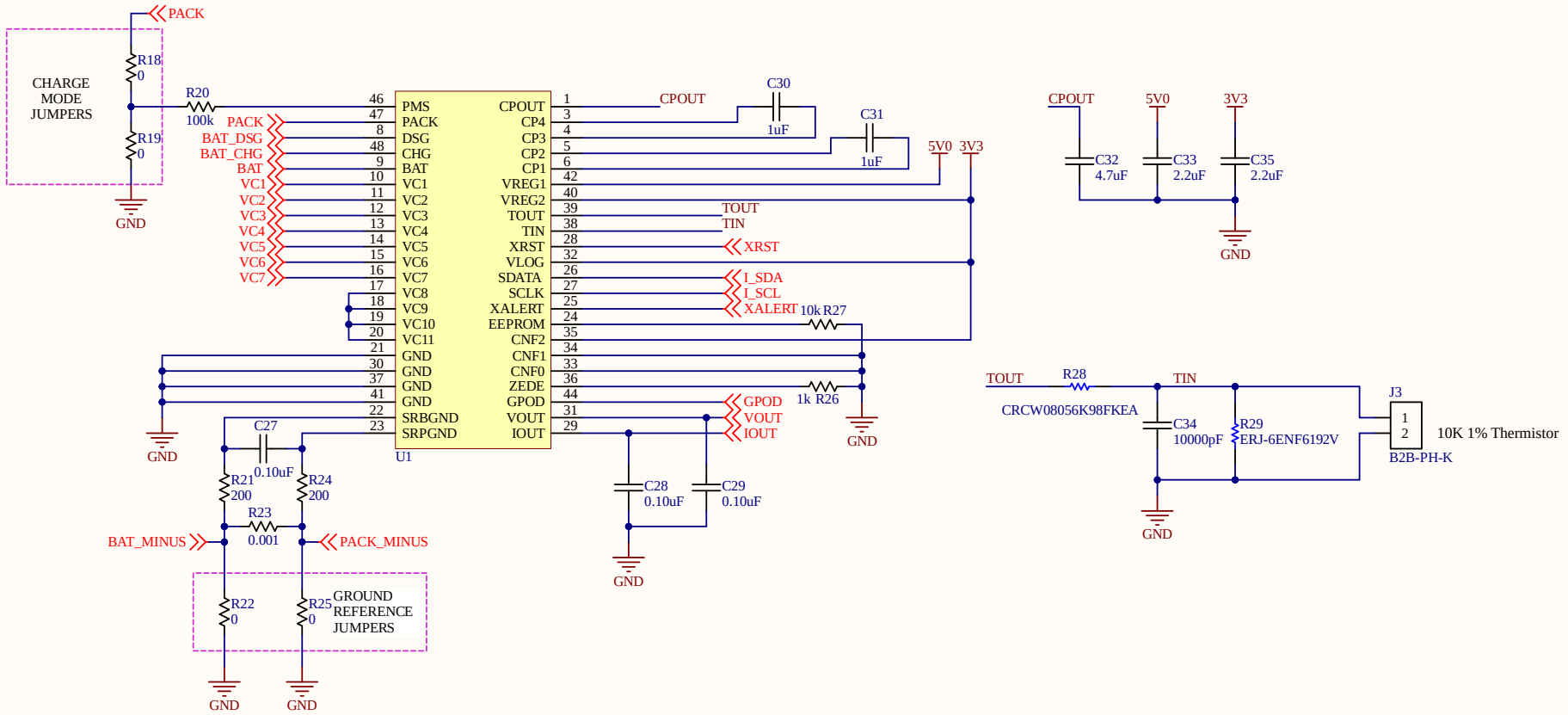

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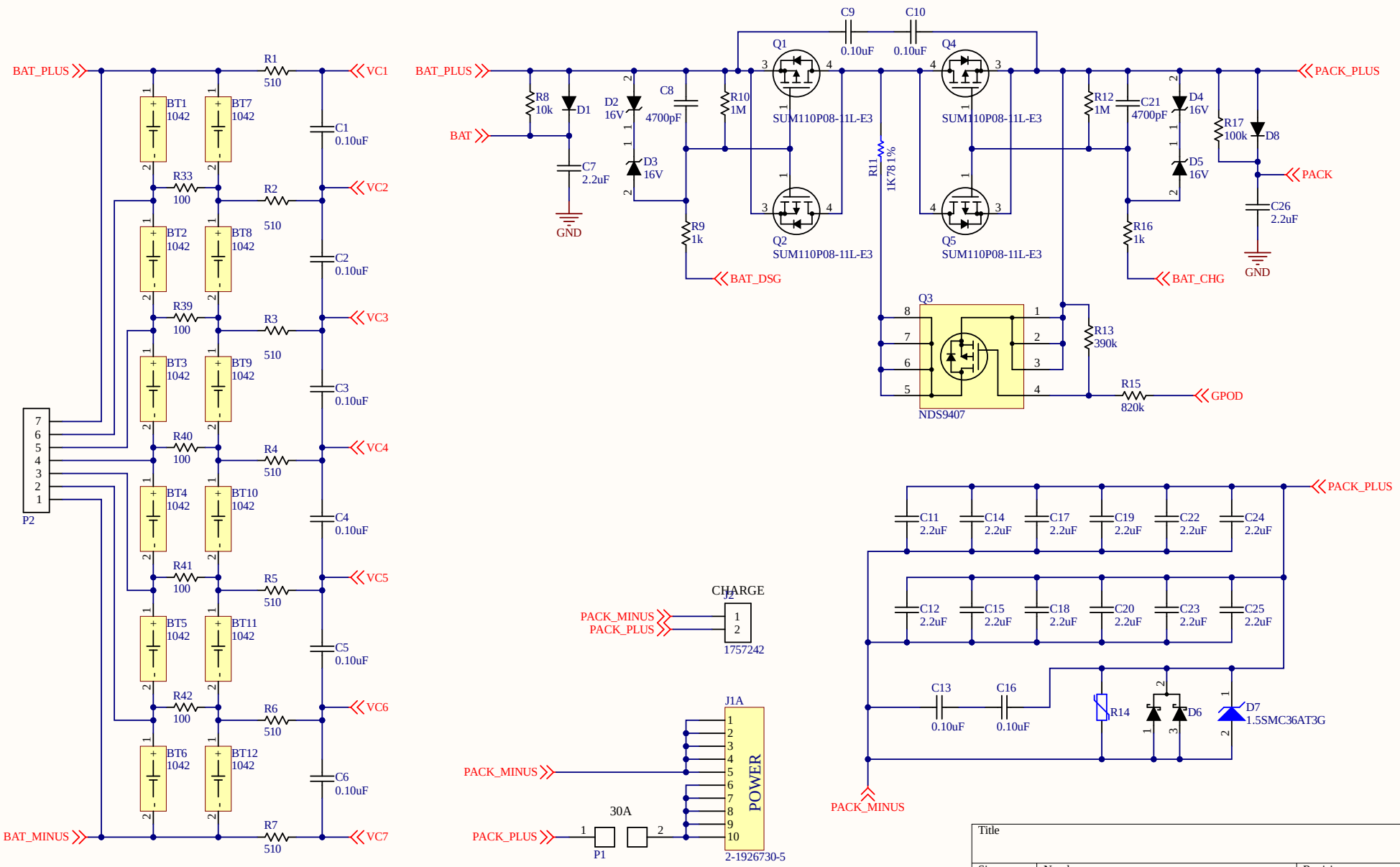

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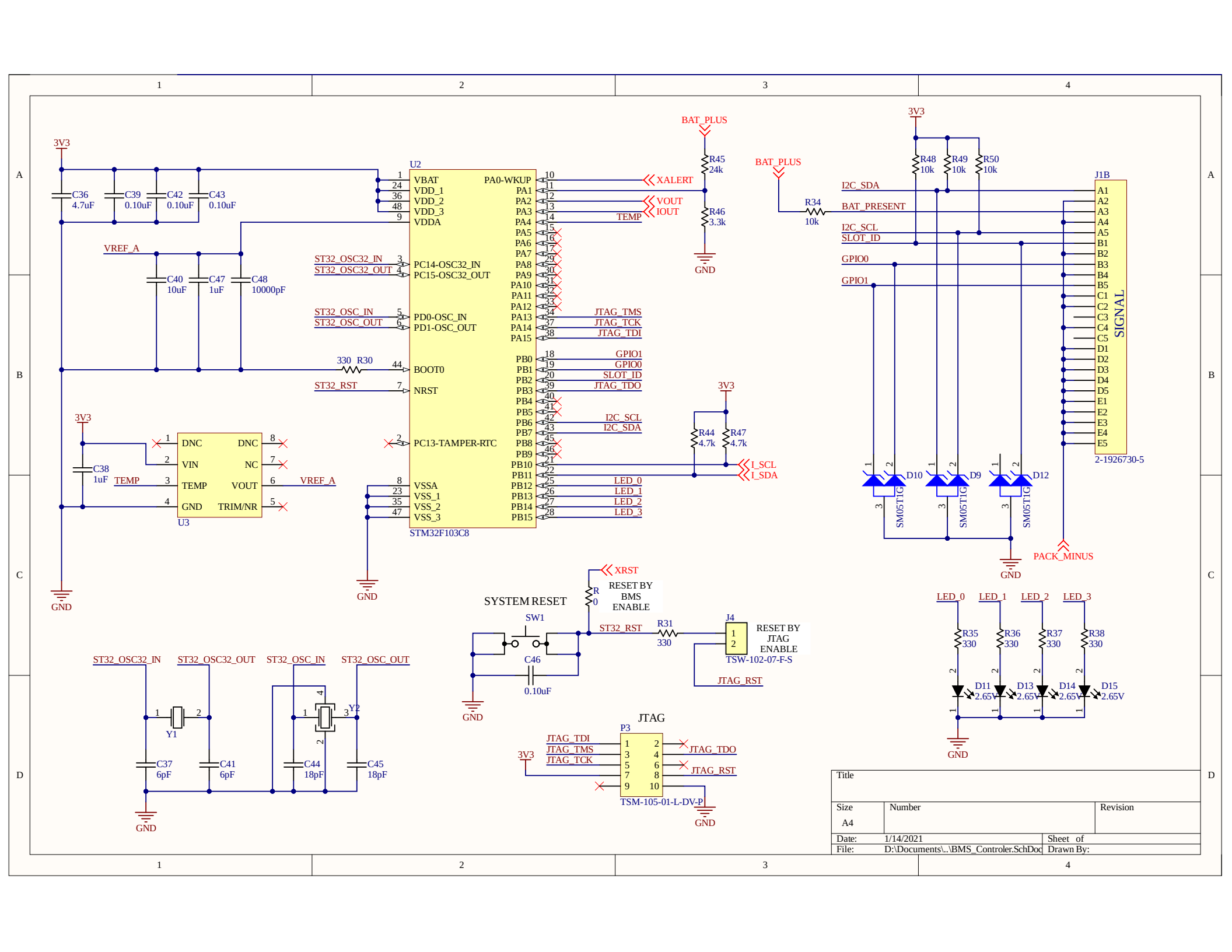
3V3
C36 4.7uF
C39 0.10uF
C42 0.10uF
C43 0.10uF
VREF_A
C40 10uF
C47 1uF
C48 10000pF
U2
VBAT
VDD_1
VDD_2
VDD_3
VDDA
PC14-OSC32_IN
PC15-OSC32_OUT
PD0-OSC_IN
PD1-OSC_OUT
BOOT0
NRST
PC13-TAMPER-RTC
VSSA
VSS_1
VSS_2
VSS_3
PA0-WKUP
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PA8
PA9
PA10
PA11
PA12
PA13
PA14
PA15
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
PB8
PB9
PB10
PB11
PB12
PB13
PB14
PB15
ST32_OSC32_IN
ST32_OSC32_OUT
ST32_OSC_IN
ST32_OSC_OUT
ST32_RST
330 R30
STM32F103C8
BAT_PLUS
R45 24k
R46 3.3k
XALERT
VOUT
IOUT
TEMP
JTAG_TMS
JTAG_TCK
JTAG_TDI
GPIO1
GPIO0
SLOT_ID
JTAG_TDO
I2C_SCL
I2C_SDA
LED_0
LED_1
LED_2
LED_3
R44 4.7k
R47 4.7k
I_SCL
I_SDA
GND
C38 1uF
TEMP
U3
DNC
VIN
TEMP
GND
DNC
NC
VOUT
TRIM/NR
VREF_A
SYSTEM RESET
SW1
C46 0.10uF
XRST
R 0
RESET BY BMS ENABLE
R31 330
J4
TSW-102-07-F-S
RESET BY JTAG ENABLE
JTAG_RST
JTAG
P3
TSM-105-01-L-DV-P
Y1
Y2
C37 6pF
C41 6pF
C44 18pF
C45 18pF
R34 10k
BAT_PRESENT
R48 10k
R49 10k
R50 10k
I2C_SDA
I2C_SCL
SLOT_ID
GPIO0
GPIO1
J1B
SIGNAL
2-1926730-5
PACK_MINUS
D10
D9
D12
SM05T1G
R35 330
R36 330
R37 330
R38 330
D11 2.65V
D13 2.65V
D14 2.65V
D15 2.65V
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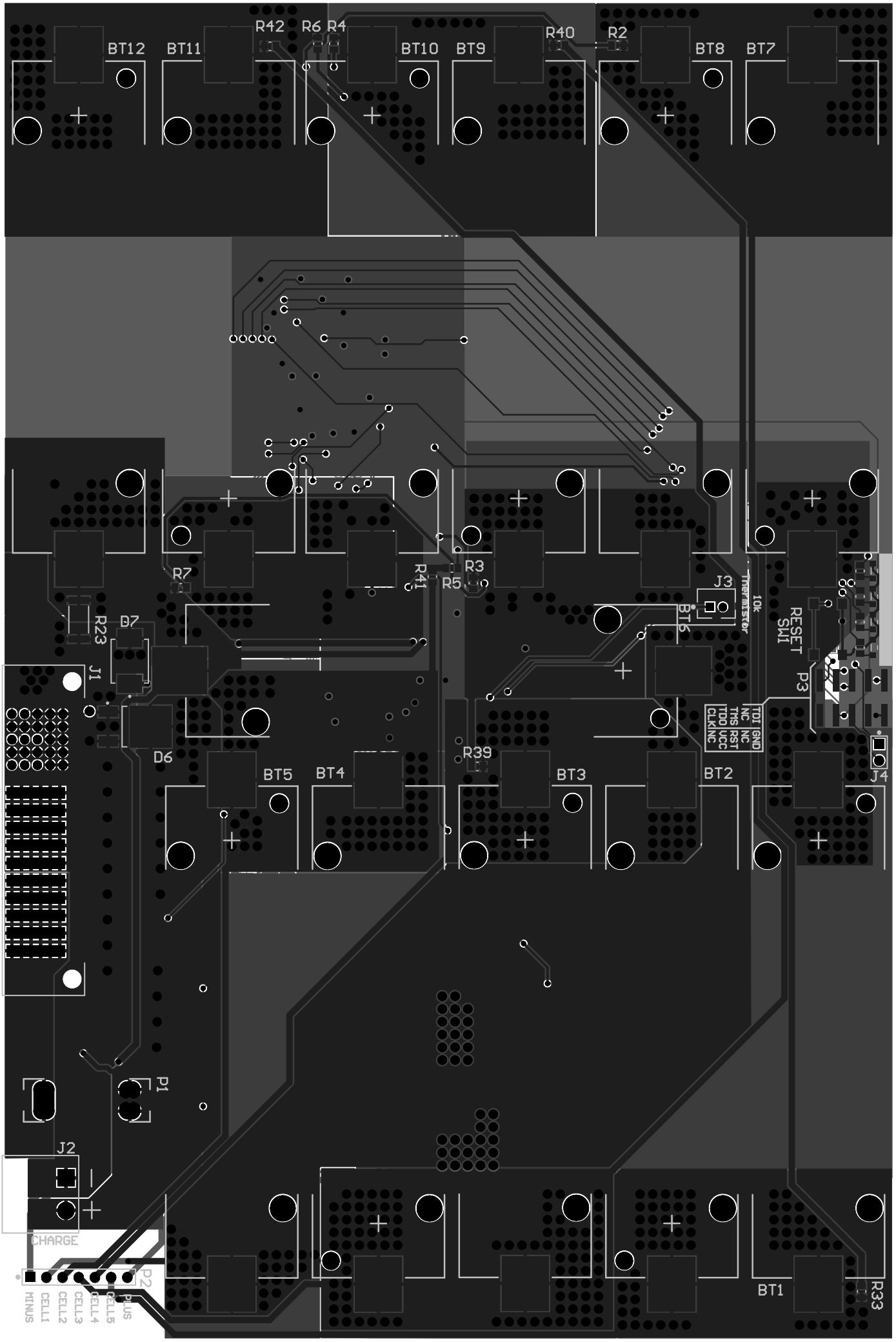
R42
R6
R4
R40
R2
BT12
BT11
BT10
BT9
BT8
BT7
R7
R41
R5
R3
J3
Thermistor
10k
BT6
RESET
SW1
P3
R23
D7
J1
TDI
GND
NC
NC
TMS
RST
TDO
VCC
CLK
NC
D6
R39
J4
BT5
BT4
BT3
BT2
P1
J2
CHARGE
P2
MINUS
CELL1
CELL2
CELL3
CELL4
CELL5
PLUS
BT1
R33

Comment	Description	Designator	Footprint	LibRef	Quantity
1042	Battery Holder, 18650, SMD	BT1, BT2, BT3, BT4, BT5, BT6, BT7, BT8, BT9, BT10, BT11, BT12	KEYSTONE_1042	CONN-00077	12
0.10uF	CAP, 0.10uF, 10%, 50V, X7R, 0805	C1, C2, C3, C4, C5, C6, C9, C10, C13, C16, C27, C28, C29, C39, C42, C43, C46	chip_0805	CAP-00072	17
