

Author: PA3AKE +5V - Buck Converter

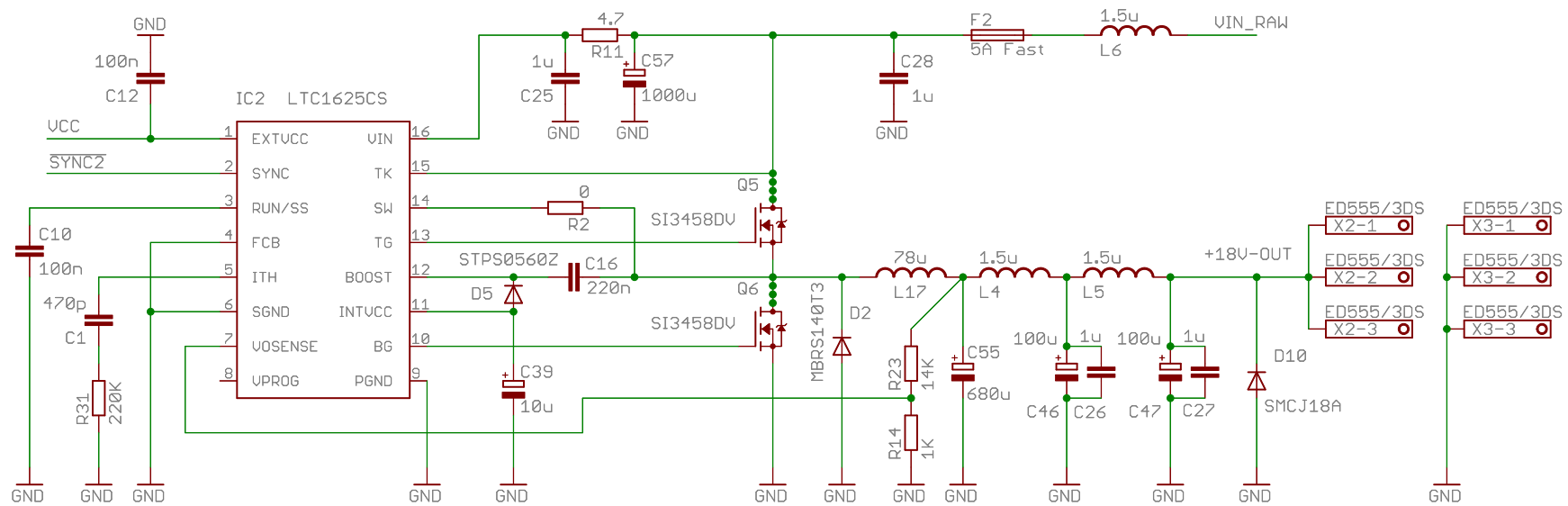
TITLE: SwitcherBoard

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+18V Buck Converter

