Date	Change Detail
C0 -> C1	
2021/04/16	1. Update design varitant(R165, R166) on SMPS controller circuit as we don't need at current design
	2. Change R94 and R116 (0.005R/1206) from WALSIN to Yageo (MPN: PE1206FRM470R005L)
	3. Change C140 from X7R 1.0UF 10V to X5R 1.0UF 10V
	4. TPA3221 SMUTE start circuit will impact on THD performance, remove R47 pull down resistor,DNP in BOM
	5. All amplifier Output Ferrite Beads(L4/L6/L8/L9) remove as it will impact on THD+N performance
2021/04/29	6. Add the SMPS Detection circuit(R143, R144, C171, C150, D24) , do not install
	7. Change C10, C104 from 0.1UF to 1.0UF and R2 to 1K for decreasing the inrush current when turning on
2021/05/07	8. Parallel C173 1nF cap to C103; C111 change to 1nF; R100, R108 change to 22ohm.------for RE improvement
	9. Change L11, L12 to 0ohm resistor(R170,R171); Add C172 1nF/1KV cap between Q6 D-S Pins;.------for CE improvement
	10. Change L13 to CKST1206-3.3UH\M-NCK, L14 to CKCH129-10UH\M;
	11. Change C109 from T542012227508 / WALSIN to T54201222750E / SAMSUN;
	12. Change J1 from T690300097400 / TJC3-6A-CS 6PIN 2.5MM to T690300108800 / PH-6A-CS 6PIN 2.0MM
2021/05/20	13. Add R172, R173 100K pulldown at CHR_EN and BOOST_ON
	14. Change R1 and R6 from 27K to 47K, R3 and R9 from 47K to 27K to provides 16V Gate to Source voltage
	15. DNI D24, C171, R144
	16. Change C93 and C94 to 1nF, D9 to RS1M, for EMC improvement
	17. C8, C68, C69, C91, C92 change to 8x10 size BPN is 856727-471M1VDE
	18. C29, C35, C36, C41 change to standard case 0506 (5x5.7mm) which is 856752-220M1CBB.
	19. DNI CY3, move to CY4 for EMC improvement.
C1 -> C2	
2021/09/3	21. DNI Q11, R164, R147 for voltage control
	22. DNI R126, Q9, R131, R132, R145 for current control
	23. Add F3(Fuse 63V/2A) at +25V near J1 to limit the power to mainboard
	24. Chang F2, F3 to 046801.5NRHF (Fuse 63V/1.5A) to limit the power lower than 100W.
	25. C135, C170 change to 100pF; Populated C147, C151, C152, C153, C154, C155, C167, C168, C169, C83, C84 to 100pF, add C174 100pF for RI improvement.
	26. D4, D5 change to D5V0X1B2LP-7B that lower cap.
	27. L7, L10 10uH CKCH88-10UH\M change to 4.7uH CKCH88-4.7UH\M for frequency response improvement.
	28. change R171 from 0 ohm to 300 ohm bead, add C78, C79, C80=0.1uF for RE improvement.
2021/09/16	29. adjust SMPS_DET circuit, change R109 from 10K to 0R; connect R172 to VCC of boost IC; add D25 for pull down by boost_on and smps_det.
	30. Double footprint a 0 Ohm resistor R180 across D1 (like R154 on Q3) so either can be used.
	31. Use two 47uF Caps for both AMP_WF_IN and AMP_TW_IN, and Use two 100uF Caps for AMP_GND_SIG change C29,C35,C36,C41 from 22uF to 47uF, add C171,C175 100uF for DC offset issue Flip C29, C36, C171, their + ploe are toward to connector and mainboard
	32. Add R179 10R/1206 paraller with R75 for derating requirement
	33. Change R171 to L12 300ohm bead, will use BLM31KN271SN1L @270Ω at 100MHz @Rated Current 4.5A at 85C
	34. F2&F3 change to 046801.5NRHF (63V/1.5A) for power measurement(the power to mainboard should lower than 100W.)
	35. Add D26, D27 TVS Diode on SMBus nearby J1 to for ESD debug, DNI these.
2021/09/30	36. add C176,C177,C178 0.1uF caps across Notch for EMI.
2021/10/08	37. Change R175 to 910K, C150 to 0.033uF for SMPS_DET during off/low power.
2021/10/09	38. Populate C148 and C149 for RI improvement.
2021/10/18	39. Add R181 & R182 to bridge VBAT across Thermal Notch adding net VBAT_Notch (TD)
C2 -> C_final	
2022/02/22	1. Change R130 to 120K, R163 to 13K for reduce the system charging voltage to 16.48V to compensate for cell safety performance.
	2. DNI R172 to float EN to enable Boost
	3. Change R178 to 47Kohms/0402, Change C150 to 2200pF/0402, add C70 100pF/0402 but unpopulated for option
	4. Change C123 to 1nF/0402, C120 to 10nF/0402- adjust boost soft time to 3ms
	5. Change C123 to 1nF/0402, C120 to 10nF/0402- adjust boost soft time to 3ms
	6. Add R174 470K/0402, R176 68K/0402, R36 100R/0402 and Q15 MMBT3904WT1G, J2-pin9 change to BAT_DET
	7. C119 and C176 change to 0603 and move to PCB bottom for low risk of shorten in Humidity test.
2022/02/28	8. MOV1 change to B72214S0511K101 for Safety
	9. C29,C35,C36,C41 change from VEJ470M1CTR-0506 to VEJ470M1CTR-0606S for meeting BOSE PSL
2022/03/03	10. DNI Q12, D18, R160, U11, C131, R168, R167, R169 that not used in C_final

