

8

7

6

5

4

3

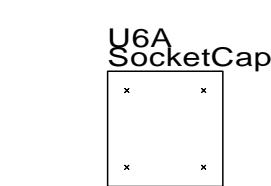
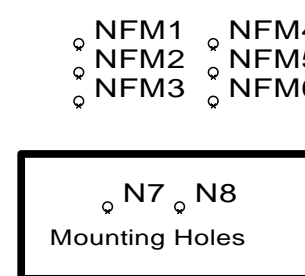
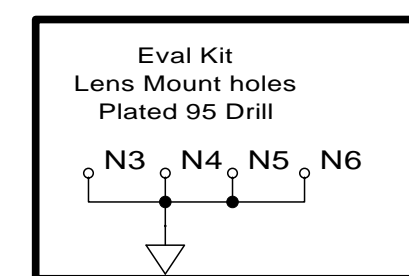
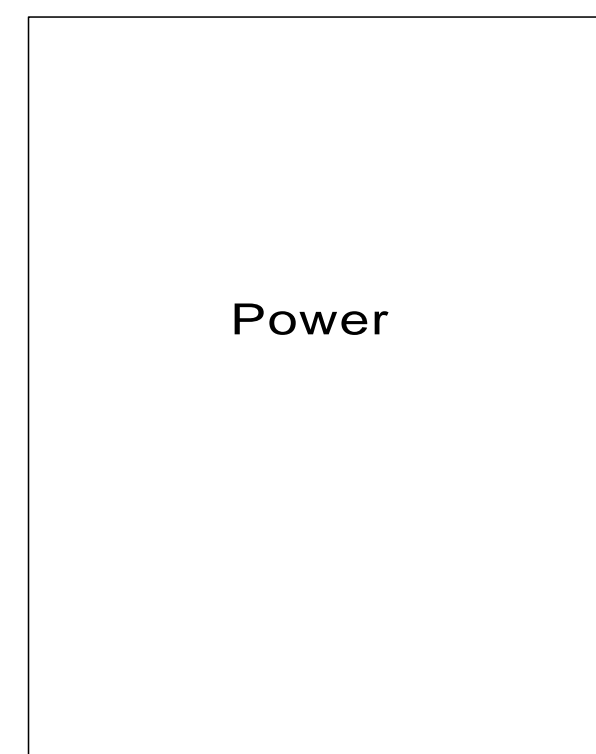
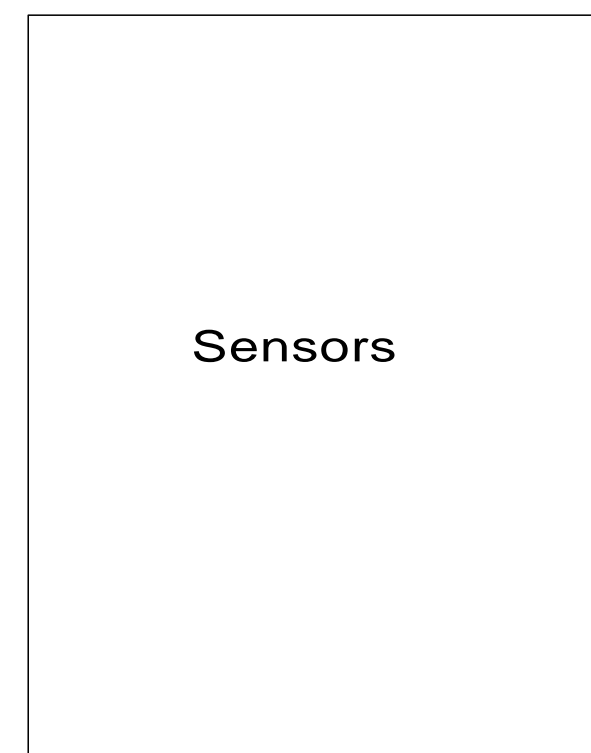
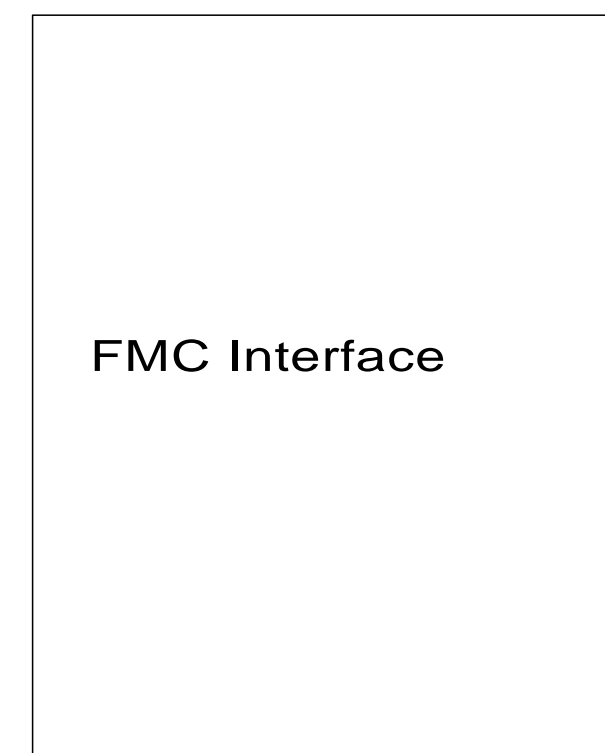
2

1

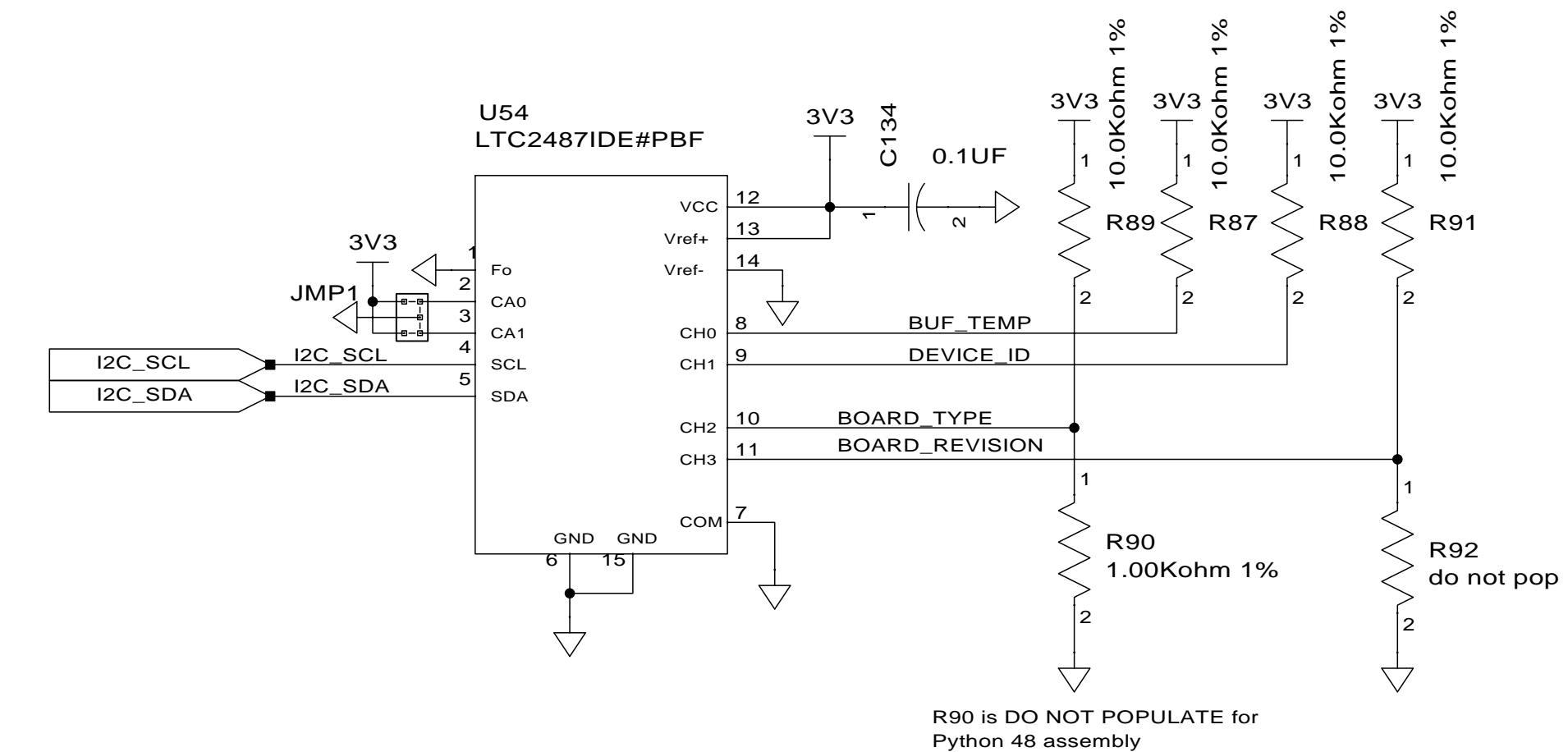
MULTIPLE ASSEMBLIES NOTE:

48 Pin Socket Assembly: 30001364  
84 Pin Socket Assembly: 30001478

REVISIONS				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL
		See Page 3, POWER / OSCILLATOR	April 2016	



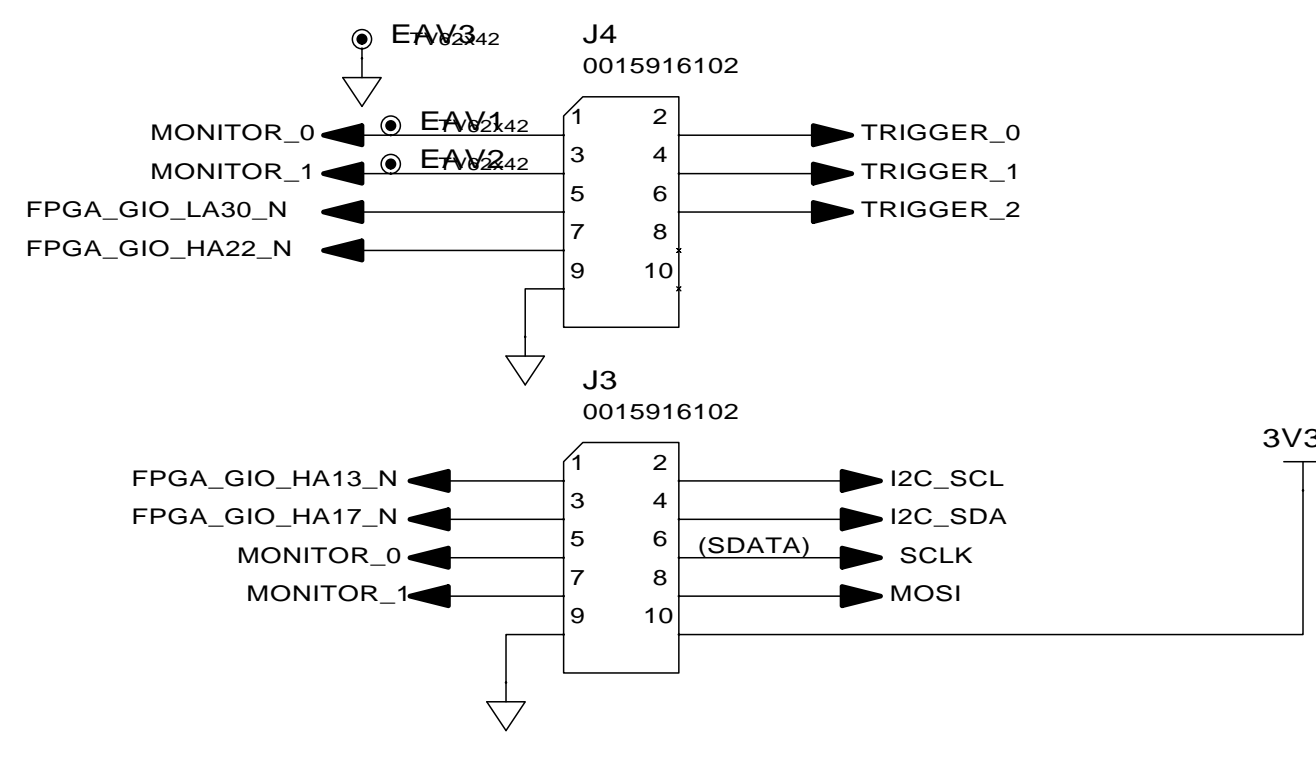
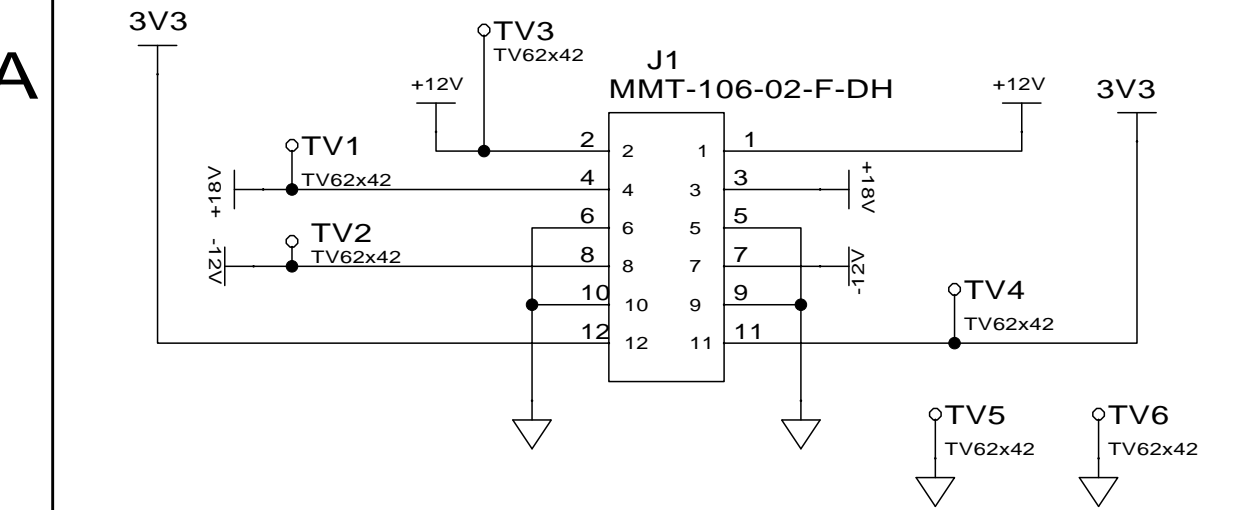
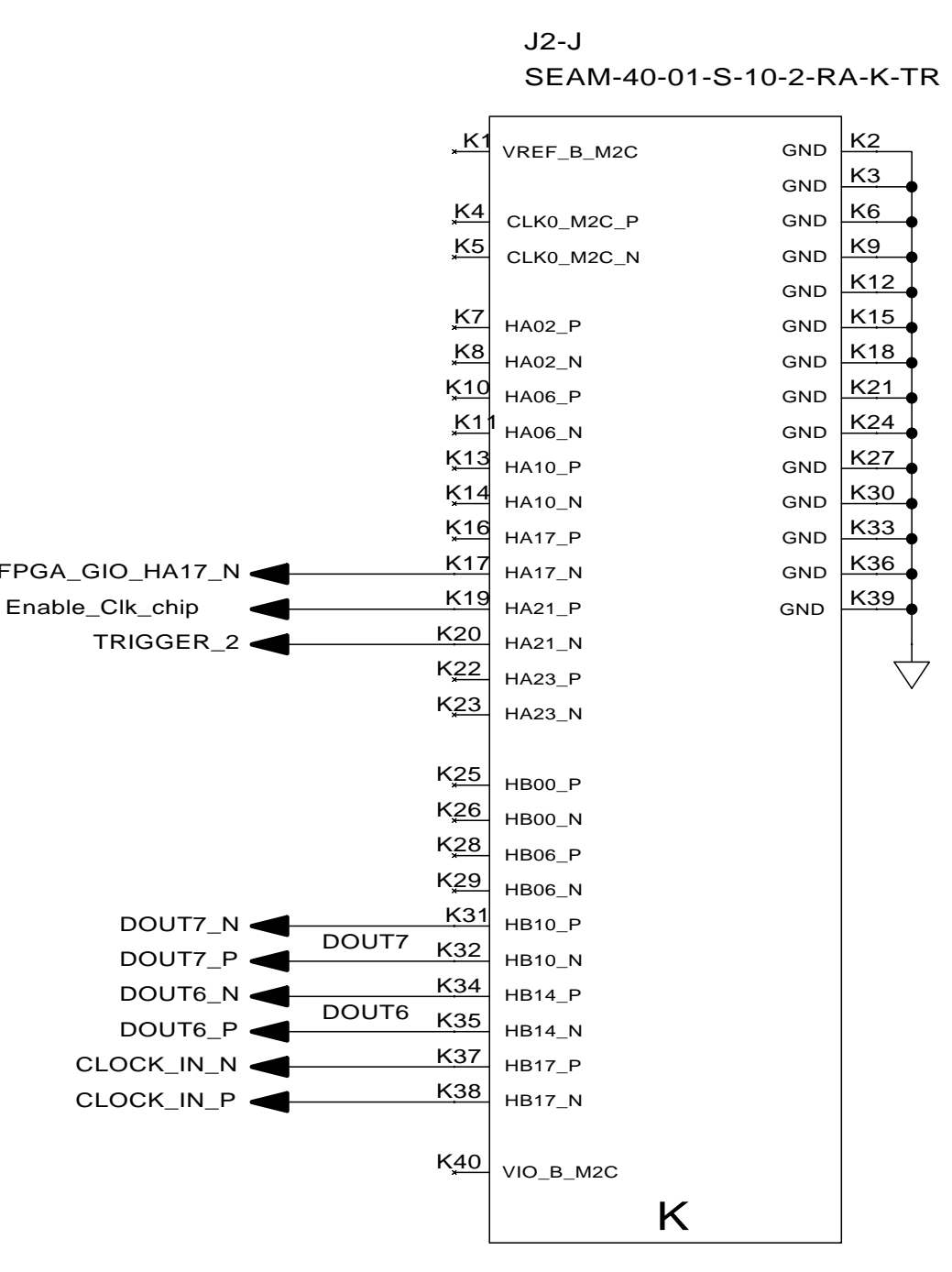
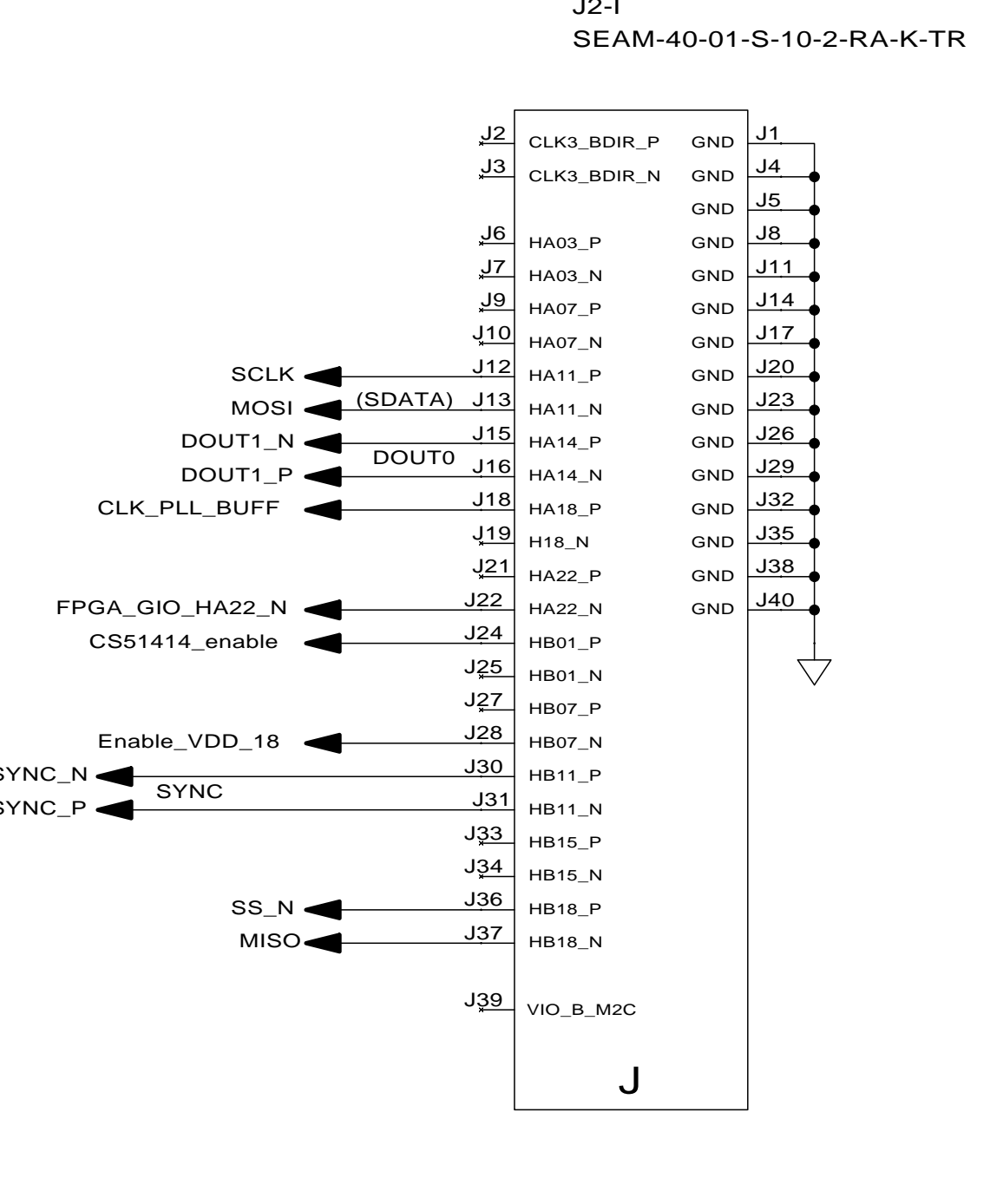