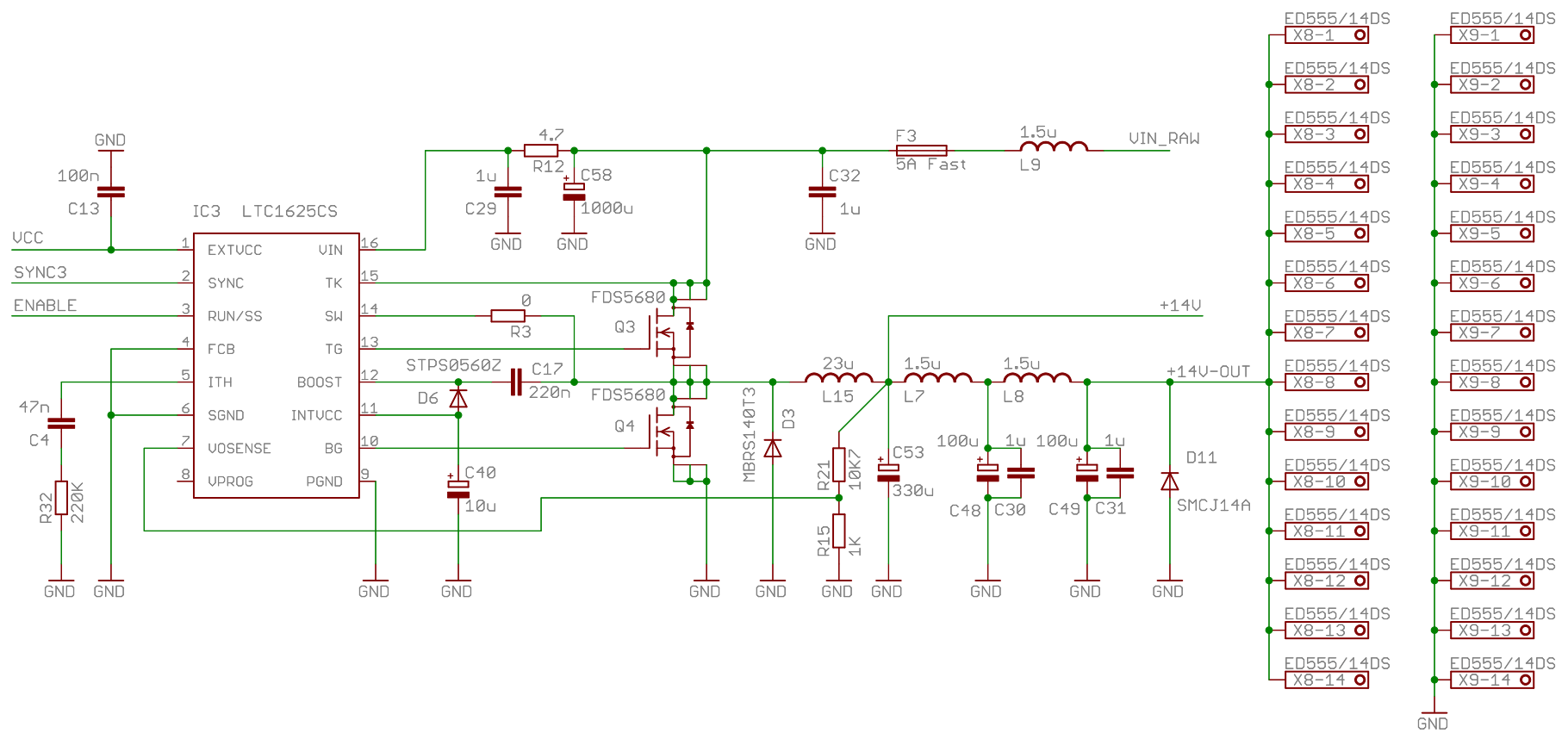
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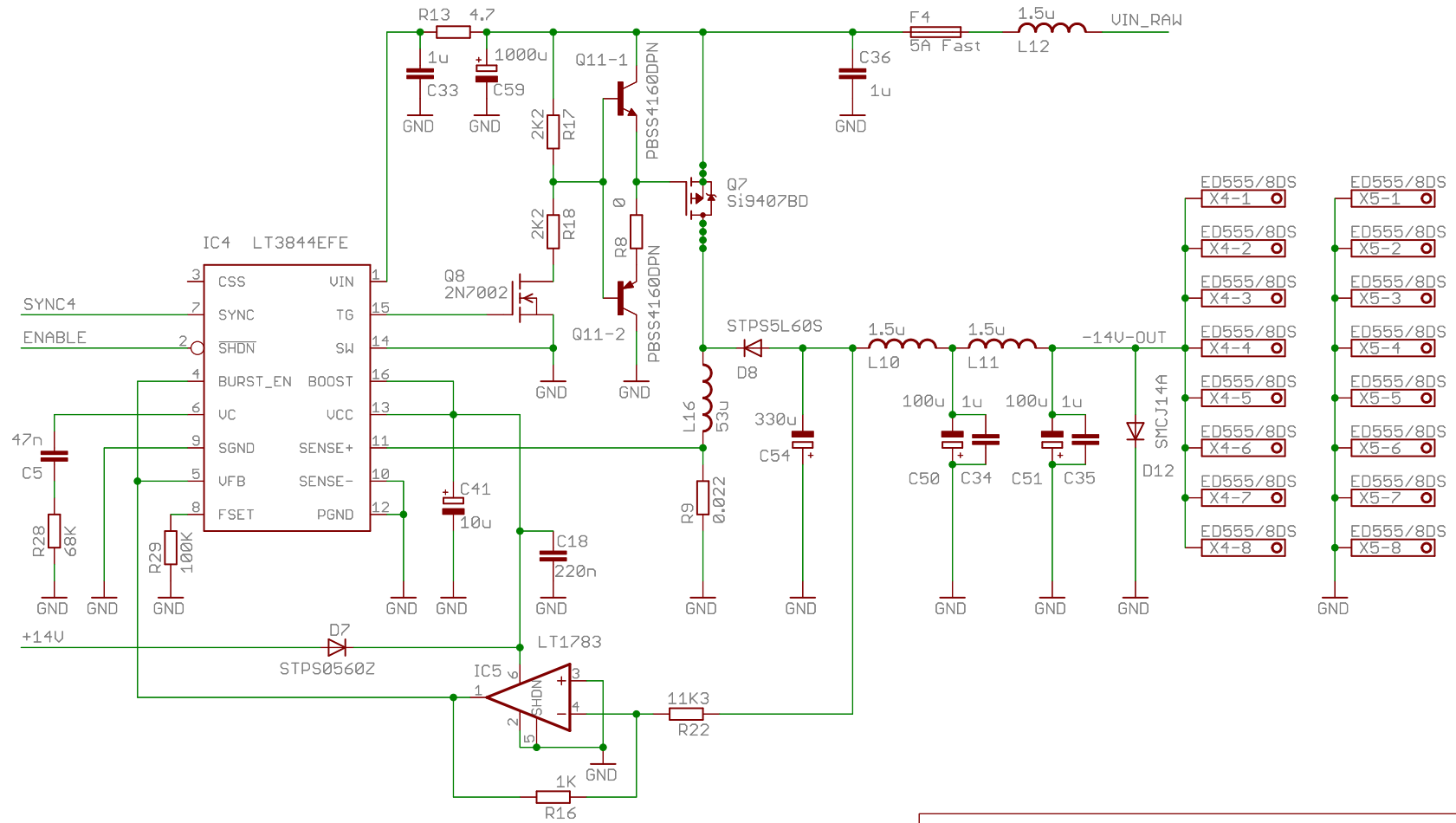