2.2uF	CAP, 2.2uF, ±20%, 100V, X7R, 0603	C7, C11, C12, C14, C15, C17, C18, C19, C20, C22, C23, C24, C25, C26, C33, C35	chip_1210	CAP-00536	16
4700pF	CAP, 4700pF, 10%, 100V, X7R, 0805	C8, C21	chip_0805	CAP-00032	2
1uF	CAP, 1uF, 10%, 50V, X7R, 0805	C30, C31, C38, C47	chip_0805	CAP-00109	4
4.7uF	CAP, 4.7uF, 10%, 25V, X7R, 0805	C32, C36	chip_0805	CAP-00128	2
10000pF	CAP, 10000pF, 10%, 25V, X7R, 0805	C34, C48	chip_0805	CAP-00045	2
6pF	CAP, 6pF, ±10%, 50V, C0G, 0603	C37, C41	chip_0603	CAP-00538	2
10uF	CAP, 10uF, 10%, 10V, X7R, 0805	C40	chip_0805	CAP-00131	1
18pF	CAP, 18pF, ±1%, 50V, C0G, 0603	C44, C45	chip_0603	CAP-00417	2
diode_0	Dio, Silicon, 200mA, 1V, 100V, SOD-123	D1, D8	sod123_0	DIO-00060	2
16V	Dio, Zener, 16V 300mW, SOD-523	D2, D3, D4, D5	sod523_0	DIO-00082	4
V40PWM10C-M3/I	Dio, Schottky Array, Dual, Common Cathode, 100V 20A, SLIM DPAK	D6	DPAK_SLIM	DIO-00081	1
