0603	0603
C63, C93	2	22uF	GRM31CR71A226KE15L	MuRata	CAP, CERM, 22 uF, 10 V, +/- 10%, X7R, 1206	1206
C66	1	1uF	885012206026	Wurth Elektronik	CAP, CERM, 1 uF, 10 V, +/- 10%, X7R, 0603	0603
C67	1	1200pF	GRM188R72A122KA01D	MuRata	CAP, CERM, 1200 pF, 100 V, +/- 10%, X7R, 0603	0603
C68	1	56pF	GRM1885C2A560JA01D	MuRata	CAP, CERM, 56 pF, 100 V, +/- 5%, C0G/NP0, 0603	0603
C79, C81, C88, C90	4	200pF	GRM1885C1H201JA01D	MuRata	CAP, CERM, 200 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
C82, C84, C85, C87	4	2000pF	GRM1885C1H202JA01D	MuRata	CAP, CERM, 2000 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
C92, C94	2	300pF	GRM1885C1H301JA01D	MuRata	CAP, CERM, 300 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
C95_A, C95_B, C95_C, C95_D, C96_A, C96_B, C96_C, C96_D, C97, C98, C99, C100	12	0.1uF	GRM155R62A104KE14D	MuRata	CAP, CERM, 0.1 uF, 100 V, +/- 10%, X5R, 0402	0402

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
D1	1	650V	GB01SLT06-214	GeneSiC Semiconductor	Diode, Schottky, 650 V, 1 A, SMB	SMB
D2, D4	2	16V	BZT52C16-7-F	Diodes Inc.	Diode, Zener, 16 V, 500 mW, AEC-Q101, SOD-123	SOD-123
D3_A, D3_B, D3_C, D3_D	4	12V	BZT52C12T-TP	Micro Commercial Compon	Diode, Zener, 12 V, 200 mW, SOD-523	SOD-523
D5	1	20V	PMEG2010AEH,115	Nexperia	Diode, Schottky, 20 V, 1 A, SOD-123F	SOD-123F
D6, D7	2	40V	1N5819HW-7-F	Diodes Inc.	Diode, Schottky, 40 V, 1 A, SOD-123	SOD-123
FB1	1	1000 ohm	MMZ1608B102CTA00	TDK	Ferrite Bead, 1000 ohm @ 100 MHz, 0.3 A, 0603	0603
FID4, FID5, FID6	3		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	N/A
H1, H2, H3, H4, H5	5		NY PMS 440 0025 PH	B&F Fastener Supply	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	Screw
J1_A, J1_B, J1_C, J1_D	4		282856-2	TE Connectivity	Thermal Block, 5 mm, 2-pole, Tin, TH	TH, 2-Leads, Body 10x10mm, Pitch 5mm
J2	1		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
J3, J4	2		98065	Wurth Elektronik	Power Element Bolt, M3, SMD	Power Element Bolt, M3, SMD
J5	1		HSEC8-160-01-L-DV-A-BL	Samtec	C2000 controlCARD-120HSEC connector, SMT	C2000 pin numbering
J6	1		22284023	Molex	Header, 2.54mm, 2x1, Tin, TH	Header, 2.54mm, 2x1, TH
J7	1		TSW-106-07-G-D	Samtec	Header, 100mil, 6x2, Gold, TH	6x2 Header

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
L1_A, L1_B, L1_C, L1_D	4	10uH	SRP1513CA-100M	Bourns	Inductor Power Shielded Wirewound 10uH 20% 100KHz 40Q-Factor Metal Alloy Powder 25A 0.007Ohm DCR Automotive T/R	SMT_IND_16MM5_15 MM5
L2	1	560nH	SRP1245A-R56M	Bourns	Inductor, Wirewound, 560 nH, 36 A, 0.001 ohm, AEC-Q200 Grade 0, SMD	13.5x12.5mm
L3, L4	2		SDEM20161T-4R7MS	Cyntec	4.7uH Unshielded Inductor 1.1A 426mOhm Max 0806 (2016 Metric)	SMD2
L5	1	10uH	SRN5040TA-100M	Bourns	Inductor, Semi-Shielded, Ferrite, 10 uH, 2.2 A, 0.0672 ohm, AEC-Q200 Grade 1, SMD	Semi-Shielded Power Inductor
L6	1	15uH	SRP6540-150M	Bourns	Inductor, Shielded, Ferrite, 15 uH, 2.9 A, 0.121 ohm, SMD	Inductor, 7.2x4x6.5mm
LBL1	1		TH1-14-423-10	Brady	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650 x 0.200 inch
Q1_A, Q1_B, Q1_C, Q1_D	4	60V	CSD18540Q5B	Texas Instruments	MOSFET, N-CH, 60 V, 100 A, DNK0008A (VSON-CLIP-8)	DNK0008A
R1	1	0	RC0603JR-070RL	Yageo	RES, 0, 5%, 0.1 W, 0603	0603
R2_A, R2_B, R2_C, R2_D	4	0.001	CSS2H-2512R-1L00F	Bourns	RES, 0.001, 1%, 5 W, AEC-Q200 Grade 0, 6.35x3.05mm	6.35x3.05mm
R3, R15, R61_A, R61_B, R61_C, R61_D, R62_A, R62_B, R62_C, R62_D	10	100k	RC0603FR-07100KL	Yageo	RES, 100 k, 1%, 0.1 W, 0603	0603