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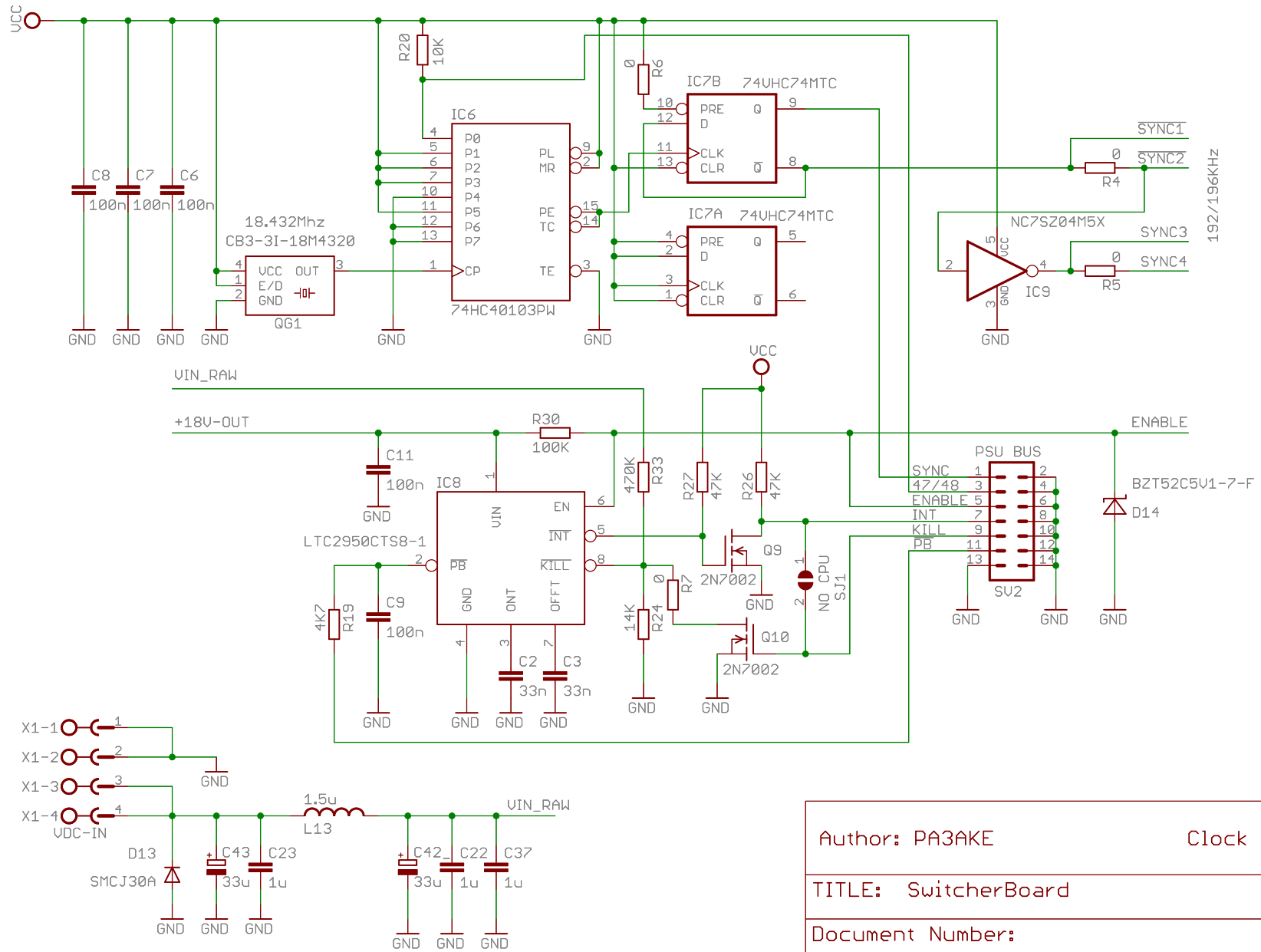
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Switcher Board Rev-A Partlist