Date	Change Detail
C2 -> C_final	
2022/03/08	11. add C71,C180,C181,C182 220pF, add R183, R184, R185, R186 4.7R/0603 snubber at amplifier PWM output
	12. add C179 2.2UF/16V at OTW_CLIP to filter for RE 30MHz
	13. swap all the input and output of WF and TW
2022/03/14	14. Change C29, C35, C36, C41 from 47uF to 10uF with Bose PN: 856752-100M1CAB (Lelon VEJ100M1CTR-0406S)
	15. Change C171 and C175 from 100uF to 22uF with Bose PN: 856752-220M1CBB (Lelon VEJ220M1CTR-0506S)
2022/03/15	16. Delete R86, R141 0R jumper
	17. change R23,R141 to 470R, add R32,R86 1K, add C151,C183 2200pF for attenuating the DAC output by 5.8dB
	18. Add C184 1nF/1KV unpopulated for RE option
	19. R120, R122 change to 22ohm, R124, R125 change to 4.7ohm
	20. Change R153, R155, R156, R157, R162 to 120ohm, C152, C153, C154, C155, C168 to 220pF for RE improvement
	21. Delete R170,R27,R28,R140,R115 0R jumper
C_final -> DV	
2022/07/10	22 to 27 are updated for EFT, ESD and RE solution
	22. Change R158, R145, R147, R149, R151, R152, R161 to 120ohm
	23. Add R183,R184,R185,R186 4.7 ohm, add C71,C180,C181,C182 220pF
	24. Delete C13 and C14, add C157,C158 100pF/50V, change R7,R8,R19 to L4,L6,L8 BLM15HG102SN
	25. Delete R71, D10, C87, add C172 150pF/1206/1KV
	26. CY1,CY2 =1000pF, CY3=330pF, remove CY4
	27. Change R57, R58, R59, R60, R63, R64, R65, R66 to 56K
	28. C29,C35,C36,C41 change from10uF to 2.2uF, C171 and C175 change from 22uF to 4.7uF for TPA3221 start up issue
2022/07/27	29. add R7 0R jumper for Boost start-up glitch for option-JIRA 1759
	30. change C150 from 2200pF to 10nF for SMPS_DET shake - JIRA 1935
2022/08/03	31. change R3,R9 from 27K to 68K for meeting derating of VGS - JIRA 2033
DV -> PQ	
2022/11/08	32. DNI CY1 and CY2 for CE improvement
	33. DNI the components for validation test due to no need for PQ and SOR DNI R12,R14,R15,R22,R25,C16,C20,C21,C27,C28,C30,J4,R40,R41,R42,R43,R45,C50,C51,C52,C53,C54,C55,J6
	34. R150 change from 12.7K to 20K. JIRA- 2211
PQ -> SOR	
2023/01/07	35.SMbus Signal Integrity Improvement: change C157,C158 from 100pF to DNI