1.5SMC36AT3G	1500 W Peak Power Zener Transient Voltage Suppressor, Unidirectional, 2-Pin SMC, Pb-Free, Tape and Reel	D7	ONSC-SMC-2-403-03_V	CMP-1061-00497-1	1
SM05T1G	Transient Voltage Suppressor Diode Array, Dual Common Anode Diodes for ESD Protection, 3-Pin SOT-23, Pb-Free, Tape and Reel	D9, D10, D12	ONSC-SOT-23-3-318-08_V	CMP-1061-00666-1	3
2.65V	LED, Green, SMD Right-Angle, Low-Current, Kingbright HELI2 Series	D11, D13, D14, D15	APA2107	DIO-00083	4
2-1926730-5	Backplane Header, Blades and Pins, Edge Mount Right Angle, 10 Power 25 Signal	J1	TE_CONN_2-1926730-5	CONN-00093	1
1757242	Terminal Blk Header, 2 Pos, 5.08mm, 12A, Right-Angle	J2	PHOENIX_1757242	CONN-00102	1
B2B-PH-K	JST PH 2x1, THT, 2.00mm Pitch	J3	JST_PHR_2_0	CONN-00048	1
TSW-102-07-F-S	Header, 2x1, 0.1"	J4	HDDR_2x1_0	CONN-00055	1
conn-fuse-holder_0	Fuse Holder, 30A, 500V, LP-Mini 897, ATOF 257	P1	FUSE_HOLDER_KEYSTONE_3557-2	CONN-00015	1
conn-7x1_0	Header, 7x1, 0.1"	P2	HDDR_7x1_0	CONN-00105	1
TSM-105-01-L-DV-P	Header, 5x2, 0.1", SMD	P3	SAMTEC_SMD_HDDR_5x2	CONN-00071	1