Part	Value	Package	Description
-Resistors-----			
R1	0	1206	(Generic Thick Film resistor)
R2	0	1206	(Generic Thick Film resistor)
R3	0	1206	(Generic Thick Film resistor)
R4	0	1206	(Generic Thick Film resistor)
R5	0	1206	(Generic Thick Film resistor)
R6	0	1206	(Generic Thick Film resistor)
R7	0	1206	(Generic Thick Film resistor)
R8	0	1206	(Generic Thick Film resistor)
R9	0.022 1% 1W	2512	(Visgay/Dale, Current Sensing resistor, 22mOhm 1% 1W)
R10	4.7	1206	(Generic Thick Film resistor)
R11	4.7	1206	(Generic Thick Film resistor)
R12	4.7	1206	(Generic Thick Film resistor)
R13	4.7	1206	(Generic Thick Film resistor)
R14	1K 1%	1206	(Generic Thick Film resistor)
R15	1K 1%	1206	(Generic Thick Film resistor)
R16	1K 1%	1206	(Generic Thick Film resistor)
R17	2K2	1206	(Generic Thick Film resistor)
R18	2K2	1206	(Generic Thick Film resistor)
R19	4K7	1206	(Generic Thick Film resistor)
R20	10K	1206	(Generic Thick Film resistor)
R21	10K7 1%	1206	(Generic Thick Film resistor)
R22	11K3 1%	1206	(Generic Thick Film resistor)
R23	14K 1%	1206	(Generic Thick Film resistor)
R24	14K 1%	1206	(Generic Thick Film resistor)
R25	33K	1206	(Generic Thick Film resistor)
R26	47K	1206	(Generic Thick Film resistor)
R27	47K	1206	(Generic Thick Film resistor)
R28	68K	1206	(Generic Thick Film resistor)
R29	100K	1206	(Generic Thick Film resistor)
R30	100K	1206	(Generic Thick Film resistor)
R31	220K	1206	(Generic Thick Film resistor)
R32	220K	1206	(Generic Thick Film resistor)
R33	470K	1206	(Generic Thick Film resistor)
-Inductors-----			
L1	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L2	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L3	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L4	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L5	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L6	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)