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R4	1	316k	RC0603FR-07316KL	Yageo	RES, 316 k, 1%, 0.1 W, 0603	0603
R5_A, R5_B, R5_C, R5_D, R11	5	39.2k	RT0603BRD0739K2L	Yageo America	RES, 39.2 k, 0.1%, 0.1 W, 0603	0603
R6_A, R6_B, R6_C, R6_D, R8_A, R8_B, R8_C, R8_D, R12	9	300	ERJ-2RKF3000X	Panasonic	300 Ohms ±1% 0.1W, 1/10W Chip Resistor 0402 (1005 Metric) Automotive AEC-Q200 Thick Film	0402
R7_A, R7_B, R7_C, R7_D, R13	5	1K		Yageo	High Precision-High Stability Chip Resistor Thin Film 0603 1kOhm 0.1% Paper T/R	0603
R9_A, R9_B, R9_C, R9_D, R10_A, R10_B, R10_C, R10_D	8	10.0	RC0603FR-0710RL	Yageo	RES, 10.0, 1%, 0.1 W, 0603	0603
R14	1	226k	RC0603FR-07226KL	Yageo	RES, 226 k, 1%, 0.1 W, 0603	0603
R16	1	73.2k	RC0603FR-0773K2L	Yageo	RES, 73.2 k, 1%, 0.1 W, 0603	0603

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R17, R24, R39, R40, R42, R43, R45, R49, R52, R54, R56, R57, R59, R60, R65	15	10.0k	RT0603BRD0710KL	Yageo America	RES, 10.0 k, 0.1%, 0.1 W, 0603	0603
R18_A, R18_B, R18_C, R18_D, R63_A, R63_B, R63_C, R63_D	8	6.04	CRCW04026R04FKED	Vishay-Dale	RES, 6.04, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R19	1	2.05	CRCW12062R05FKEA	Vishay-Dale	RES, 2.05, 1%, 0.25 W, AEC-Q200 Grade 0, 1206	1206
R20, R28	2	20.0k	RC0603FR-0720KL	Yageo	RES, 20.0 k, 1%, 0.1 W, 0603	0603
R21, R22, R23, R25, R26, R27, R41, R46, R53, R58, R64	11	300	RC0603FR-07300RL	Yageo	RES, 300, 1%, 0.1 W, 0603	0603
R29_A, R29_B, R29_C, R29_D, R30_A, R30_B, R30_C, R30_D	8	10.0k	RC0402FR-0710KL	Yageo America	RES, 10.0 k, 1%, 0.063 W, 0402	0402

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R31, R33, R35, R37, R47_A, R47_B, R47_C, R47_D, R48_A, R48_B, R48_C, R48_D	12	300	CRCW0402300RJNEJ	Vishay-Dale	RES, 300, 5%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R32, R34, R36, R38	4	10.0k	RC0603FR-0710KL	Yageo	RES, 10.0 k, 1%, 0.1 W, 0603	0603
R44, R50	2	15.0k	RT0603BRD0715KL	Yageo America	RES, 15.0 k, 0.1%, 0.1 W, 0603	0603
R51, R55	2	7.50k	RT0603BRD077K5L	Yageo America	RES, 7.50 k, 0.1%, 0.1 W, 0603	0603
R66, R67, R70, R71	4	0	CRCW12060000Z0EAC	Vishay	Jumper 0.25W, 1/4W Chip Resistor 1206 (3216 Metric) - Thick Film	1206
R74	1	10k	TMP6131DYAT	Texas Instruments	±1% tolerance 10kΩ linear thermistor available in 0402 and 0603 package options 2-SOT-5X3 -40 to 125	SOD-523
R75	1	0	RC0402JR-070RP	Yageo	Res Jumper Thick Film 0402 0 Ohm 5% 1/16W Molded SMD Paper T/R	0402
T1	1			Custom	Custom	
T2	1		750316819	Würth Electronics	Forward, Push-Pull Converters For DC/DC Converters SMPS Transformer 2500Vrms Isolation 400kHz Surface Mount	SMT_XFRMR_9MM2 5_9MM30
TP1, TP2	2		5001	Keystone Electronics	Test Point, Miniature, Black, TH	Black Miniature Testpoint

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TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP13, TP14, TP16	10		5015	Keystone Electronics	Test Point, Miniature, SMT	Testpoint_Keystone_Miniature
U1_A, U1_B, U1_C, U1_D, U5, U6	6		LMG2100R044	Texas Instruments	LMG2100R044	VQFN-FCRLF16
U2_A, U2_B, U2_C, U2_D, U4, U13	6		LM321LVDBVR	Texas Instruments	1-Channel Industry Standard Low Voltage Operational Amplifier, DBV0005A (SOT-23-5)	DBV0005A
U3_A, U3_B, U3_C, U3_D	4		INA181A3IDBV	Texas Instruments	Bidirectional, Low- and High-Side Measurement, Multichannel, Voltage Output, Current-Sense Amplifier, DBV0006A (SOT-6)	DBV0006A
U7, U8	2		LMG3522R050Q	Texas Instruments	650-V 30-mΩ GaN FET with Integrated Driver and Protection	VQFN52
U9, U10	2		ISO7741FDBQR	Texas Instruments		SSOP-16
U11	1		LM5164DDAR	Texas Instruments		SOPowerPAD8
U12	1		TLV75533PDRVR	Texas Instruments	500mA LDO, DRV0006A (WSON-6)	DRV0006A
U14	1		SN6505BDBVR	Texas Instruments	Low-Noise 1 A, 420 kHz Transformer Driver, DBV0006A (SOT-23-6)	DBV0006A
U15	1		OPA4388IDR	Texas Instruments	Op Amp Quad Zero Drift Amplifier R-R I/O ±2.75V/5.5V 14-Pin SOIC T/R	SOIC14