

5.2 Schematics

The bq24780SEVM-583 (Figure 11) schematic is provided for reference.

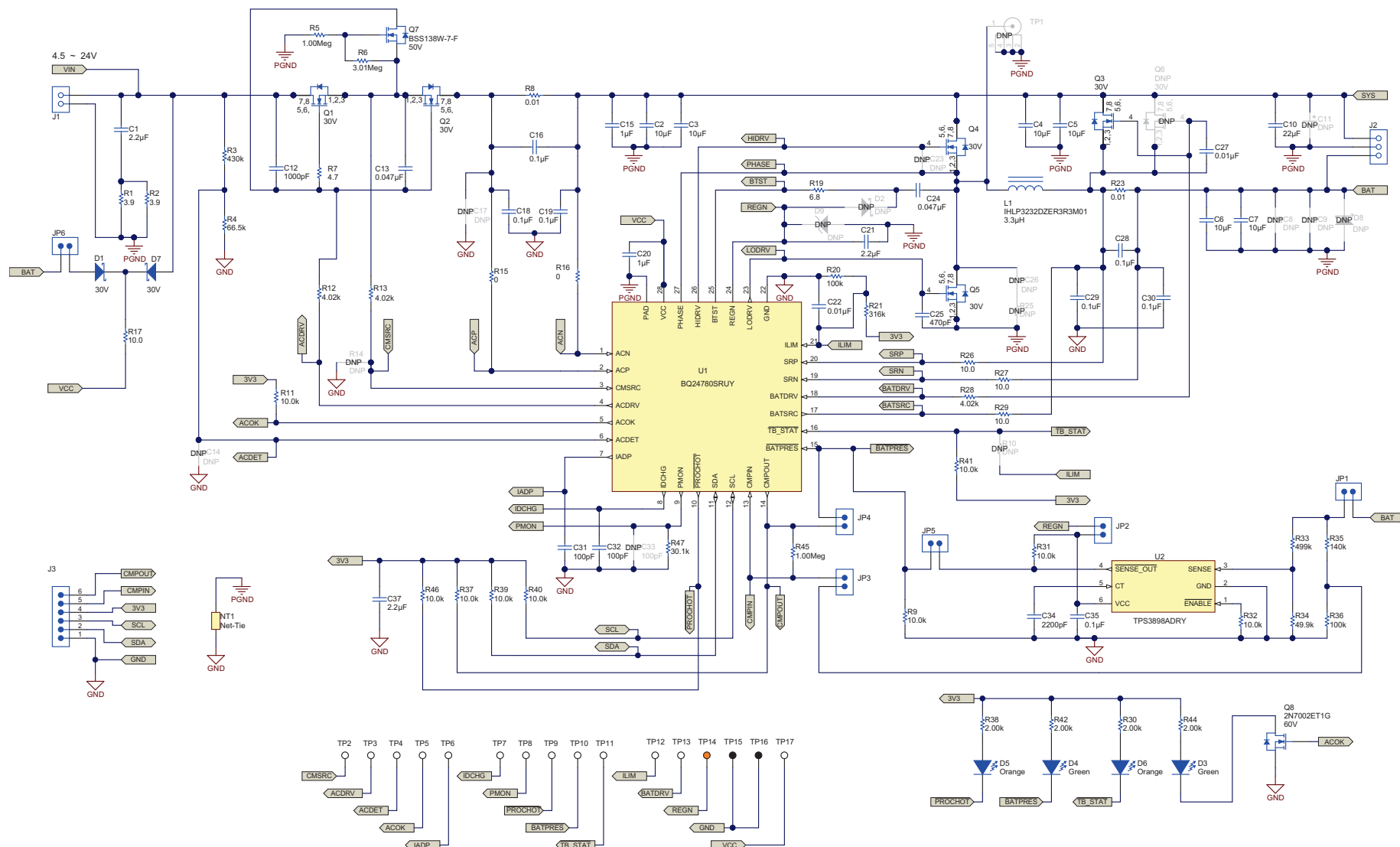


Figure 11. bq24780SEVM-583 Schematic

5.3 Bill of Materials

Table 5 lists the bq24780SEVM-583 BOM.