SUM110P08-11L-E3	XSTR, MOSFET P-Channel, 80V 110A, D2PAK	Q1, Q2, Q4, Q5	D2PAK-3_1	XSTR-00050	4
NDS9407	XSTR PFET, 3A, 60V, 2.5W, SOIC-8	Q3	SO-8	XSTR-00036	1
510	RES SMD 510 OHM 1% 1/8W 0805	R1, R2, R3, R4, R5, R6, R7	chip_0805	RES-00240	7
10k	RES SMD 10K OHM 1% 1/8W 0805	R8, R27, R34, R48, R49, R50	chip_0805	RES-00307	6
1k	RES SMD 1K OHM 1% 1/8W 0805	R9, R16, R26	chip_0805	RES-00361	3
1M	RES SMD 1M OHM 1% 1/8W 0805	R10, R12	chip_0805	RES-00363	2
1K78 1%	1K78 1W 1% 2512 (6432 Metric) SMD	R11	RESC2512(6432)_L	CMP-1018-00536-1	1
390k	RES SMD 390K OHM 1% 1/8W 0805	R13	chip_0805	RES-00455	1
MOV_0	Varistor, Ceramic, 47V 300A 2J, 1210	R14	chip_1210	MISC-00057	1
820k	RES SMD 820K OHM 1% 1/8W 0805	R15	chip_0805	RES-00567	1
100k	RES SMD 100K OHM 1% 1/8W 0805	R17, R20	chip_0805	RES-00302	2
0	RES SMD 0 OHM 1/8W 0805 Thick Film	R18, R19, R22, R25, R43	chip_0805	RES-00720	5
200	RES SMD 200 OHM 1% 1/8W 0805	R21, R24	chip_0805	RES-00197	2
