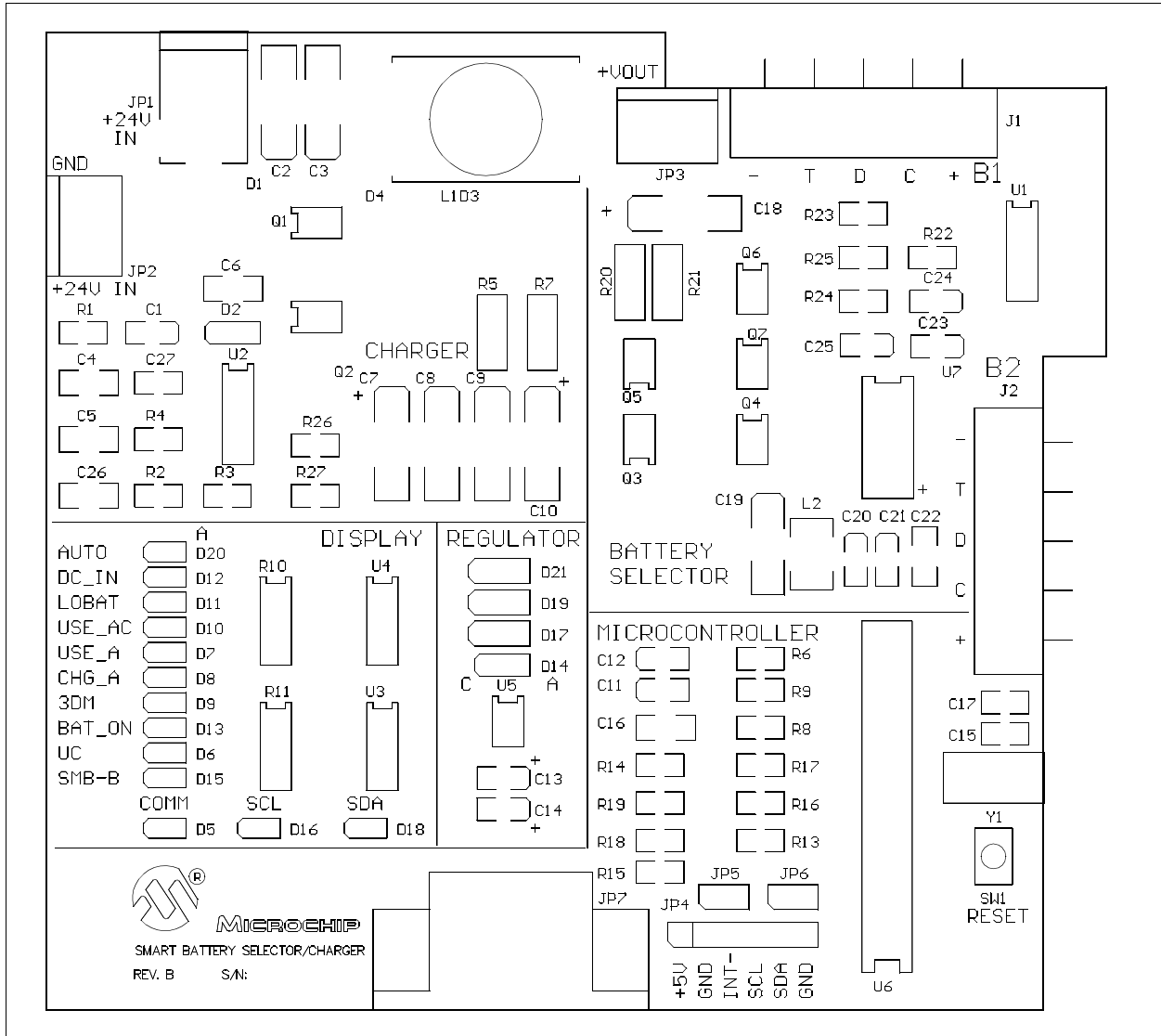


APPENDIX D: PCB LAYOUT & FAB DRAWING

The top silk screen drawing for the battery charger/selector is shown below. The actual board dimensions are 4 3/16" W x 3 7/8" H.

FIGURE D-1: SMART BATTERY CHARGER LAYOUT



PICREF-5

APPENDIX E: BILL OF MATERIALS (BOM)