Table 5. bq24780SEVM-583 Bill of Materials

Designator	Qty	Value	Description	Package Reference	PartNumber	Manufacturer
IPCB	1		Printed Circuit Board		PWR583	Any
C1	1	2.2uF	CAP, CERM, 2.2uF, 25V, +/-10%, X7R, 1206	1206	GRM31MR71E225KA93L	MuRata
C2, C3, C4, C5, C6, C7	6	10uF	CAP, CERM, 10uF, 25V, +/-10%, X5R, 1206	1206	GRM31CR61E106KA12L	MuRata
C10	1	22uF	CAP, CERM, 22uF, 25V, +/-10%, X5R, 1210	1210	GRM32ER61E226KE15L	MuRata
C12	1	1000pF	CAP, CERM, 1000pF, 50V, +/-10%, X7R, 0603	0603	GRM188R71H102KA01D	MuRata
C13, C24	2	0.047uF	CAP, CERM, 0.047uF, 50V, +/-10%, X7R, 0603	0603	GRM188R71H473KA61D	MuRata
C15, C20	2	1uF	CAP, CERM, 1uF, 25V, +/-10%, X7R, 0603	0603	GRM188R71E105KA12D	MuRata
C16, C18, C19, C28, C29, C30, C35	7	0.1uF	CAP, CERM, 0.1uF, 25V, +/-10%, X7R, 0603	0603	GRM188R71E104KA01D	MuRata
C21	1	2.2uF	CAP, CERM, 2.2uF, 16V, +/-10%, X5R, 0603	0603	GRM188R61C225KE15D	MuRata
C22, C27	2	0.01uF	CAP, CERM, 0.01uF, 50V, +/-10%, X7R, 0603	0603	C0603X103K5RACTU	Kemet
C25	1	470pF	CAP, CERM, 470pF, 50V, +/-10%, X7R, 0603	0603	GRM188R71H471KA01D	MuRata
C31, C32	2	100pF	CAP, CERM, 100pF, 50V, +/-5%, C0G/NP0, 0603	0603	C0603C101J5GAC	Kemet
C34	1	2200pF	CAP, CERM, 2200pF, 50V, +/-5%, C0G/NP0, 0805	0805	C2012C0G1H222J	TDK
C37	1	2.2uF	CAP, CERM, 2.2uF, 10V, +/-10%, X7R, 0603	0603	GRM188R71A225KE15D	MuRata
D1, D7	2	30V	Diode, Schottky, 30V, 0.2A, SOD-323	SOD-323	BAT54HT1G	ON Semiconductor
D3, D4	2	Green	LED, Green, SMD	1.6x0.8x0.8mm	LTST-C190GKT	Lite-On
D5, D6	2	Orange	LED, Orange, SMD	1.6x0.8x0.8mm	LTST-C190KFKT	Lite-On
H9, H10, H11, H12	4		Bumpon, Hemisphere, 0.44 X 0.20, Clear	Transparent Bumpon	SJ-5303 (CLEAR)	3M
J1	1		TERMINAL BLOCK 5.08MM VERT 2POS	TERM_BLK, 2pos, 5.08mm	ED120/2DS	On-Shore Technology, Inc.
J2	1		TERMINAL BLOCK 5.08MM VERT 3POS	TERM_BLK, 3pos, 5.08mm	ED120/3DS	On-Shore Technology, Inc.
J3	1		Terminal Block, 6A, 3.5mm Pitch, 6-Pos, TH	20.5x8.2x6.5mm	ED555/6DS	On-Shore Technology, Inc.
JP1, JP2, JP3, JP4, JP5, JP6	6		Header, 100mil, 2x1, Gold plated, TH	Header, 2x1, 100mil	5-146261-1	TE Connectivity
L1	1	3.3uH	Inductor, Shielded, Powdered Iron, 3.3uH, 9.2A, 17.7 ohm, SMD	322x158x322mil	IHLP3232DZER3R3M01	Vishay-Dale
LBL1	1		Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650"H x 0.200"W	THT-14-423-10	Brady
Q1, Q2, Q3, Q4, Q5	5	30V	MOSFET, N-CH, 30V, 47A, SON 3.3x3.3mm	SON 3.3x3.3mm	CSD17308Q3	Texas Instruments
Q7	1	50V	MOSFET, N-CH, 50V, 0.2A, SOT-323	SOT-323	BSS138W-7-F	Diodes Inc.
Q8	1	60V	MOSFET, N-CH, 60V, 0.26A, SOT-23	SOT-23	2N7002ET1G	ON Semiconductor
R1, R2	2	3.9	RES, 3.9 ohm, 5%, 0.5W, 1210	1210	ERJ-14YJ3R9U	Panasonic
R3	1	430k	RES, 430k ohm, 1%, 0.1W, 0603	0603	RC0603FR-07430KL	Yageo America
R4	1	66.5k	RES, 66.5k ohm, 1%, 0.1W, 0603	0603	CRCW060366K5FKEA	Vishay-Dale
R5, R45	2	1.00Meg	RES, 1.00Meg ohm, 1%, 0.1W, 0603	0603	CRCW06031M00FKEA	Vishay-Dale
R6	1	3.01Meg	RES, 3.01Meg ohm, 1%, 0.1W, 0603	0603	CRCW06033M01FKEA	Vishay-Dale
R7	1	4.7	RES, 4.7 ohm, 5%, 0.1W, 0603	0603	CRCW06034R70JNEA	Vishay-Dale
R8, R23	2	0.01	RES, 0.01 ohm, 1%, 1W, 1206	1206	WSLP1206R0100FEA	Vishay-Dale
R9, R11, R31, R32, R37, R39, R40, R41, R46	9	10.0k	RES, 10.0k ohm, 1%, 0.1W, 0603	0603	CRCW060310K0FKEA	Vishay-Dale
R12, R13, R28	3	4.02k	RES, 4.02k ohm, 1%, 0.1W, 0603	0603	CRCW06034K02FKEA	Vishay-Dale
R15, R16	2	0	RES, 0 ohm, 5%, 0.1W, 0603	0603	CRCW06030000Z0EA	Vishay-Dale
R17	1	10.0	RES, 10.0 ohm, 1%, 0.25W, 1206	1206	ERJ-BENF10R0V	Panasonic
R19	1	6.8	RES, 6.8 ohm, 5%, 0.1W, 0603	0603	CRCW06036R80JNEA	Vishay-Dale
R20, R36	2	100k	RES, 100k ohm, 5%, 0.1W, 0603	0603	CRCW0603100KJNEA	Vishay-Dale
R21	1	316k	RES, 316k ohm, 1%, 0.1W, 0603	0603	CRCW0603316KFKEA	Vishay-Dale
R26, R27, R29	3	10.0	RES, 10.0 ohm, 1%, 0.1W, 0603	0603	RC0603FR-0710RL	Yageo America
R30, R38, R42, R44	4	2.00k	RES, 2.00k ohm, 1%, 0.1W, 0603	0603	CRCW06032K00FKEA	Vishay-Dale
R33	1	499k	RES, 499k ohm, 1%, 0.1W, 0603	0603	CRCW0603499KFKEA	Vishay-Dale