BOSE

Baby Yoda Power_Amp Board

Product: Baby Yoda			
File Name: Modify history.SchDoc			
Part Number: Part Number		Size: A3	
Revision: 3.0.0	Drawn By: Patience.Huang	Mod By: Patience.Huang	
Status: PQ/SOR	Checked By: Vincent.Xu	Mod Date: 2023/1/7	
Lead Engineer: Kelvin.Lo		Approved By: Kelvin.Lo	
Date: 2023/1/7	Time: 16:27:53	Sheet: 1 of 5	

Description of Changes/Notes	Rev.
	3.0

U_Amplifier
Amplifier

AMP_WF_IN
AMP_TW_IN
AMP_MUTE
AMP_RESET
AMP_FAULT
AMP_CLIP_OTW
AMP_NTC
AMP_GND_SIG

U_SMPS
SMPS.SchDoc

SMPS_26V
SMPS_SWITCHING

BOOST&CHARGE
Boost&CHR

SMPS_DET
BOOST_ON
BAT_ON
CHR_EN
VBAT
POWER_26V

Modify history
Modify history.SchDoc

FID1 FID2 FID4

MH1 MH2 MH3 MH4 MH7 MH6 MH5
E_GND1
E_GND

PH-6A-CS
J1
TP1 TP2 TP5
F3 63V 1.5A
TP201
+25V
SMPS_VCC
TP3 SMBus_SCL
TP4 SMBus_SDA
C163 .10UF 50V
C164 .10UF 50V
C14 100PF 50V
C13 100PF 50V

Connect to Main Board

IRF9321TRPBF
POWER_26V
TP9
Q1
TP8
L1
BLM31SN500SN1L
10A@50R@100MHz
+25V
TP12
C2 1.0UF 50V
TP19
C160 .10UF 50V
C3 .10UF 50V
R1 47K
R2 1K
TP21
R3 68K
TP27
Q2
SYS_ON
R4 10K
TP31
C4 .10UF 50V
R5 100K
2N7002K-7

SMPS Power Detect

SMPS_26V
R171 1K
TP204
MMBT3904WT1G
Q13
SMPS_SWITCHING
C70 100PF 50V
C150 0.01UF 50V
TP205
R175 910K
TP7
SMPS_DET
R142 100
TP17
Q14
2N7002K-7
TP206
TP18
Q10
R146 470K
R150 20K
R7 0 OHM
MMBT3904WT1G

Connect to Main Board

0.5S-4-22PTFAR
J2
C1 .10UF 50V
TP6
+5V
C135 100PF 50V
C170 100PF 50V
C147 100PF 50V
C149 100PF 50V
C148 100PF 50V
TP10 AMP_WF_IN
TP11 AMP_GND_SIG
AMP_TW_IN
TP14 R158 120 SMPS_DET
TP15 R145 120 BAT_DET
TP16 R147 120 BAT_ON
R149 120 TP20 POWER_ON
R151 120 CHR_EN
TP22 R152 120 BOOST_ON
TP23 R161 120 SYS_ON
TP24
TP25 R153 120 AMP_NTC
TP26 R155 120 AMP_RESET
TP28 R156 120 AMP_MUTE
TP29 R157 120 AMP_FAULT
TP30 R162 120 AMP_CLIP_OTW
C152 220PF C153 220PF
C154 220PF C155 220PF
C167 100PF C168 220PF
C83 100PF 50V
C84 100PF 50V
C169 100PF 50V