0.001	RES, 0.001, 1%, 1W, 2512	R23	chip_2512	RES-00002	1
CRCW08056K98FKEA		R28	RESC2013X50X30ML20T20	CMP-2001-04091-1	1
ERJ-6ENF6192V		R29	RESC2013X70X40ML20T20	CMP-2001-00256-1	1
330	RES SMD 330 OHM 1% 1/8W 0805	R30, R31, R35, R36, R37, R38	chip_0805	RES-00222	6
100	RES SMD 100 OHM 1% 1/8W 0805	R33, R39, R40, R41, R42	chip_0805	RES-00179	5
4.7k	RES SMD 4.7K OHM 1% 1/8W 0805	R44, R47	chip_0805	RES-00471	2
24k	RES SMD 24K OHM 1% 1/8W 0805	R45	chip_0805	RES-00400	1
3.3k	RES SMD 3.3K OHM 1% 1/8W 0805	R46	chip_0805	RES-00420	1
SW_1P1T_2	Switch, SPST-NO, Tactile, 6.3x6.0mm, SMD, 50mA 24VDC	SW1	B3FS-1000	MISC-00042	1
BQ77PL900	Batt Manager, Li-Ion, 5-10 cells, bq77PL900	U1	SSOP-48_0	PWREG-00024	1
STM32F103C8	STM32 M3, LQFP-48	U2	LQFP48_0	UCTRL-00008	1
REF50xx	IC, Voltage Reference, 2.5V, 3ppm/°C, REF5020	U3	SO-8_1	ANLG-00055	1
osc_xtal_2p_0	XTAL, 32.768kHz, 6pF, 20ppm	Y1	ABS25_OSC	OSC-00003	1
osc_xtal_4p_1-3	XTAL, 8MHz, 10pF, 10ppm	Y2	ECX-53B	OSC-00006	1