Table 5. bq24780SEVM-583 Bill of Materials (continued)

Designator	Qty	Value	Description	Package Reference	PartNumber	Manufacturer
R34	1	49.9k	RES, 49.9k ohm, 1%, 0.1W, 0603	0603	CRCW060349K9FKEA	Vishay-Dale
R35	1	140k	RES, 140k ohm, 1%, 0.1W, 0603	0603	CRCW0603140KFKEA	Vishay-Dale
R47	1	30.1k	RES, 30.1k ohm, 1%, 0.1W, 0603	0603	CRCW060330K1FKEA	Vishay-Dale
TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP17	13	White	Test Point, TH, Miniature, White	Keystone5002	5002	Keystone
TP14	1	Orange	Test Point, Miniature, Orange, TH	Orange Miniature Testpoint	5003	Keystone
TP15, TP16	2	Black	Test Point, Miniature, Black, TH	Black Miniature Testpoint	5001	Keystone
U1	1		1-4 Cell Turbo Boost Mode Battery Charge Controller with Power Monitoring and /PROCHOT for CPU Throttling, RUY0028A	RUY0028A	BQ24780SRUY	Texas Instruments
U2	1		Single-Channel, Adjustable Supervisory Circuit in Ultra-Small Package, DRY0006A	DRY0006A	TPS3898ADRY	Texas Instruments
C8, C9	0	10uF	CAP, CERM, 10uF, 25V, +/-10%, X5R, 1206	1206	GRM31CR61E106KA12L	MuRata
C11	0	150uF	CAP, TA, 150uF, 16V, +/-20%, 0.05 ohm, SMD	7.3x2.8x4.3mm	16TQC150MYF	Panasonic
C14, C26	0	DNP	CAP, CERM, 0.1uF, 25V, +/-10%, X7R, 0603	0603	GRM188R71E104KA01D	MuRata
C17	0	1uF	CAP, CERM, 1uF, 25V, +/-10%, X7R, 0603	0603	GRM188R71E105KA12D	MuRata
C23	0	0.1uF	CAP, CERM, 0.1uF, 25V, +/-10%, X7R, 0603	0603	GRM188R71E104KA01D	MuRata
C33	0	100pF	CAP, CERM, 100pF, 50V, +/-5%, C0G/NP0, 0603	0603	C0603C101J5GAC	Kemet
D2	0	DNP	Diode, Schottky, 30V, 0.2A, SOD-323	SOD-323	BAT54HT1G	ON Semiconductor
D8	0	DNP	Diode, Schottky, 20V, 1A, SMA	SMA	SS12-E3/61T	Vishay-Semiconductor
D9	0	8.2V	Diode, Zener, 8.2V, 500mW, SOD-123	SOD-123	BZT52C8V2-7-F	Diodes Inc.
FID1, FID2, FID3	0		Fiducial mark. There is nothing to buy or mount.	Fiducial	N/A	N/A
H1, H2, H3, H4	0		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	0		Standoff, Hex, 0.5"L #4-40 Nylon	Standoff	1902C	Keystone
Q6	0	30V	MOSFET, N-CH, 30V, 47A, SON 3.3x3.3mm	SON 3.3x3.3mm	CSD17308Q3	Texas Instruments
R10	0	DNP	RES, 84.5k ohm, 0.1%, 0.1W, 0603	0603	RG1608P-8452-B-T5	Susumu Co Ltd
R14	0	DNP	RES, 0 ohm, 5%, 0.1W, 0603	0603	CRCW06030000Z0EA	Vishay-Dale
R25	0	DNP	RES, 100k ohm, 1%, 0.1W, 0603	0603	CRCW0603100KFKEA	Vishay-Dale
TP1	0		Compact Probe Tip Circuit Board Test Points, TH, 25 per	TH Scope Probe	131-5031-00	Tektronix