R180 0 OHM
SMPS_26V
D1 TSUP10M45SH
TP32
DMG4435SSS-13
Q3
TP33
L2
BLM31SN500SN1L
10A@50R@100MHz
POWER_26V
C8 470UF 35V
C11 1.0UF 50V
C9 .10UF 50V
C10 1.0UF 50V
R6 47K
TP36
C161 .10UF 50V
C7 .10UF 50V
C5 .01UF 50V
C6 330PF 50V
R9 68K
TP39
Q4
POWER_ON
R10 10K
TP40
C15 .10UF 50V
R11 100K
2N7002K-7

BAT Detect

TP149 BAT_DET
R36 100
TP166
VBAT
TP169
R174 470K
Q15
R176 68K
MMBT3904WT1G

BAT CONNECTION

VBAT
J3
L4 BLM15HG102SN1D
SMBus_SDA
SMBus_SCL
TP37
L6 BLM15HG102SN1D
TP38
D4 D5
C157 100PF 50V
C158 100PF 50V

SMPS_26V
D2 SBR2M60S1F-7
TP34
F2 63V 1.5A
SMPS_VCC
VBAT
TP35
D3 SBR2M60S1F-7
D21 SBR2M60S1F-7
D22 ESDCAN01-2BLY
C12 .10UF 50V