TABLE E-1: BOM FOR PICREF-5

Line #	Qty	Part #	Part Description	Manufact.	Vendor	Vendor Part #	Reference Designator
1	1	05-01422	SCHEMATIC, CHARGER/ SELECTOR CARD	N/A	N/A	N/A	N/A
2	1	05-01422	PCB FABRICATION, CHARGER/ SELECTOR CARD		N/A	DM003002	N/A
3	5	ECS-T1CY225R	CAP, 2.2uF, 16V, TANT	PANASONIC	DIGIKEY	PCS3225CT-ND	C1,C11,C12, C13,C21
4	7	T491D106K035AS	CAP, 10uF	KEMET	NEWARK	93F2975	C2,C3,C7,C8, C9,C10,C18
5	1	ECU-V1H473KBW	CAP, 0.047uF, 50V, CER	PANASONIC	DIGIKEY	PCC473BCT-ND	C4
6	5	ECU-V1H104KBW	CAP, 0.1uF, 50V, X7R	PANASONIC	DIGIKEY	PCC104BCT-ND	C5,C6,C16, C22,C26
7	1	T491C105K050AS	CAP, 1uF, 50V, TANT	KEMET	NEWARK	92F1845	C19
8	5	ECS-H1VX105R	CAP, 1uF, 35V, TANT	PANASONIC	DIGIKEY	PCT6105CT-ND	C14,C20,C23, C24,C25
9	2	ECU-V1H330JCG	CAP, 33pF, 50V, NPO	PANASONIC	DIGIKEY	PCC330CGCT-ND	C15,C17
10	1	ECU-V1H471KBN	CAP, 470pF, 50V, NPO	PANASONIC	DIGIKEY	PCC471BNCT-ND	C27
11	3	MBRD835L	DIODE, SCHOTTKY, DPAK	MOTOROLA	NEWARK	MBRD835L	D1,D3,D4
12	2	SD103AW	DIODE, SCHOTTKY, SOD-123	DIODES INC.	DIGIKEY	SD103-AWD-ICT-ND	D2,D14
13	13	LNJ308G8TRA	LED, GREEN	PANASONIC	DIGIKEY	P525TR-ND	D5,D6,D7,D8, D9,D10,D11, D12,D13,D15, D16,D18,D20
14	3	S1A	DIODE, SMA	DIODES INC.	DIGIKEY	S1ADICT-ND	D17,D19,D21
15	1	PJ-002A	POWER JACK, 2.0 MM	CIU STACK	DIGIKEY	CP-002A-ND	JP1
16	2	EDZ250/2	TERM BLK, 5.08 MM	ON SHORE	DIGIKEY	ED1973-ND	JP2,JP3
17	1	22-03-2061	HEADER, SINGLE ROW	MOLEX	DIGIKEY	WM4004-ND	JP4
18	2	22-03-2021	HEADER, 2 PIN	MOLEX	DIGIKEY	WM4000-ND	JP5,JP6
19	1	4-520421-1	CONNECTOR, I ² C ANALYZER	AMP	AMP	4-520421-1	JP7
20	2	787441-1	CONNECTOR, BATTERY	AMP	AMP	787441-1	J1,J2
21	1	UP4-220	INDUCTOR, 22uH	COILTRONICS	CDI	UP4B-220	L1
22	1	300SS-102J	INDUCTOR, 1mH	TOKO	DIGIKEY	TKS1249CT-ND	L2
23	2	SI4412DY	MOSFET, N-CH, 30V, SO-8	SILICONIX	ALLIED	N/A	Q1,Q2

TABLE E-1: BOM FOR PICREF-5 (CONTINUED)

Line #	Qty	Part #	Part Description	Manufact.	Vendor	Vendor Part #	Reference Designator
24	5	SI4936DY	MOSFET, N-CH, DUAL, SO-8	SILICONIX	ALLIED	N/A	Q3,Q4,Q5,Q6, Q7
25	1	ERJ-2GEJ10	RES, 10, 1/10W, 5%, 0805	PANASONIC	DIGIKEY	P10ACT-ND	R1
26	4	ERJ-2GEJ10K	RES, 10K, 1/10W, 5%, 0805	PANASONIC	DIGIKEY	P10KACT-ND	R2,R3,R4,R8
27	4	LR2010-01-R075FTR	RES, 0.075, 1W, 5%	IRC	NEWARK	96F7805	R5,R7,R20, R21
28	1	ERJ-6ENF10.0K	RES, 10.0K, 1/10W, 1%, 0805	PANASONIC	DIGIKEY	P10.0KCCT-ND	R6
29	3	ERJ-6ENF3.32K	RES, 3.32K, 1/10W, 1%, 0805	PANASONIC	DIGIKEY	P3.32KCCT-ND	R9, R16, R17
30	2	766-14-3-102-G	RES, 1K, 1/10W, 2%	CTS	DIGIKEY	766-143-R1K-ND	R10,R11
31	5	ERJ-2GEJ22K	RES, 22K, 1/10W, 5%, 0805	PANASONIC	DIGIKEY	P22KACT-ND	R13,R14,R15, R18,R19
32	1	ERJ-6ENF121K	RES, 121K, 1/10W, 1%, 0805	PANASONIC	DIGIKEY	P121KCCT-ND	R22
33	2	ERJ-6ENF909K	RES, 909K, 1/10W, 1%, 0805	PANASONIC	DIGIKEY	P909KCCT-ND	R23,R24
34	1	ERJ-6ENF73.2K	RES, 73.2K, 1/10W, 1%, 0805	PANASONIC	DIGIKEY	P73.2KCCT-ND	R25
35	2	ERJ-6GEYJ100	RES, 100, 1/10W, 5%, 0805	PANASONIC	DIGIKEY	P100ACT-ND	R26,R27
36	1	EVQ-PMC05K	SWITCH, PB	PANASONIC	DIGIKEY	P8065S-ND	SW1
37	1	CD4053	ANALOG MUX, SO	FAIRCHILD	DIGIKEY	CD4053BCM-ND	U1
38	1	MAX1648ESE	CHARGER, SO	MAXIM	NU HORIZONS	MAX1648ESE	U2
39	2	74ACT14	INVERTER	TOSHIBA	DIGIKEY	TC74ACT14FN-ND	U3,U4
40	1	LML05	VOLT. REG	LTC	DIGIKEY	LM78L05ACM-ND	U5
41	1	LTC1479CG	POWERPATH CONT, SSOP	LTC	LTC	LTC1479CG	U7
42	1	PIC16C73A-04/P	MICROCONTROLLER, DIP	MICROCHIP	MCHP	PIC16C73A-04/P	U6
43	1	110-99-328-41-001	SOCKET, 28 PIN	MILL-MAX	DIGIKEY	ED3128-ND	U6a
44	1	ECS-40-20-4	XTAL, 4MHZ	ECS	DIGIKEY	X405-ND	Y1

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NOTES: