

Bill of Materials

TI DESIGNS

TIDA-01093 - 20-Series Battery Management Module

Designator	Quantity	Value	Description	PackageReference	PartNumber	Manufacturer
!PCB1	1		Printed Circuit Board		TIDA-01093	Any
C1, C2, C7, C13, C14, C15, C17, C18, C20, C24, C26, C28, C29, C40, C41, C44, C53, C54, C57, C60, C61, C63, C65, C66, C67, C69, C70, C72, C74, C76	30	1uF	CAP, CERM, 1 µF, 16 V, +/- 10%, X7R, 0805	0805	GRM21BR71C105KA01L	MuRata
C3	1	3300pF	CAP, CERM, 3300 pF, 25 V, +/- 10%, X7R, 0603	0603	GRM188R71E332KA01D	MuRata
C4, C6, C10, C42, C45, C48, C49, C50, C55, C58	10	0.1uF	CAP, CERM, 0.1 µF, 25 V, +/- 10%, X7R, 0603	0603	06033C104KAT2A	AVX
C5, C9, C30, C31	4	10uF	CAP, CERM, 10 µF, 16 V, +/- 20%, X5R, 0805	0805	0805YD106MAT2A	AVX
C8, C23, C25, C71, C73	5	10uF	CAP, CERM, 10 µF, 35 V, +/- 10%, X7R, 1210	1210	GRM32ER7YA106KA12L	MuRata
C11, C27, C59, C62	4	4700pF	CAP, CERM, 4700 pF, 50 V, +/- 10%, X7R, 0805	0805	08055C472KAT2A	AVX
C12, C39, C64	3	4.7uF	CAP, CERM, 4.7 µF, 16 V, +/- 10%, X7R, 0805	0805	GRM21BR71C475KA73L	MuRata
C16, C19	2	12pF	CAP, CERM, 12 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603	06035A120JAT2A	AVX
C21, C68	2	470pF	CAP, CERM, 470 pF, 100 V, +/- 10%, X7R, 0603	0603	06031C471KAT2A	AVX
C22, C35, C79, C80	4	1000pF	CAP, CERM, 1000 pF, 50 V, +/- 10%, X7R, 0603	0603	GRM188R71H102KA01D	MuRata
C32, C37	2	22uF	CAP, CERM, 22 µF, 50 V, +/- 20%, X5R, 6x5x5mm	6x5x5mm	CKG57NX5R1H226M500JH	TDK
C33	1	2200pF	CAP, CERM, 2200 pF, 630 V, +/- 10%, X7R, 1206	1206	GRM31BR72J222KW01L	MuRata
C34, C43, C46	3	0.01uF	CAP, CERM, 0.01 µF, 50 V, +/- 10%, X7R, 0603	0603	GRM188R71H103KA01D	MuRata
C36	1	0.1uF	CAP, CERM, 0.1 µF, 50 V, +/- 10%, X7R, 0805	0805	C0805C104K5RACTU	Kemet
C38	1	0.47uF	CAP, CERM, 0.47 µF, 50 V, +/- 10%, X7R, 0805	0805	GRM21BR71H474KA88L	MuRata
C47	1	0.047uF	CAP, CERM, 0.047 µF, 100 V, +/- 10%, X7R, 0805	0805	GRM21BR72A473KA01L	MuRata
C51, C52, C75, C77	4	0.1uF	CAP, CERM, 0.1 µF, 100 V, +/- 5%, X7R, 1206	1206	12061C104JAT2A	AVX
C56	1	1uF	CAP, CERM, 1 µF, 50 V, +/- 10%, X7R, 1206	1206	GRM31MR71H105KA88L	MuRata
D1, D2, D19, D31, D55, D56	6	13V	Diode, Zener, 13 V, 200 mW, SOD-323	SOD-323	MMSZ5243BS-7-F	Diodes Inc.
D3, D7, D9, D17, D18, D22, D23, D25, D29, D30, D32, D34, D37, D40, D41, D42, D43, D44, D45, D46, D48, D49, D51, D58, D67	25	100V	Diode, Ultrafast, 100 V, 0.15 A, SOD-123, Diode	SOD-123	1N4148W-7-F	Diodes Inc.
D4, D5, D59	3	91V	Diode, Zener, 91 V, 500 mW, SOD-123	SOD-123	MMSZ5270BT1G	ON Semiconductor
D6, D8, D11, D12, D13, D14, D15, D16, D20, D24, D26, D28, D33, D47, D50, D52, D53, D54, D57, D60, D61, D62, D63	23	5.6V	Diode, Zener, 5.6 V, 200 mW, SOD-323	SOD-323	MMSZ5232BS-7-F	Diodes Inc.
D10	1	22V	Diode, Zener, 22 V, 500 mW, SOD-123	SOD-123	MMSZ5251B-7-F	Diodes Inc.
D21	1	56V	Diode, Zener, 56 V, 550 mW, SMB	SMB	1SMB5943BT3G	ON Semiconductor
D27, D64	2	58V	Diode, TVS, Uni, 58 V, 400 W, SMA	SMA	SMAJ58A	Diodes Inc.
D35, D36	2	30V	Diode, Schottky, 30 V, 0.2 A, SOD-323F	SOD-323F	BAT45J,115	NXP Semiconductor
D38	1	60V	Diode, Schottky, 60 V, 1 A, SOD-123F	SOD-123F	PMEG6010CEH,115	NXP Semiconductor
D39	1	45V	Diode, Schottky, 45 V, 0.1 A, SOD-523	SOD-523	SDM10U45-7-F	Diodes Inc.
D65	1	100V	Diode, TVS, Uni, 100 V, 5000 W, SMC	SMC	5.0SMDJ100A	Littelfuse
D66	1	600V	Diode, Ultrafast, 600 V, 3 A, SMC	SMC	MURS360T3G	ON Semiconductor
H1, H2, H3, H4	4		Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	Screw	NY PMS 440 0025 PH	B&F Fastener Supply
H5, H6, H7, H8	4		Standoff, Hex, 0.5"L #4-40 Nylon	Standoff	1902C	Keystone
J1, J7	2		Terminal block, 3.5mm, 11x1, R/A, TH	39.90x7.03x9.33 mm	395021011	Molex
J2	1		Header, 100mil, 8x1, TH	Header, 8x1, 100mil, TH	800-10-008-10-001000	Mill-Max
J3	1		Header, 100mil, 4x1, Tin, TH	Header, 4x1, 100mil, TH	5-146278-4	TE Connectivity
J4, J5, J6, J8	4		TERMINAL SCREW PC 30AMP, TH	12.9x6.3x7.9 mm	8199	Keystone
L1	1	1000 ohm	Ferrite Bead, 1000 ohm @ 100 MHz, 0.35 A, 0402	0402	BLM15AX102SN1D	MuRata
L2	1	100uH	Coupled inductor, 100 µH, 1.1 A, 0.322 ohm, +/- 20%, SMD	MSD1260	MSD1260-104MLB	Coilcraft
P1, P2, P3, P4	4		Header, 2-Pin			
Q1, Q9, Q10, Q15, Q23, Q24, Q33, Q46, Q49, Q52	10	60V	MOSFET, N-CH, 60 V, 0.17 A, SOT-23	SOT-23	2N7002-7-F	Diodes Inc.
Q2, Q28, Q29, Q53	4	-100V	MOSFET, P-CH, -100 V, -0.6 A, SOT-23	SOT-23	ZXMP10A13FTA	Diodes Inc.
Q3, Q5, Q6, Q14, Q18, Q20, Q26, Q27, Q30, Q32, Q45	11	100V	MOSFET, N-CH, 100 V, 0.17 A, SOT-23	SOT-23	BSS123	Fairchild Semiconductor
Q4, Q8, Q11, Q13, Q17, Q44, Q47, Q48, Q50, Q54, Q55	11	20V	MOSFET, P-CH, 20 V, 0.83 A, SOT-563	SOT-563	FDY1002PZ	Fairchild Semiconductor
Q7, Q12, Q25	3	-20V	MOSFET, P-CH, -20 V, -0.2 A, SOT-416	SOT-416	RZE002P02TL	Rohm

Q16, Q19, Q22, Q31, Q51, Q56	6	-50V	MOSFET, P-CH, -50 V, -0.13 A, SOT-323, MOSFET, P-CH, -50 V, -0.13 A, SOT-323, MOSFET, P-CH, -50V, -0.13A, SOT-323, MOSFET, P-CH, -50V, -0.13A, SOT-323, MOSFET, P-CH, -50 V, -0.13 A, SOT-323, MOSFET, P-CH, -50 V, -0.13 A, SOT-323	SOT-323		BSS84W-7-F	Diodes Inc.