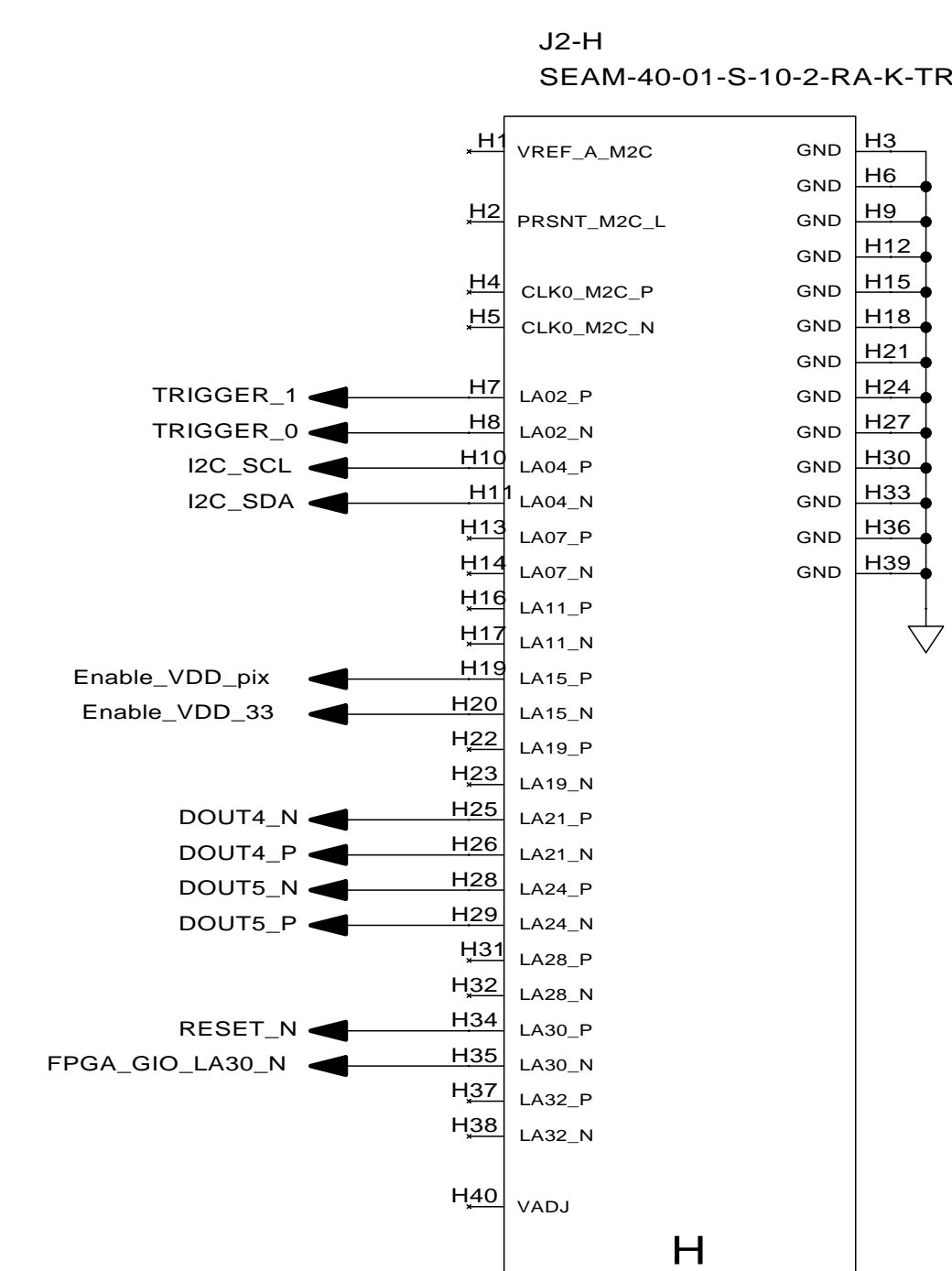
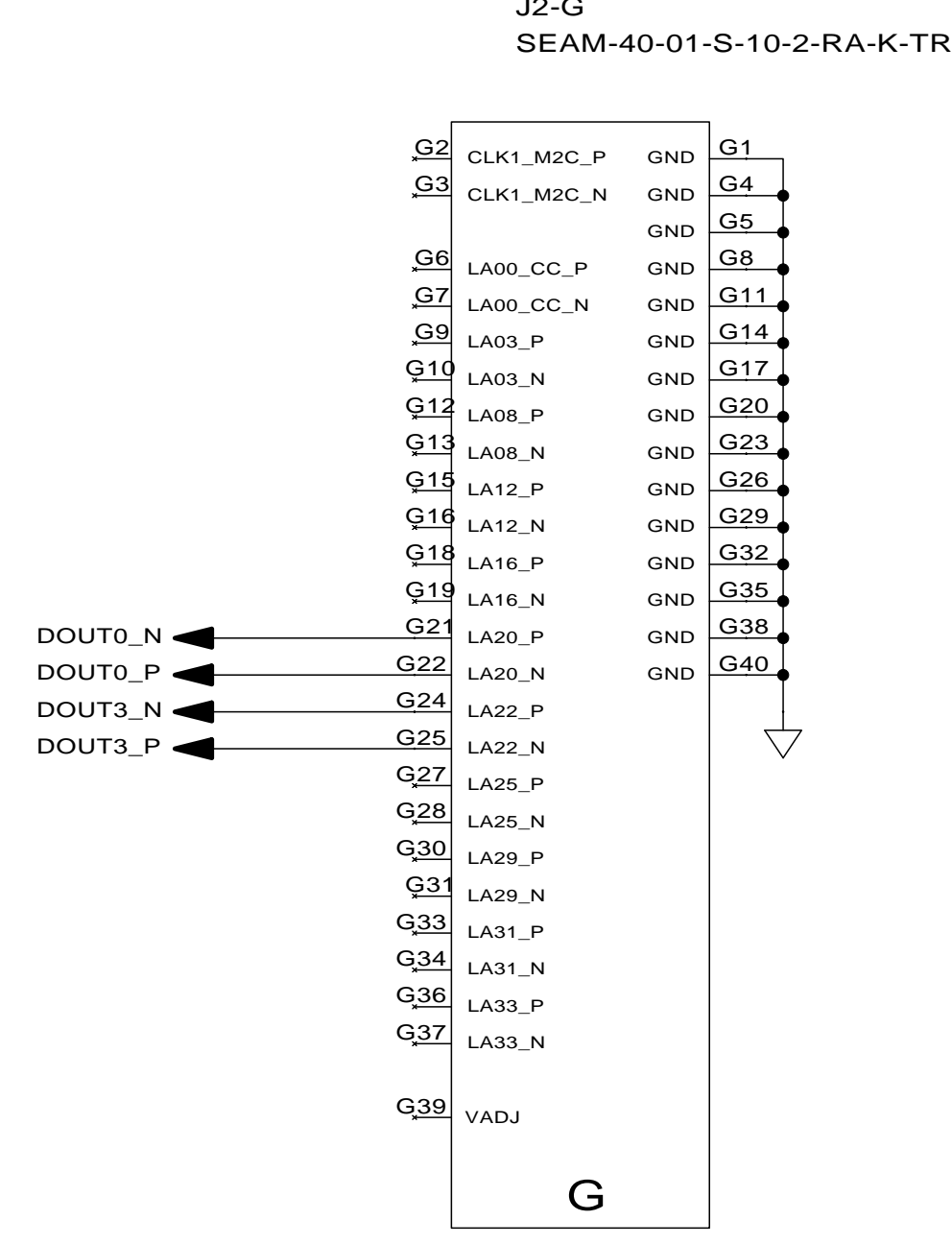
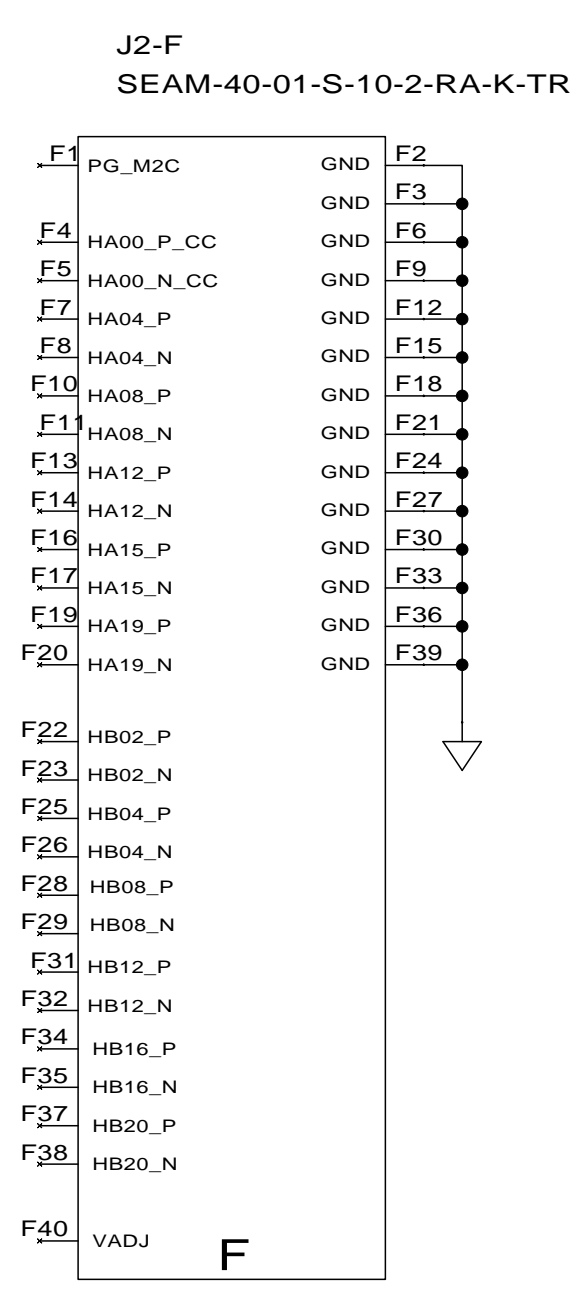
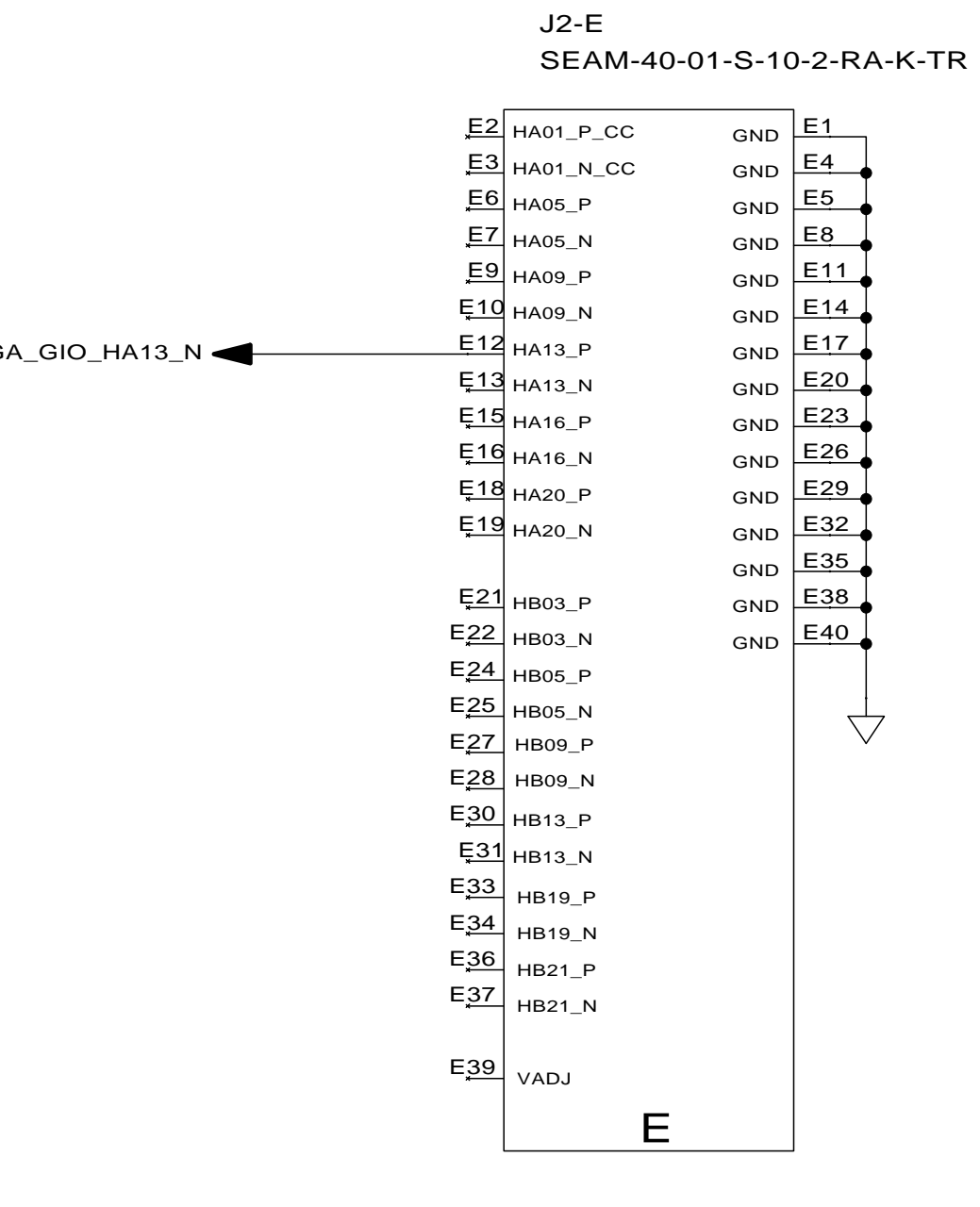
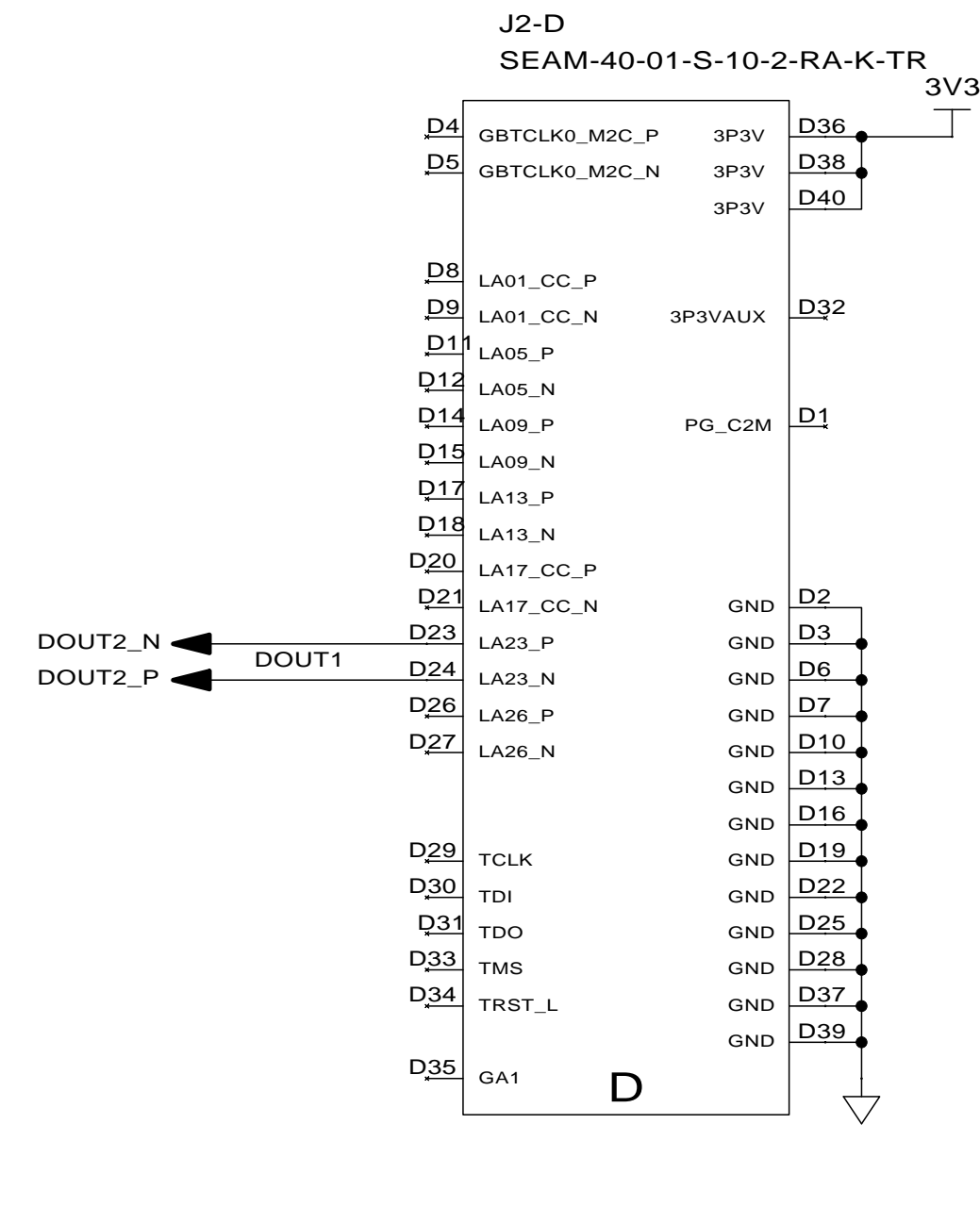
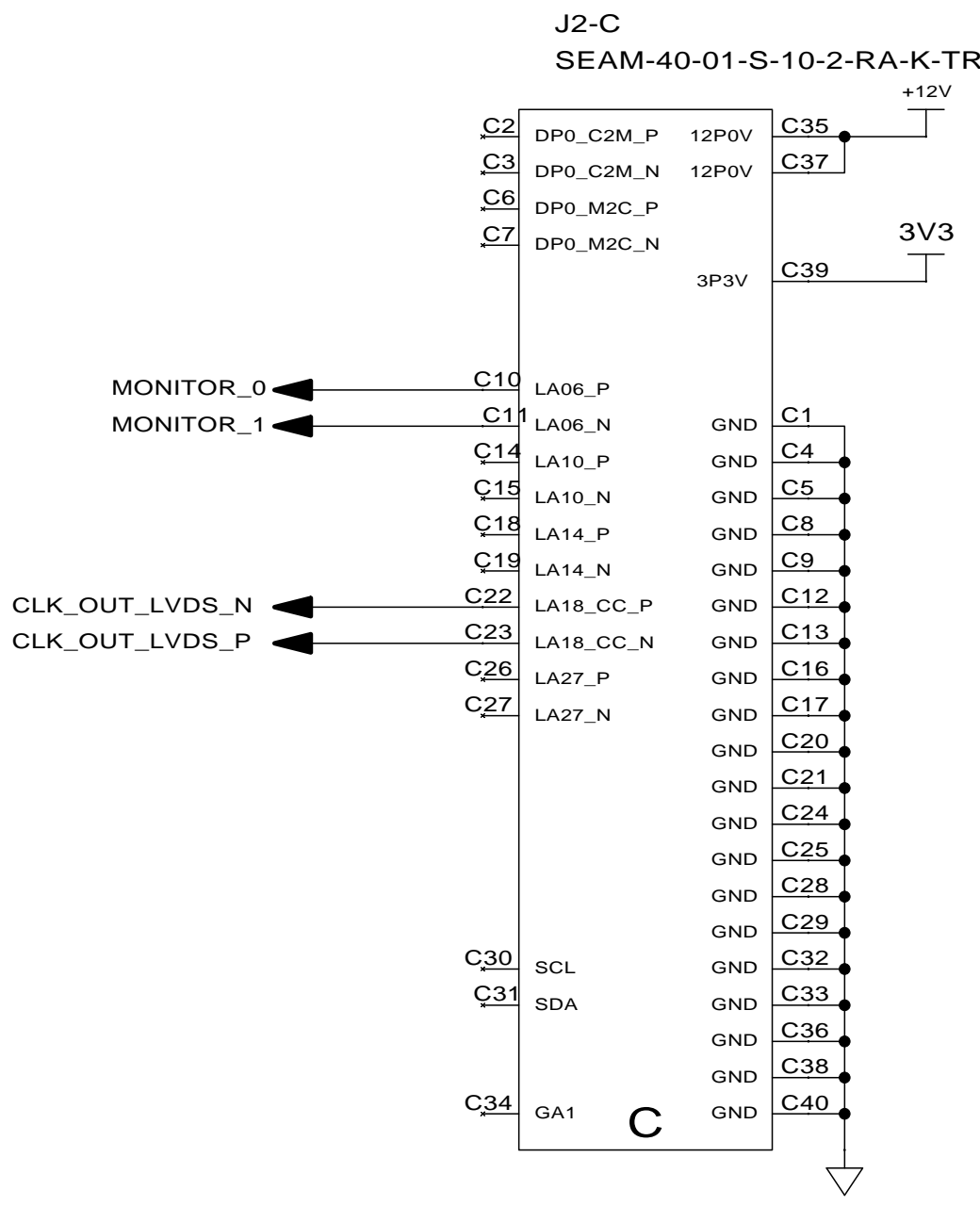
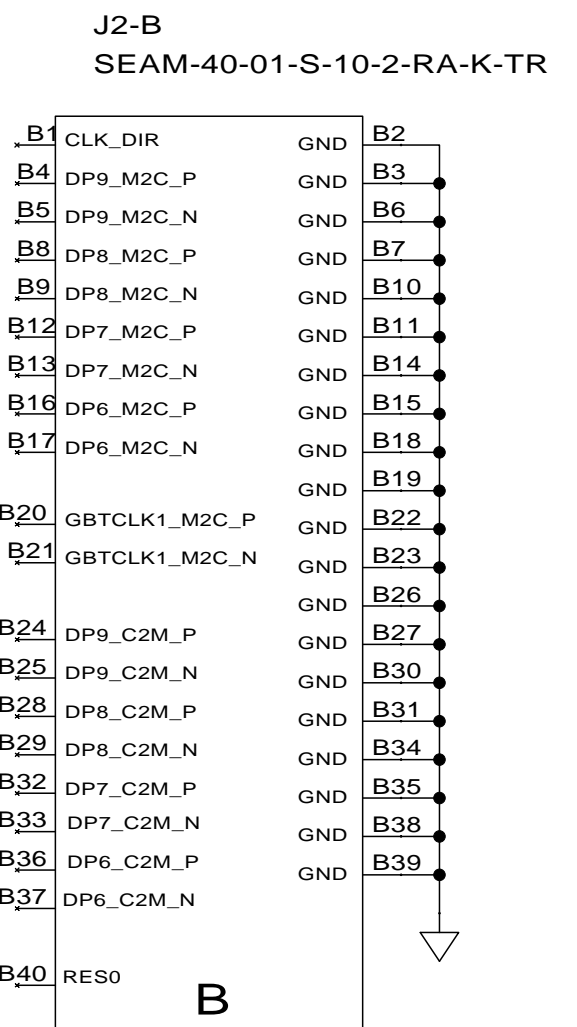
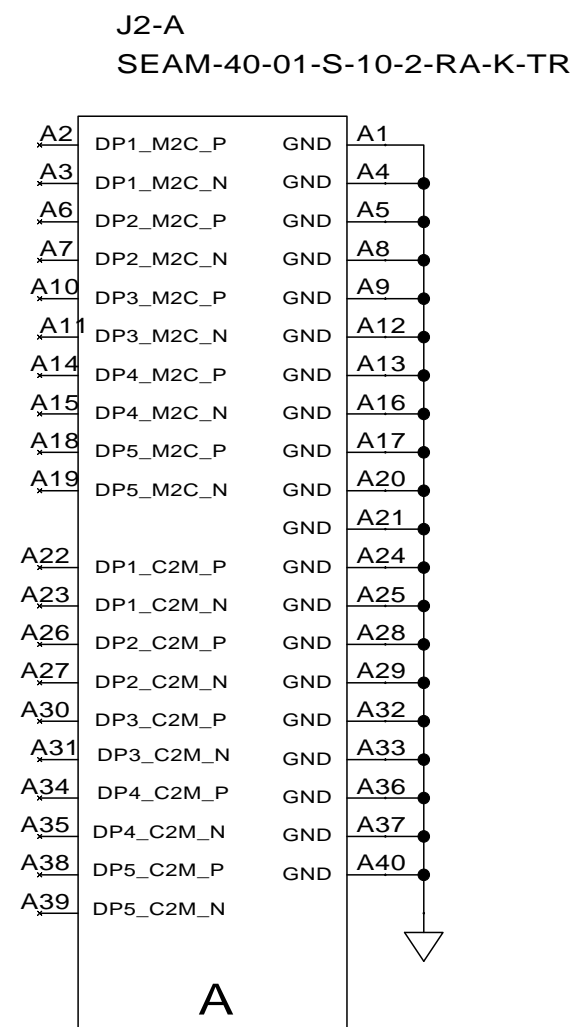
U6A Socket Cap is NOT USED for 48 Pin Socket Assembly