L7	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L8	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L9	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L10	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L11	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L12	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L13	1.5u	T68-2	(Micrometals T68-2, 16 turns 1.3mm enameled copper)
L14	14u	C055310A2	(Magnetics Inc. C055310A2, 14 turns, 1.6mm enameled copper)
L15	23u	C055310A2	(Magnetics Inc. C055310A2, 19 turns, 1.6mm enameled copper)
L16	53u	C055310A2	(Magnetics Inc. C055310A2, 28 turns, 1.0mm enameled copper)
L17	78u	C055310A2	(Magnetics Inc. C055310A2, 31 turns, 1.0mm enameled copper)

-Capacitors-----

C1	470p	1206	(Generic C0G,NP0 MLCC)
C2	33n	1206	(Generic X7R MLCC)
C3	33n	1206	(Generic X7R MLCC)
C4	47n	1206	(Generic X7R MLCC)
C5	47n	1206	(Generic X7R MLCC)
C6	100n	1206	(Generic X7R MLCC)
C7	100n	1206	(Generic X7R MLCC)
C8	100n	1206	(Generic X7R MLCC)
C9	100n	1206	(Generic X7R MLCC)
C10	100n	1206	(Generic X7R MLCC)
C11	100n	1206	(Generic X7R MLCC)
C12	100n	1206	(Generic X7R MLCC)
C13	100n	1206	(Generic X7R MLCC)
C14	220n 50V	1206	(Generic X7R MLCC)
C15	220n 50V	1206	(Generic X7R MLCC)
C16	220n 50V	1206	(Generic X7R MLCC)
C17	220n 50V	1206	(Generic X7R MLCC)
C18	220n 50V	1206	(Generic X7R MLCC)
C19	1u 50V	1206	(Generic X7R MLCC)
C20	1u 50V	1206	(Generic X7R MLCC)
C21	1u 50V	1206	(Generic X7R MLCC)
C22	1u 50V	1206	(Generic X7R MLCC)
C23	1u 50V	1206	(Generic X7R MLCC)
C24	1u 50V	1206	(Generic X7R MLCC)
C25	1u 50V	1206	(Generic X7R MLCC)
C26	1u 50V	1206	(Generic X7R MLCC)
C27	1u 50V	1206	(Generic X7R MLCC)
C28	1u 50V	1206	(Generic X7R MLCC)
C29	1u 50V	1206	(Generic X7R MLCC)
C30	1u 50V	1206	(Generic X7R MLCC)
C31	1u 50V	1206	(Generic X7R MLCC)
C32	1u 50V	1206	(Generic X7R MLCC)
C33	1u 50V	1206	(Generic X7R MLCC)
C34	1u 50V	1206	(Generic X7R MLCC)