Q21	1	100V	MOSFET, N-CH, 100 V, 1.9 A, SOT-223	SOT-223		ZXMN10A11G	Diodes Inc.
Q34, Q35	2	40 V	Transistor, PNP, 40 V, 0.2 A, SOT-23	SOT-23		MMBT3906	Fairchild Semiconductor
Q36, Q37	2	40 V	Transistor, NPN, 40 V, 0.2 A, SOT-23	SOT-23		MMBT3904	Fairchild Semiconductor
Q38, Q39, Q40, Q41, Q42, Q43	6	200V	MOSFET, N-CH, 200 V, 62 A, DDPK	DDPAK		FDB2614	Fairchild Semiconductor
R1, R8, R43, R44, R48, R62, R69, R76, R103, R105, R108, R124, R155	13	100k	RES, 100 k, 5%, 0.125 W, 0805	0805		CRCW0805100KJNEA	Vishay-Dale
R2, R6, R20	3	1.2Meg	RES, 1.2 M, 5%, 0.125 W, 0805	0805		CRCW08051M20JNEA	Vishay-Dale
R3, R72, R74, R87, R95, R96, R129, R131, R153, R154	10	5.1Meg	RES, 5.1 M, 5%, 0.125 W, 0805	0805		CRCW08055M10JNEA	Vishay-Dale
R4, R12, R17, R24, R29, R33, R35, R38, R39, R42, R46, R47, R53, R60, R66, R89, R101, R106, R113, R118, R122, R125, R128, R134, R139, R141, R143, R145, R147, R150	30	1.0k	RES, 1.0 k, 5%, 0.125 W, 0805	0805		CRCW08051K00JNEA	Vishay-Dale
R5, R100	2	200	RES, 200, 1%, 0.125 W, 0805	0805		CRCW0805200RFKEA	Vishay-Dale
R7, R13, R15, R19, R26, R32, R36, R41, R49, R55, R56, R61, R102, R107, R116, R120, R123, R132, R136, R140, R144, R148	22	10k	RES, 10 k, 5%, 0.125 W, 0805	0805		CRCW080510K0JNEA	Vishay-Dale
R9	1	620k	RES, 620 k, 5%, 0.125 W, 0805	0805		CRCW0805620KJNEA	Vishay-Dale
R10	1	172k	RES, 172 k, 0.1%, 0.125 W, 0805	0805		RT0805BRD07172KL	Yageo America
R11, R16, R23, R28, R34, R37, R45, R51, R58, R65, R104, R111, R117, R121, R127, R133, R138, R142, R146, R149	20	100	RES, 100, 1%, 0.25 W, 1206	1206		CRCW1206100RFKEA	Vishay-Dale
R14	1	8.25k	RES, 8.25 k, 1%, 0.125 W, 0805	0805		CRCW08058K25FKEA	Vishay-Dale
R18, R27, R59, R70, R85, R88, R92, R93, R114, R151	10	100	RES, 100, 5%, 0.125 W, 0805	0805		CRCW0805100RJNEA	Vishay-Dale
R21, R22, R30, R31, R112, R115	6	4.7k	RES, 4.7 k, 5%, 0.125 W, 0805	0805		CRCW08054K70JNEA	Vishay-Dale
R25, R52, R64, R110, R119, R126	6	3.0Meg	RES, 3.0 M, 5%, 0.125 W, 0805	0805		CRCW08053M00JNEA	Vishay-Dale
R40, R54, R135	3	510k	RES, 510 k, 5%, 0.125 W, 0805	0805		CRCW0805510KJNEA	Vishay-Dale
R50	1	8.2Meg	RES, 8.2 M, 5%, 0.125 W, 0805	0805		CRCW08058M20JNEA	Vishay-Dale
R57, R63	2	3.3k	RES, 3.3 k, 5%, 0.125 W, 0805	0805		CRCW08053K30JNEA	Vishay-Dale
R67	1	47k	RES, 47 k, 5%, 0.125 W, 0805	0805		CRCW080547K0JNEA	Vishay-Dale