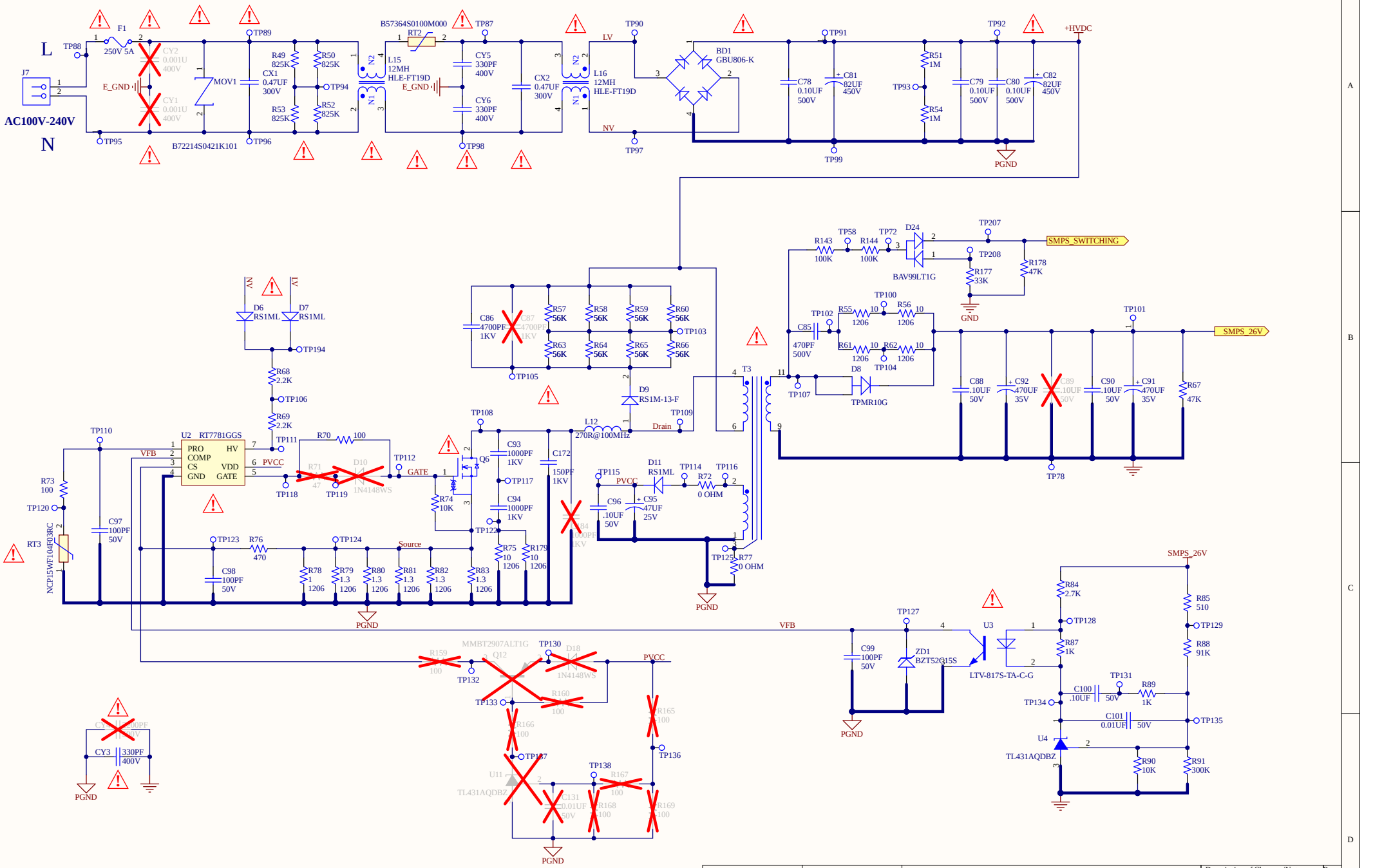
To Main Board

BOSE

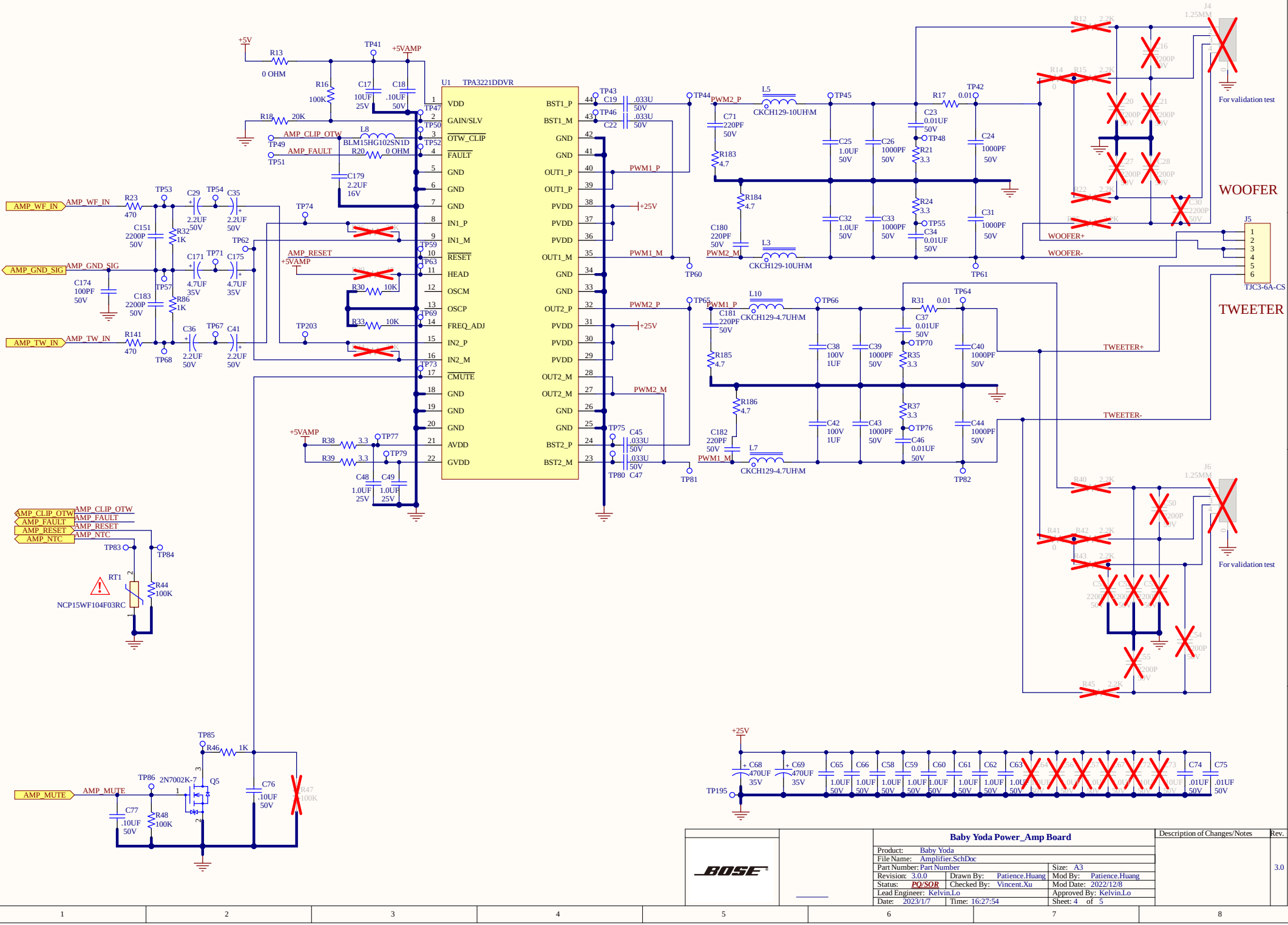
Baby Yoda Power_Amp Board

Product: Baby Yoda			
File Name: System Block.SchDoc			
Part Number: Part Number		Size: A3	
Revision: 3.0.0	Drawn By: Patience.Huang	Mod By: Patience.Huang	
Status: PQ/SOR	Checked By: Vincent.Xu	Mod Date: 2023/1/7	
Lead Engineer: Kelvin.Lo		Approved By: Kelvin.Lo	
Date: 2023/1/7	Time: 16:27:53	Sheet: 2 of 5	