C35	1u	50V	1206	(Generic X7R MLCC)
C36	1u	50V	1206	(Generic X7R MLCC)
C37	1u	50V	1206	(Generic X7R MLCC)
C38	10u	16V	SMCB	(Generic Tantalium)
C39	10u	16V	SMCB	(Generic Tantalium)
C40	10u	16V	SMCB	(Generic Tantalium)
C41	10u	16V	SMCB	(Generic Tantalium)
C42	33u	35V	5x10x2mm	(Generic Aluminum)
C43	33u	35V	5x10x2mm	(Generic Aluminum)
C44	100u	25V	5x10x2mm	(Generic Aluminum)
C45	100u	25V	5x10x2mm	(Generic Aluminum)
C46	100u	25V	5x10x2mm	(Generic Aluminum)
C47	100u	25V	5x10x2mm	(Generic Aluminum)
C48	100u	25V	5x10x2mm	(Generic Aluminum)
C49	100u	25V	5x10x2mm	(Generic Aluminum)
C50	100u	25V	5x10x2mm	(Generic Aluminum)
C51	100u	25V	5x10x2mm	(Generic Aluminum)
C52	330u	16V	10x12.5x5mm	(Nichicon, Aluminum Organic Polymer, 7mOhm 6.1A, RR71C331MDN1)
C53	330u	16V	10x12.5x5mm	(Nichicon, Aluminum Organic Polymer, 7mOhm 6.1A, RR71C331MDN1)
C54	330u	16V	10x12.5x5mm	(Nichicon, Aluminum Organic Polymer, 7mOhm 6.1A, RR71C331MDN1)
C55	680u	25V	10x20x5mm	(Panasonic-ECG, Aluminum, 19mOhm 2.18A, EEU-FM1E681)
C56	1000u	35V	12.5x25x5mm	(Panasonic-ECG, Aluminum, 15mOhm 3.19A, EEU-FM1V102)
C57	1000u	35V	12.5x25x5mm	(Panasonic-ECG, Aluminum, 15mOhm 3.19A, EEU-FM1V102)
C58	1000u	35V	12.5x25x5mm	(Panasonic-ECG, Aluminum, 15mOhm 3.19A, EEU-FM1V102)
C59	1000u	35V	12.5x25x5mm	(Panasonic-ECG, Aluminum, 15mOhm 3.19A, EEU-FM1V102)

-Integrated Circuits-----

IC1	LTC1625CS	SOIC-16	(Linear Technology, Synchronous Buck Converter)
IC2	LTC1625CS	SOIC-16	(Linear Technology, Synchronous Buck Converter)
IC3	LTC1625CS	SOIC-16	(Linear Technology, Synchronous Buck Converter)
IC4	LT3844EFE	TSSOP-16	(Linear Technology, Asynchronous Buck/Boost Converter)
IC5	LT1783IS5	TSOT23-5	(Linear Technology, Rail to Rail low power OPAMP)
IC6	74HC40103PW	TSSOP-16	(NXP Semiconductors, synchronous 8-bit binary down counter)
IC7	74VHC74MTC	TSSOP-14	(Fairchild Semiconductor, Dual D-FF)
IC8	LTC2950CTS8-1	TSOT23-8	(Linear Technology, Push Button on/off Controller)
IC9	NC7SZ04M5X	SOT23-5	(Fairchild Semiconductor, Tiny Logic Inverter)
QG1	CB3-3I-18M4320	7mm x 5mm	(CTS-Frequency Controls. 5V 18.432MHz cmos oscillator)

-Diodes-----

D1	MBRS140T3	SMB	(ON Semiconductor, Schottky diode 1A 40V)
D2	MBRS140T3	SMB	(ON Semiconductor, Schottky diode 1A 40V)
D3	MBRS140T3	SMB	(ON Semiconductor, Schottky diode 1A 40V)
D4	STPS0560Z	SOD-123	(STMicroelectronics, Schottky diode 0.5A 60V)
D5	STPS0560Z	SOD-123	(STMicroelectronics, Schottky diode 0.5A 60V)
D6	STPS0560Z	SOD-123	(STMicroelectronics, Schottky diode 0.5A 60V)
D7	STPS0560Z	SOD-123	(STMicroelectronics, Schottky diode 0.5A 60V)

D8	STPS5L60S	SMC	(STMicroelectronics, Schottky diode 5A 60V)
D9	SM5908	SMC	(STMicroelectronics, Transient Voltage Suppressor diode, 5V 1500W)
D10	SMCJ18A	SMC	(Littelfuse Inc., Transient Voltage Suppressor diode, 18V 1500W)
D11	SMCJ14A	SMC	(Littelfuse Inc., Transient Voltage Suppressor diode, 14V 1500W)
D12	SMCJ14A	SMC	(Littelfuse Inc., Transient Voltage Suppressor diode, 14V 1500W)
D13	SMCJ30A	SMC	(Littelfuse Inc., Transient Voltage Suppressor diode, 30V 1500W)
D14	BZT52C5V1-7-F	SOD-123	(Diodes Inc., Zener diode, 500mW 5.1V)

