Texas Instruments

Bill of Materials

TI DESIGNS
TIDA-00589

bq25895 I2C Controlled Single Cell 5A Fast Charger with MaxChargeTM and 3.1A Boost Operation for Power Bank

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint
1	1	PCB		Printed Circuit Board	Any	PWR655	-	
2	1	C1	1uF	CAP, CERM, 1 µF, 25 V, +/- 10%, X7R, 0805	MuRata	GRM219R71E105KA88D		0805
3	1	C2	10uF	CAP, CERM, 10uF, 25V, +/-10%, X5R, 0805	TDK	C2012X5R1E106K125AB		0805
4	1	C3	4.7uF	CAP, CERM, 4.7uF, 16V, +/-10%, X5R, 0603	MuRata	GRM188R61C475KAAJ		0603
5	1	C4	0.047uF	CAP, CERM, 0.047uF, 25V, +/-10%, X7R, 0402	MuRata	GRM155R71E473KA88D		0402
6	3	C5, C6, C7	10uF	CAP, CERM, 10 µF, 10 V, +/- 10%, X7R, 0805	MuRata	GRM21BR71A106KE51L		0805
7	1	C10	22uF	CAP, CERM, 22 µF, 25 V, +/- 20%, X5R, 0805	MuRata	GRM21BR61E226ME44		0805
8	3	C11, C12, C13	10uF	CAP, CERM, 10uF, 25V, +/-20%, X5R, 0603	MuRata	GRM188R61E106MA73		0603
9	1	C22	0.01uF	CAP, CERM, 0.01uF, 25V, +/-10%, X7R, 0402	TDK	C1005X7R1E103K		0402
10	1	C23	1uF	CAP, CERM, 1uF, 25V, +/-10%, X7R, 0603	TDK	C1608X7R1E105K080AB		0603
11	1	C24	2.2uF	CAP, CERM, 2.2uF, 10V, +/-10%, X5R, 0402	TDK	C1005X5R1A225K050BC		0402
12	2	D3, D4	Green	LED, Green, SMD	Lite-On	LTST-C190GKT		1.6x0.8x0.8mm
13	4	H1, H2, H3, H4		Bumpon, Hemisphere, 0.44 X 0.20, Clear	3M	SJ-5303 (CLEAR)		Transparent Bumpon
14	4	J1, J2, J3, J4	2x1	Conn Term Block, 2POS, 3.81mm, TH	Phoenix Contact	1727010		2POS Terminal Block
15	2	J5, J6		Connector, Receptacle, Micro-USB Type B, R/A, Bottom Mount SMT	Molex	0473460001		7.5x2.45x5mm
16	1	J7		Header (shrouded), 100mil, 5x2, High-Temperature, Gold, TH	3M	N2510-6002-RB		5x2 Shrouded header
17	1	J8		Header, 100mil, 4x1, R/A, TH	Molex	22-05-3041		4x1 R/A Header
18	4	JP1, JP2, JP3, JP4		Header, 100mil, 3x1, Tin plated, TH	Sullins Connector Solutions	PEC03SAAN		Header, 3 PIN, 100mil, Tin
19	6	JP5, JP6, JP7, JP8, JP9, JP10		Header, 100mil, 2x1, Tin plated, TH	Sullins Connector Solutions	PEC02SAAN		Header, 2 PIN, 100mil, Tin
20	1	L1	2.2uH	Inductor, Shielded Drum Core, Powdered Iron, 2.2uH, 8A, 0.018 ohm, SMD	Vishay-Dale	IHLP2020BZER1R0M11		5.49x2x5.18mm
21	1	LBL1		Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	Brady	THT-14-423-10	-	PCB Label 0.650"H x 0.200"W
22	1	R1	130	RES, 130 ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW0402130RFKED		0402
23	1	R2	5.23k	RES, 5.23k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW04025K23FKED		0402
24	1	R3	30.1k	RES, 30.1k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW040230K1FKED		0402
25	8	R4, R5, R6, R8, R14, R15, R20, R24	10.0k	RES, 10.0k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW040210K0FKED		0402
26	3	R9, R11, R12	200	RES, 200 ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW0402200RFKED		0402
27	1	R10	100k	RES, 100k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW0402100KFKED		0402
28	2	R13, R16	0	RES, 0 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW04020000Z0ED		0402
29	1	R18	768	RES, 768 ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW0402768RFKED		0402
30	1	R19	10k	Trimmer, 10k ohm, 0.25W, TH	Bourns	3266W-1-103LF		4.5x8x6.7mm
31	2	R21, R22	2.21k	RES, 2.21k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW04022K21FKED		0402
32	1	R23	4.7k	RES, 4.7k ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW04024K70JNED		0402