Description of Changes/Notes	Rev.
	3.0

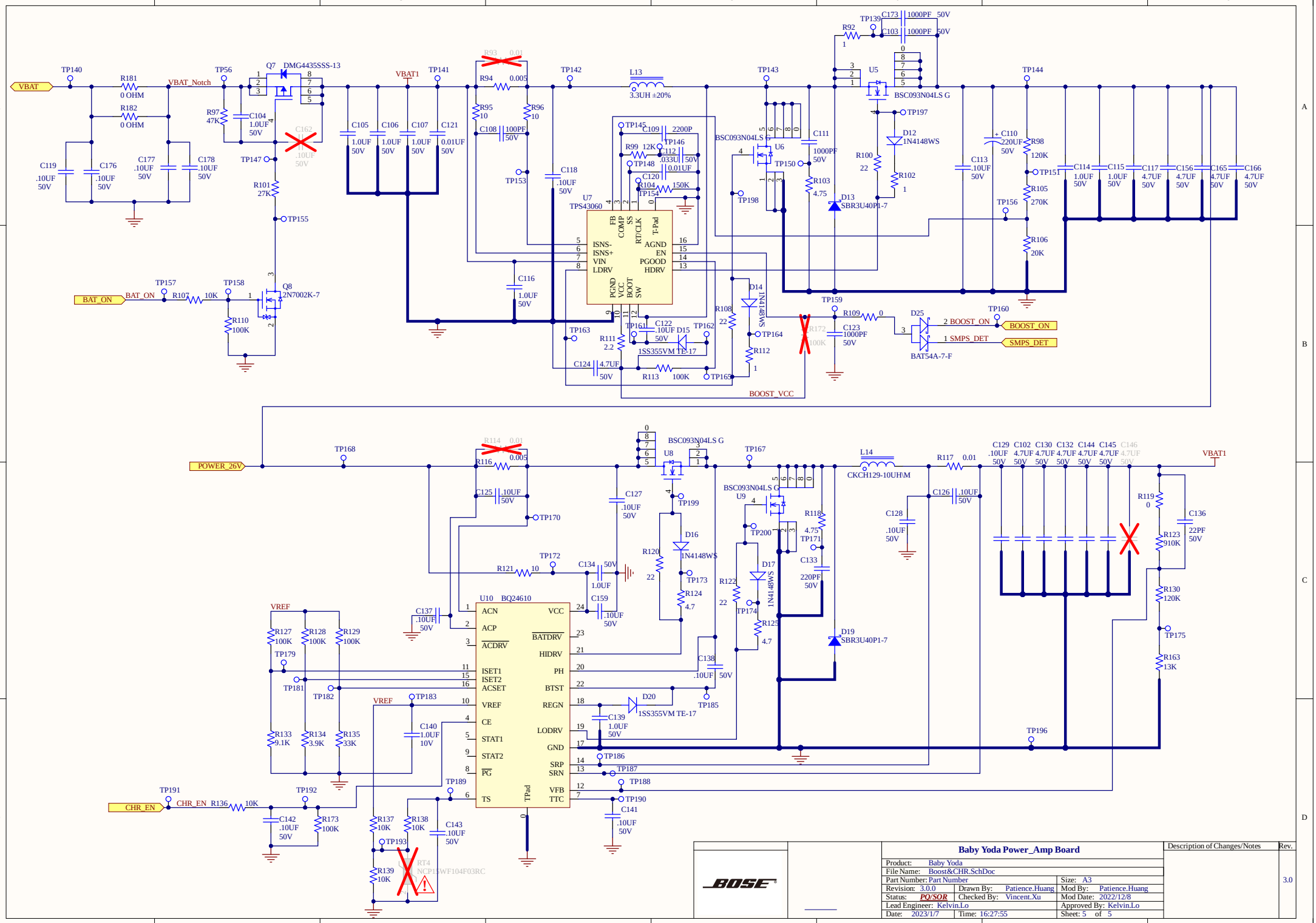


BOSE		**Baby Yoda Power_Amp Board**	Description of Changes/Notes / Rev.
		Product: Baby Yoda	
		File Name: SMPS.SchDoc	
		Part Number: Part Number	Size: A3
		Revision: 3.0.0 / Drawn By: Patience.Huang	Mod By: Patience.Huang
		Status: PQ/SQR / Checked By: Vincent.Xu	Mod Date: 2022/12/8
		Lead Engineer: Kelvin.Lo	Approved By: Kelvin.Lo
		Date: 2023/1/7 / Time: 16:27:54	Sheet: 3 of 5
			3.0



Baby Yoda Power_Amp Board			
Product: Baby Yoda			
File Name: Amplifier.SchDoc			
Part Number: Part Number		Size: A3	
Revision: 3.0.0	Drawn By: Patience.Huang	Mod By: Patience.Huang	
Status: PQ/SOR	Checked By: Vincent.Xu	Mod Date: 2022/12/8	
Lead Engineer: Kelvin.Lo		Approved By: Kelvin.Lo	
Date: 2023/1/7	Time: 16:27:54	Sheet: 4 of 5	

Description of Changes/Notes	Rev.
	3.0



Baby Yoda Power_Amp Board			
Product: Baby Yoda			
File Name: Boost&CHR.SchDoc			
Part Number: Part Number		Size: A3	
Revision: 3.0.0	Drawn By: Patience.Huang	Mod By: Patience.Huang	
Status: PQ/SQR	Checked By: Vincent.Xu	Mod Date: 2022/12/8	
Lead Engineer: Kelvin.Lo		Approved By: Kelvin.Lo	
Date: 2023/1/7	Time: 16:27:55	Sheet: 5 of 5	

Description of Changes/Notes	Rev.
	3.0