

4 Bill of Materials, Board Layouts, and Schematic

4.1 Bill of Materials

Table 5. Bill of Materials

bq24707-001	RefDes	Value	Description	Size	Part Number	MFR
1	C1	2.2 μ F	Capacitor, Ceramic, 25V, X7R, 10%	1210	Std	Std
6	C2, C3, C4, C5, C6, C7	10 μ F	Capacitor, Ceramic, 25V, X7R, 10%	1206	Std	Std
0	C8, C13, C18, C27	OPEN	Capacitor, Ceramic, 25V, X7R, 10%	603	Std	Std
4	C9, C10, C20, C28	1 μ F	Capacitor, Ceramic, 25V, X5R, 10%	603	Std	Std
2	C11, C26	0.01 μ F	Capacitor, Ceramic, 25V, X7R, 10%	603	Std	Std
1	C12	6.8 nF	Capacitor, Ceramic, 25V, X7R, 10%	603	Std	Std
8	C14, C15, C16, C17, C19, C23, C24, C25	0.1 μ F	Capacitor, Ceramic, 25V, X7R, 10%	603	Std	Std
1	C21	0.047 μ F	Capacitor, Ceramic, 25V, X7R, 10%	603	Std	Std
1	C22	100 pF	Capacitor, Ceramic, 25V, X7R, 10%	603	Std	Std
1	C29					
2	D1, D4	BAT54-V-G	Diode, Schottky, 200-mA, 30-V	SOT23	BAT54-V-G	Vishay-Liteon
1	D2	BAT54C-V-G	Diode, Dual Schottky, 200-mA, 30-V	SOT23	BAT54C-V-G	Vishay-Liteon
1	D3	1SS400	Diode, High-Speed Switching 80V, 100mA	SOD-523	1SS400	Toshiba
1	D5	PDS1040	Diode, 10A 40V Schottky Barrier Rectifier	PowerDI 5	PDS1040	Diodes
1	D6	BAT30K	Small signal Schottky diodes, 300mA, 30V	SOD-523	BAT30KFILM	STMicroelectronics
1	J1	ED120/2DS	Terminal Block, 2-pin, 15-A, 5.1mm	0.40 x 0.35 inch	ED120/2DS	OST
1	J2	ED120/3DS	Terminal Block, 3-pin, 15-A, 5.1mm	0.60 x 0.35 inch	ED120/3DS	OST
2	J3, J4	ED555/4DS	Terminal Block, 4-pin, 6-A, 3.5mm	0.55 x 0.25 inch	ED555/4DS	OST
3	JP1, JP2, JP3	PEC02SAAN	Header, Male 2-pin, 100mil spacing, (2-pin strip)	0.100 inch x 2	PEC02SAAN	Sullins
1	JP4	PEC03SAAN	Header, Male 3-pin, 100mil spacing, (3-pin strip)	0.100 inch x 3	PEC03SAAN	Sullins
4		929950-00	Shorting jumpers, 2-pin, 100mil spacing,		929950-00	3M/ESD
1	L1	4.7 μ H	Inductor, SMT	0.255 x 0.270 inch	IHLP2525CZER4R7M01	Vishay
2	Q1, Q3	Si4435DDY-T1	MOSFET, PChan, -30V, -9A, 35millohm	PWRPAK S0-8	Si4435DDY-T1	Vishay
0	Q2	FDS6680A	MOSFET, NChan, 30V, 12.5A, 9.5millohm	PWRPAK S0-8	FDS6680A	Fairchild
2	Q4, Q5	Sis412DN-T1	MOSFET, NChan, 30V, 12A, 30millohm	PWRPAK 1212	Sis412DN-T1	Vishay
1	Q6	MMST3904-7-F	Trans, NPN, 40V, 200mA	SOT-323	MMST3904-7-F	Diodes
0	Q7	BSS138W-7-F	MOSFET, Nch, 50V, 200mA,	SOT-323	BSS138W-7-F	Diodes
0	Q8	Si1304BDL-T1	MOSFET, Nch, 30V, 0.9A, 270 m Ω	SOT-323	Si1304BDL-T1	Vishay
1	Q9	Si1304BDL-T1	MOSFET, Nch, 30V, 0.9A, 270 m Ω	SOT-323	Si1304BDL-T1	Vishay
1	Q10	DCX124EK-7-F	Transistor, Dual Complimentary Pre-Biased 50V, 100mA	SC-74	DCX124EK-7-F	Diodes
2	R1, R2	0.01	Resistor, Chip, 3/4W, 1% 150PPM, Resistor, Chip, 1W, 1% 75 PPM	1206	PMR18EZPFU10L0 or WSLP1206R0100FEA	Rohm Vishay/Dale
2	R3, R5	0	Resistor, Chip, 1/16W, 5%	603	Std	Std
1	R4	7.5	Resistor, Chip, 0.5W, 5%	603	Std	Std
2	R6, R7	3.9	Resistor, Chip, 0.5W, 5%	1210	Std	Std
0	R8, R9	4.02k	Resistor, Chip, 1/10W, 1%	603	Std	Std
0	R10	OPEN	Resistor, Chip, 1/16W, 1%	603	Std	Std

Table 5. Bill of Materials (continued)

bq24707-001	RefDes	Value	Description	Size	Part Number	MFR
7	R11, R18, R19, R30, R31, R34	10.0k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R12	33.0k	Resistor, Chip, 1/16W, 1%	603	Std	Std
0	R13	1.00M	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R14	66.5k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R15	430k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R16	10.0	Resistor, Chip, 1/4W, 1%	1206	Std	Std
0	R17	10.0k	Resistor, Chip, 1/4W, 1%	1206	Std	Std
4	R20, R28, R29, R37	100k	Resistor, Chip, 1/16W, 1%	603	Std	Std
0	R21	12.1k	Resistor, Chip, 1/4W, 1%	1206	Std	Std
2	R22, R27	316k	Resistor, Chip, 1/16W, 1%	603	Std	Std
2	R23, R24	220k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R25	60.4k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R26	9.09k	Resistor, Chip, 1/16W, 1%	603	Std	Std
2	R32, R40	0	Resistor, Chip, 1/16W, 5%	603	Std	Std
1	R33	3.01M	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R35	10.0k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R36	39.2k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R38	30.1k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R39	422k	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R41	100	Resistor, Chip, 1/16W, 1%	603	Std	Std
0	R42	3.01M	Resistor, Chip, 1/16W, 1%	603	Std	Std
1	R43	10.0	Resistor, Chip, 1/4W, 1%	1206	Std	Std
1	TP1	131-4244-00	Adaptor, 3.5-mm probe clip (or 131-5031-00)	0.200 inch	131-4244-00	Tektronix
11	TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12		Test Point, White, Thru Hole Color Keyed	0.100 x 0.100 inch	5002	Keystone
1	TP13		Test Point, Black, Thru Hole Color Keyed	0.100 x 0.100 inch	5001	Keystone
4			6-32 NYL nuts		NY HN 632	Building Fasteners
4	ST1,ST2,ST3,ST4	4816	STANDOFF M/F HEX 6-32 NYL 0.500"	sf_thvt_325_rnd	4816	Keystone
1	U1	bq24707RGR	IC, SMBus Charge Controller		bq24707RGR	TI
1	U2	LMV321IDBV	IC, Op-Amp Low Voltage Rail-to-Rail Output		LMV321IDBV	TI
1	-		Label	1.25 x 0.25 inch	THT-13-457-10	Brady
1	-	HPA558	2.75x3inch 4 layer 2oz. PCB	inch	HPA558	Any

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