-Transistors -----

Q1	FDS5680	SOIC-8	(Fairchild Semiconductor, N-Channel Logic Level MOSFET, 8A 60V 20mOhm)
Q2	FDS5680	SOIC-8	(Fairchild Semiconductor, N-Channel Logic Level MOSFET, 8A 60V 20mOhm)
Q3	FDS5680	SOIC-8	(Fairchild Semiconductor, N-Channel Logic Level MOSFET, 8A 60V 20mOhm)
Q4	FDS5680	SOIC-8	(Fairchild Semiconductor, N-Channel Logic Level MOSFET, 8A 60V 20mOhm)
Q5	SI3458BDV	TSOP-6	(Vishay/Siliconix, N-Channel Logic Level MOSFET, 3.2A 60V 100mOhm)
Q6	SI3458BDV	TSOP-6	(Vishay/Siliconix, N-Channel Logic Level MOSFET, 3.2A 60V 100mOhm)
Q7	SI9407BDY	SOIC-8	(Vishay/Siliconix, P-Channel Logic Level MOSFET, 4.7A 60V 120mOhm)
Q8	2N7002,215	SOT23-3	(NXP Semiconductors, N-Channel Logic Level MOSFET, 300mA 60V 50hm)
Q9	2N7002,215	SOT23-3	(NXP Semiconductors, N-Channel Logic Level MOSFET, 300mA 60V 50hm)
Q10	2N7002,215	SOT23-3	(NXP Semiconductors, N-Channel Logic Level MOSFET, 300mA 60V 50hm)
Q11	PBSS4160DPN	SOT457	(NXP Semiconductors, NPN/PNP transistor pair, 800mA 60V)

-Fuses-----

F1	0251005.MRT1L	PICO-II	(Littelfuse Inc., 5A 125V Pico-II fuse)
F2	0251005.MRT1L	PICO-II	(Littelfuse Inc., 5A 125V Pico-II fuse)
F3	0251005.MRT1L	PICO-II	(Littelfuse Inc., 5A 125V Pico-II fuse)
F4	0251005.MRT1L	PICO-II	(Littelfuse Inc., 5A 125V Pico-II fuse)

-Connectors-----

SV2	PSU BUS	ML14L	(14 pin male flatcable connector)
X1	VDC-IN	MSTBA 2.5/4-G-5.08	(conn header rt ang 4pos 5.08mm, PhoenixContact 1757268)
X1	VDC-IN	MSTB 2.5/4-ST-5.08	(conn term block plug 4pos 5.08mm, PhoenixContact 1757035)
X2	ED555/3DS	3-PIN-350	(On Shore Technology Inc., ED555/3DS, Terminal Block, 3.5mm 3pos PCB)
X3	ED555/3DS	3-PIN-350	(On Shore Technology Inc., ED555/3DS, Terminal Block, 3.5mm 3pos PCB)
X4	ED555/8DS	8-PIN-350	(On Shore Technology Inc., ED555/8DS, Terminal Block, 3.5mm 8pos PCB)
X5	ED555/8DS	8-PIN-350	(On Shore Technology Inc., ED555/8DS, Terminal Block, 3.5mm 8pos PCB)
X6	ED555/12DS	12-PIN-350	(On Shore Technology Inc., ED555/12DS, Terminal Block, 3.5mm 12pos PCB)
X7	ED555/12DS	12-PIN-350	(On Shore Technology Inc., ED555/12DS, Terminal Block, 3.5mm 12pos PCB)
X8	ED555/14DS	14-PIN-350	(On Shore Technology Inc., ED555/14DS, Terminal Block, 3.5mm 14pos PCB)
X9	ED555/14DS	14-PIN-350	(On Shore Technology Inc., ED555/14DS, Terminal Block, 3.5mm 14pos PCB)