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint
33	1	S1		Switch, Normally open, 2.3N force, 200k operations, SMD	C and K Components	KSR221GLFS		KSR
34	1	S2		DIP Switch, SPST, 2Pos, Slide, SMT	Copal Electronics	CVS-02TB		SW, 4.7x1.45x3mm
35	6	SH-JP1, SH-JP2, SH-JP3, SH-JP4, SH-JP9, SH-JP10	1x2	Shunt, 100mil, Gold plated, Black	3M	969102-0000-DA	SNT-100-BK-G	Shunt
36	2	TP2, TP3	Red	Test Point, Miniature, Red, TH	Keystone	5000		Red Miniature Testpoint
37	2	TP4, TP18	Orange	Test Point, Miniature, Orange, TH	Keystone	5003		Orange Miniature Testpoint
38	1	TP5	Yellow	Test Point, Miniature, Yellow, TH	Keystone	5004		Yellow Miniature Testpoint
39	3	TP6, TP7, TP8	SMT	Test Point, Compact, SMT	Keystone	5016		Testpoint_Keystone_Compact
40	12	TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP19, TP20, TP21	White	Test Point, Miniature, White, TH	Keystone	5002		White Miniature Testpoint
41	1	U1		I2C Controlled 5A Single Cell Charger with NVDC Power Path Management and MaxChargeTM High Voltage Adapter Support, RTW0024H	Texas Instruments	BQ25895RTWR	BQ25895RTWT	RTW0024H
42	1	U2		Micropower 150 mA Low-Noise Ultra Low-Dropout Regulator in SOT-23 Package, DBV0005A	Texas Instruments	LP2985AIM5-3.3/NOPB		DBV0005A
43	1	U3		ESD Protected,High-Speed USB 2.0 (480-Mbps) 1:2 Multiplexer / Demultiplexer Switch, 1:2 Mux / Demux, 6 ohm RON, 2.5 to 3.3V, -40 to 85 degC, 10-Pin UQFN (RSE), Green (RoHS & no Sb/Br)	Texas Instruments	TS3USB221ARSER	Equivalent	RSE0010A
44	0	C8, C9, C17, C20	1000pF	CAP, CERM, 1000pF, 25V, +/-5%, C0G/NP0, 0402	TDK	C1005C0G1E102J		0402
45	0	C14	0.1uF	CAP, CERM, 0.1uF, 16V, +/-10%, X7R, 0603	TDK	C1608X7R1C104K		0603
46	0	C15, C16, C19	10uF	CAP, CERM, 10 µF, 10 V, +/- 10%, X7R, 0805	MuRata	GRM21BR71A106KE51L		0805
47	0	C18	1uF	CAP, CERM, 1uF, 16V, +/-10%, X7R, 0603	TDK	C1608X7R1C105K		0603
48	0	C21	0.01uF	CAP, CERM, 0.01uF, 25V, +/-10%, X7R, 0402	TDK	C1005X7R1E103K		0402
49	0	D1	40V	Diode, Schottky, 40V, 0.38A, SOD-523	Diodes Inc.	ZLLS350TA		SOD-523
50	0	D2	20V	Diode, Schottky, 20 V, 1 A, 1.4x0.6x0.31mm	ON Semiconductor	NSR10F20NXT5G		1.4x0.6x0.31mm
51	0	D5	30V	Diode, Schottky, 30 V, 1 A, SOD-123	Diodes Inc.	B130LAW-7-F		SOD-123
52	0	FID1, FID2, FID3		Fiducial mark. There is nothing to buy or mount.	N/A	N/A		Fiducial
53	0	L2	1.5uH	Inductor, Flat Wire, Powdered Iron, 1.5 µH, 3 A, 0.05 ohm, SMD	Bourns	SRP4012-1R5M		4.7x1.2x4.0mm
54	0	R7	10.0k	RES, 10.0k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW040210K0FKED		0402
55	0	R16	0	RES, 0 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW04020000Z0ED		0402
56	0	R17	1.00	RES, 1.00 ohm, 1%, 0.125W, 0805	Vishay-Dale	CRCW08051R00FKEA		0805
57	0	SH-JP5	1x2	Shunt, 100mil, Gold plated, Black	3M	969102-0000-DA	SNT-100-BK-G	Shunt

Notes:
Unless otherwise noted in the Alternate PartNumber and/or Alternate Manufacturer columns, all parts may be substituted with equivalents.

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