R68	1	3.3k	RES, 3.3 k, 5%, 0.75 W, 2010	2010		CRCW20103K30JNEF	Vishay-Dale
R71	1	2.00k	RES, 2.00 k, 1%, 0.125 W, 0805	0805		CRCW08052K00FKEA	Vishay-Dale
R73	1	20	RES, 20, 5%, 0.1 W, 0603	0603		CRCW060320R0JNEA	Vishay-Dale
R75	1	46.4k	RES, 46.4 k, 1%, 0.125 W, 0805	0805		CRCW080546K4FKEA	Vishay-Dale
R77	1	10.0k	RES, 10.0 k, 1%, 0.125 W, 0805	0805		CRCW080510K0FKEA	Vishay-Dale
R78	1	0	RES, 0, 5%, 0.125 W, 0805	0805		CRCW08050000Z0EA	Vishay-Dale
R79	1	124k	RES, 124 k, 1%, 0.125 W, 0805	0805		CRCW0805124KFKEA	Vishay-Dale
R80	1	64.9k	RES, 64.9 k, 1%, 0.125 W, 0805	0805		CRCW080564K9FKEA	Vishay-Dale
R81	1	3.40k	RES, 3.40 k, 1%, 0.125 W, 0805	0805		CRCW08053K40FKEA	Vishay-Dale
R82	1	11.8k	RES, 11.8 k, 1%, 0.125 W, 0805	0805		CRCW080511K8FKEA	Vishay-Dale
R83	1	60.4	RES, 60.4, 1%, 0.125 W, 0805	0805		CRCW080560R4FKEA	Vishay-Dale
R84, R86, R90, R91, R109	5	330	RES, 330, 5%, 0.125 W, 0805	0805		CRCW0805330RJNEA	Vishay-Dale
R94, R98, R99	3	0	RES, 0, 5%, 0.25 W, 1206	1206		CRCW12060000Z0EA	Vishay-Dale
R97	1	0.001	RES, 0.001, 1%, 2 W, 4527	4527		WSR21L000FEA	Vishay-Dale
R130	1	6.2Meg	RES, 6.2 M, 5%, 0.125 W, 0805	0805		CRCW08056M20JNEA	Vishay-Dale
R137	1	680k	RES, 680 k, 5%, 0.125 W, 0805	0805		CRCW0805680KJNEA	Vishay-Dale
S1	1		Switch, Tactile, SPST-NO, 0.05A, 12V, SMT	SW, SPST 6x6 mm		4-1437565-1	TE Connectivity
U1, U8	2		Battery Monitor for Lithium-Ion and Phosphate Battery Packs, DBT0030A	DBT0030A		BQ7693003DBT	Texas Instruments
U2	1		MIXED SIGNAL MICROCONTROLLER, DA0038A	DA0038A		MSP430G2755IDA38	Texas Instruments
U3	1		Adjustable Precision Shunt Regulator, 34 ppm / degC, 100 mA, 0 to 70 degC, 3-pin SOT-23 (DBZ), Green (RoHS & no Sb/Br)	DBZ0003A		TL431ACDBZR	Texas Instruments
U4	1		48V, 325mA Constant On-Time Synchronous Buck Regulator, DDA0008B	DDA0008B		LM25018MR/NOPB	Texas Instruments
U5	1	TLP124	IC, Photocoupler	SOP-4		TLP124	Toshiba
U6	1		Isolated CAN Transceiver, -55 to 105 degC, 8-pin SOP (DUB), Green (RoHS & no Sb/Br)	DUB0008A		ISO1050DUBR	Texas Instruments
U7	1		Low-Power Bidirectional I2C Isolators, D0008A	D0008A		ISO1541D	Texas Instruments
Y1	1		Crystal, 32.768 KHz, 12.5 pF, SMD	SMD, 2-Leads, Body 3.2x1.5mm		FC-135 32.7680KA-A3	Epson

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