PCB 30001363-Rev2  
TOP LEVEL

UNLESS OTHERWISE SPECIFIED		MATERIAL	DIMENSIONS APPLY AFTER FINISH WHERE TOTAL TOLERANCE IS .001 INCHES OR LESS AND ON ALL THREADS. IN ALL OTHER PLACES DIMENSIONS APPLY BEFORE FINISH.		ON Semiconductor
DIM. ARE IN		FINISH	DR		NAME
2 PL DEC TOL ±			QA CHK		PYTHON ISP8 FMC REFERENCE PCB
3 PL DEC TOL ±		ENGR		SIZE	
ANGULAR TOL ±		ENGR		D	
SURF ROUGHNESS		ECN NO.		DWG NO.	
EDGES		REL DATE		PS-1698	
INSIDE RADII		SCALE		PROGRAM CADSTAR	
NEXT ASSY	USED ON	NEXT ASSY	FNAL ASSY	SHEET	1 of 4
APPLICATION	QUANTITY REQD				

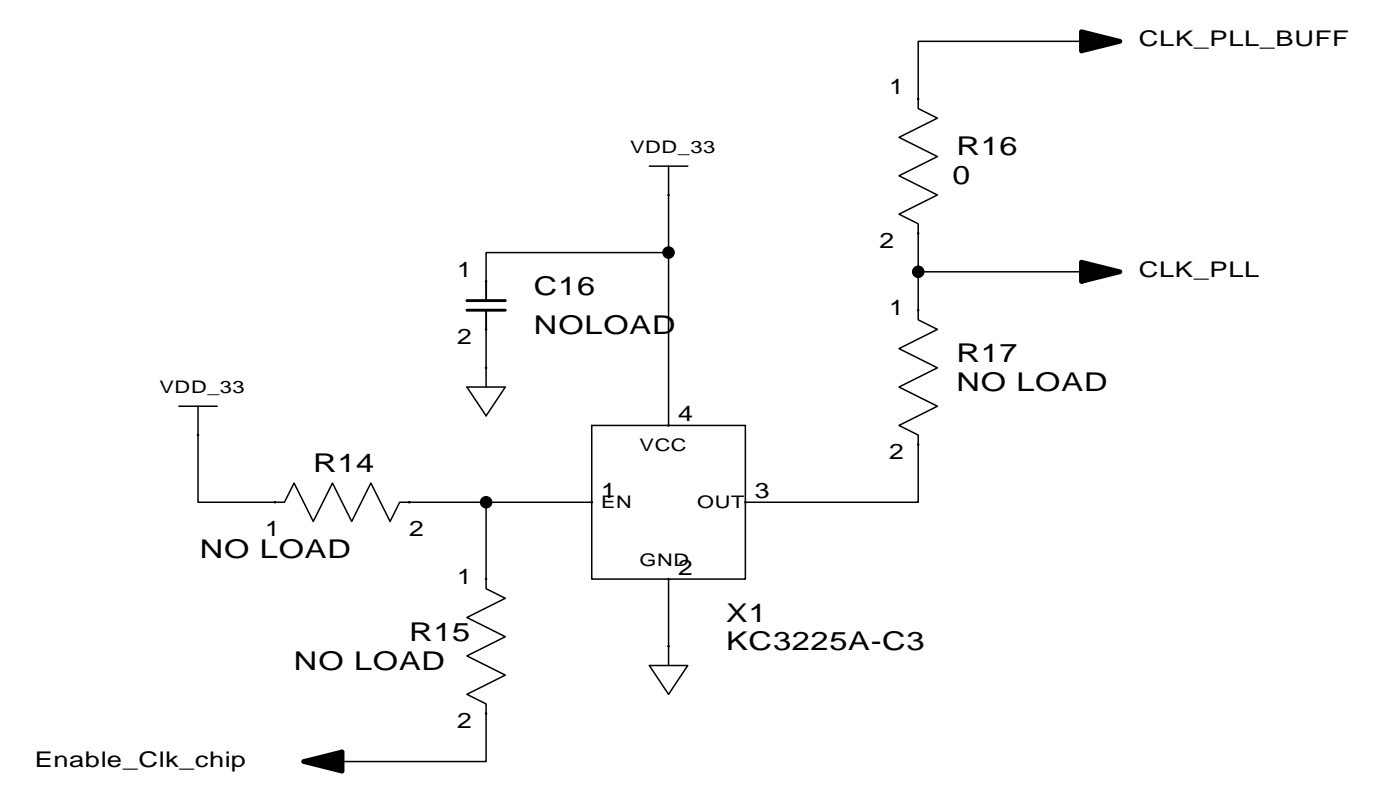
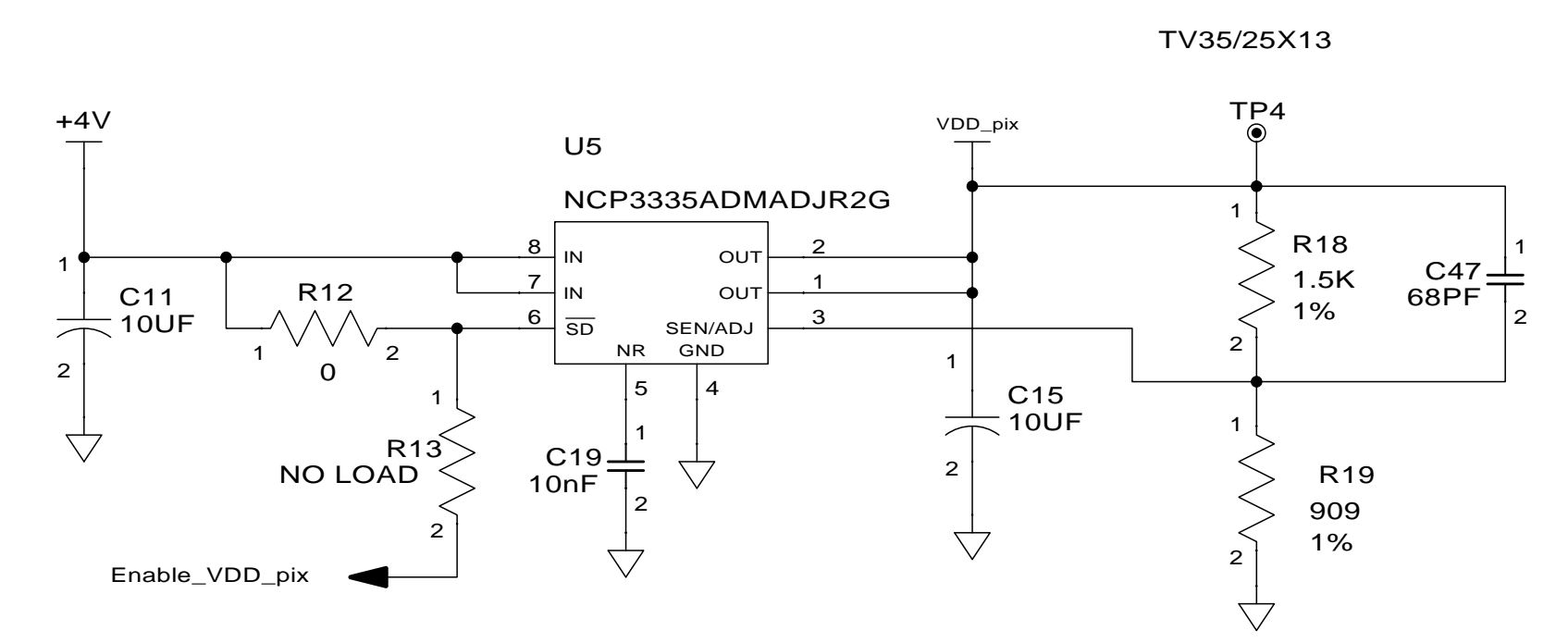
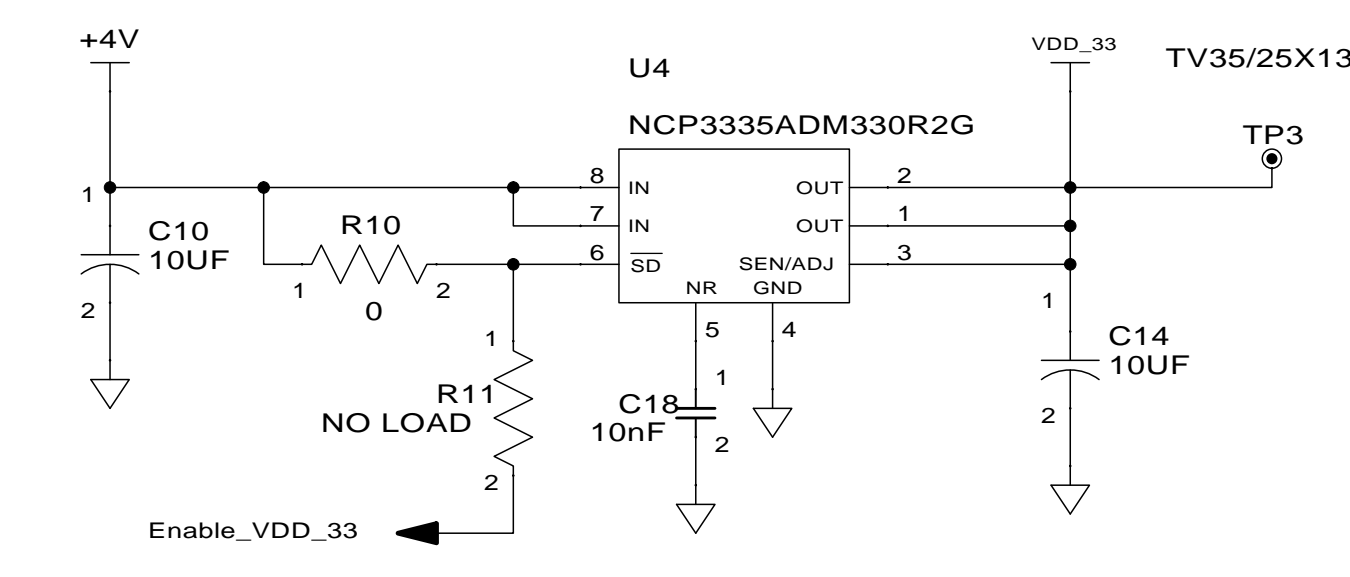
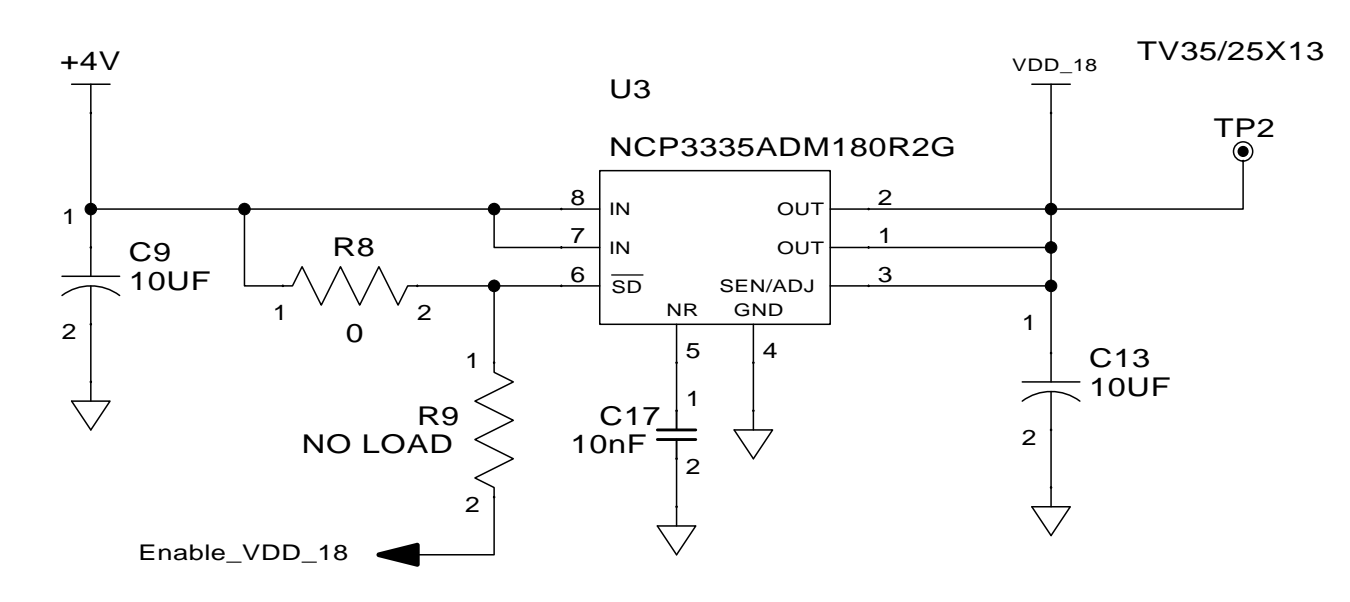
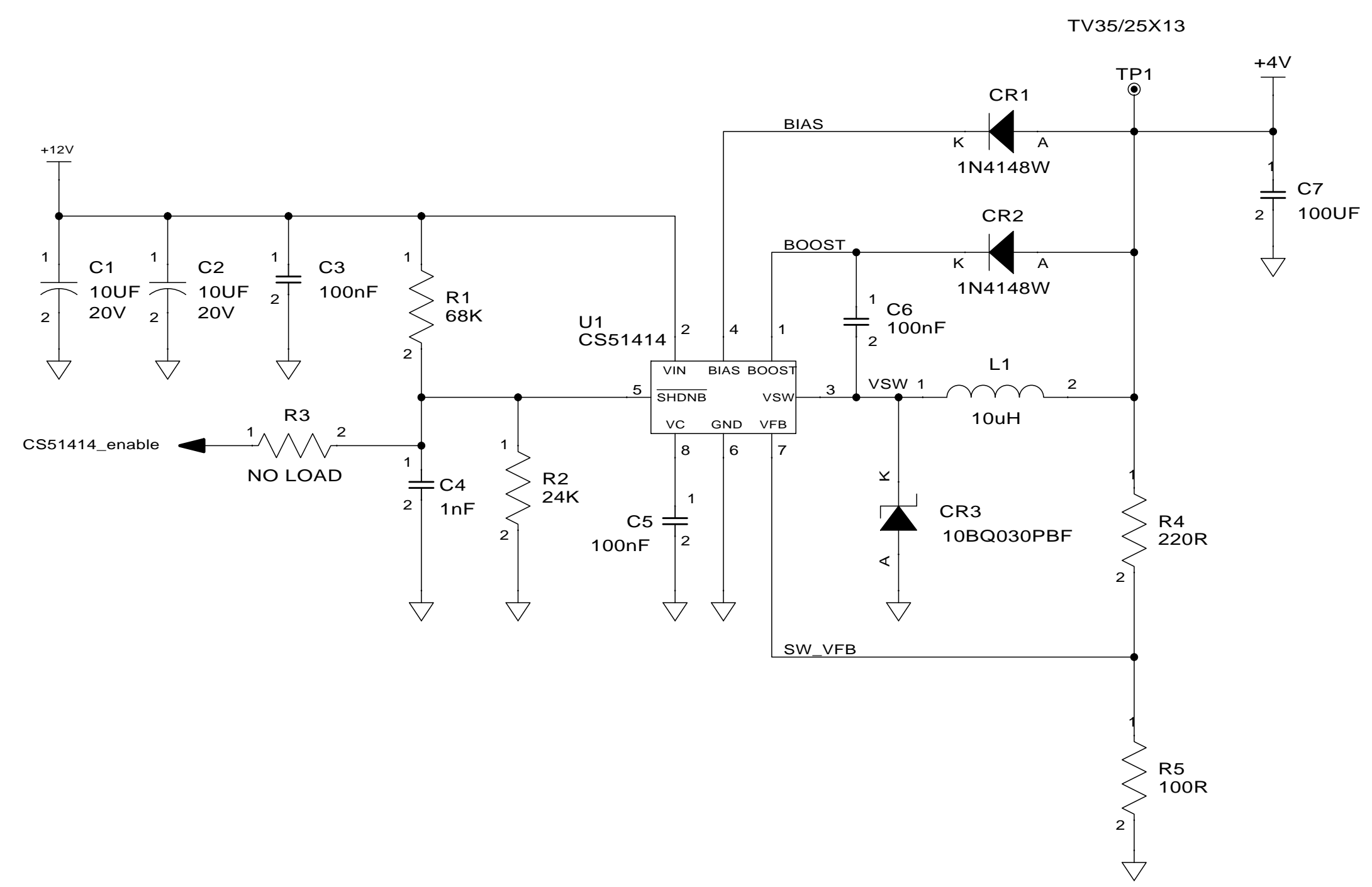
REVISIONS				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL



PCB 30001363-Rev2  
FMC CONNECTOR

UNLESS OTHERWISE SPECIFIED		MATERIAL	DIMENSIONS APPLY AFTER FINISH WHERE TOTAL TOLERANCE IS .001 INCHES OR LESS AND ON ALL THREADS. IN ALL OTHER PLACES DIMENSIONS APPLY BEFORE FINISH.	ON Semiconductor
DIM. ARE IN		FINISH	QA CHK	NAME
2 PL DEC TOL				PYTHON ISP8
3 PL DEC TOL		✓	ENGR	FMC REFERENCE PCB
ANGULAR TOL				ENGR
SURF ROUGHNESS		ECN NO.	REL DATE	SIZE D DWG NO. PS-1698
EDGES		SCALE		PROGRAM CADSTAR SHEET 2 of 4
INSIDE RADII		REVISIONS		
NEXT ASSY	USED ON	NEXT ASSY	FINAL ASSY	
APPLICATION	QUANTITY REQD			

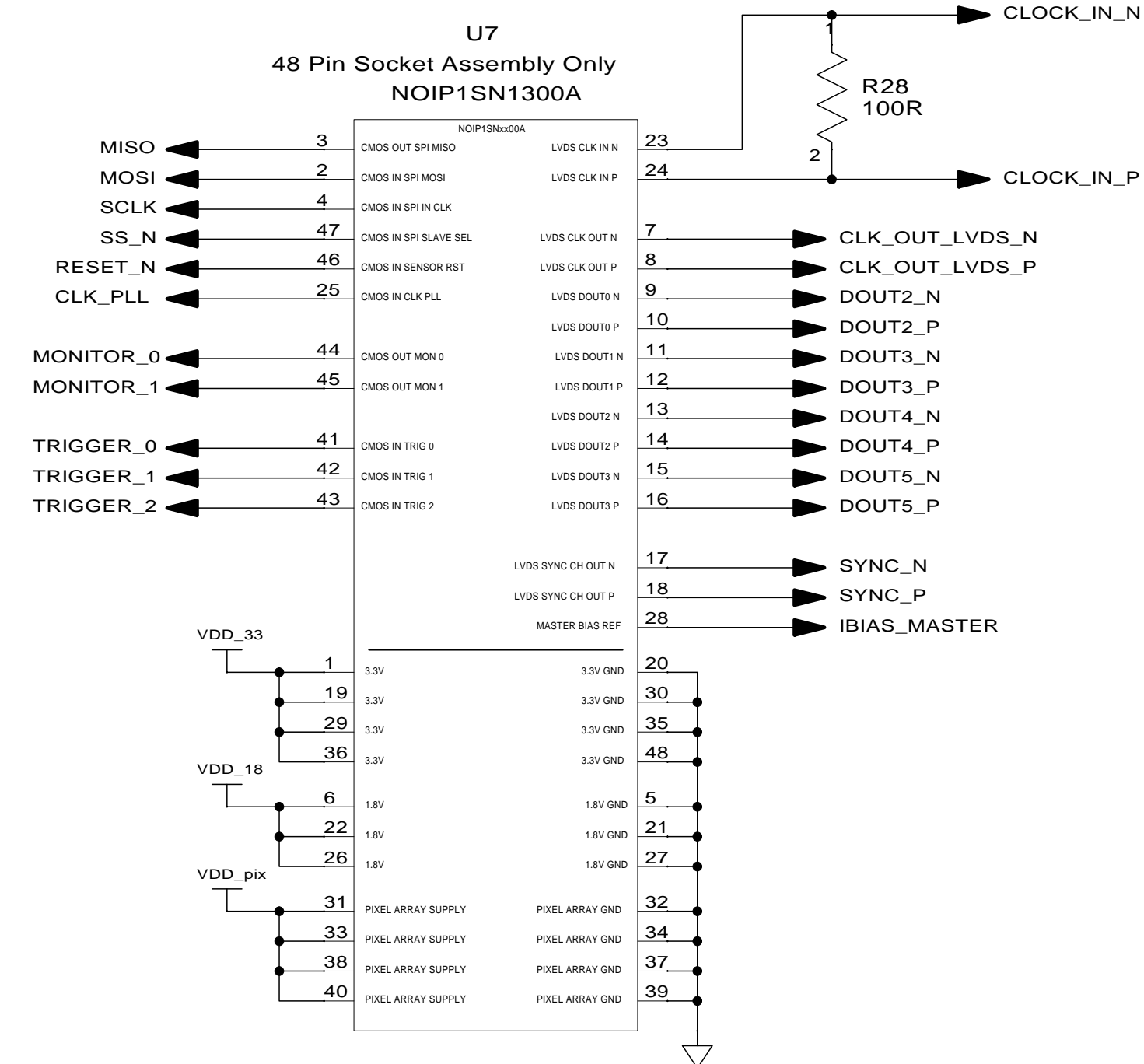
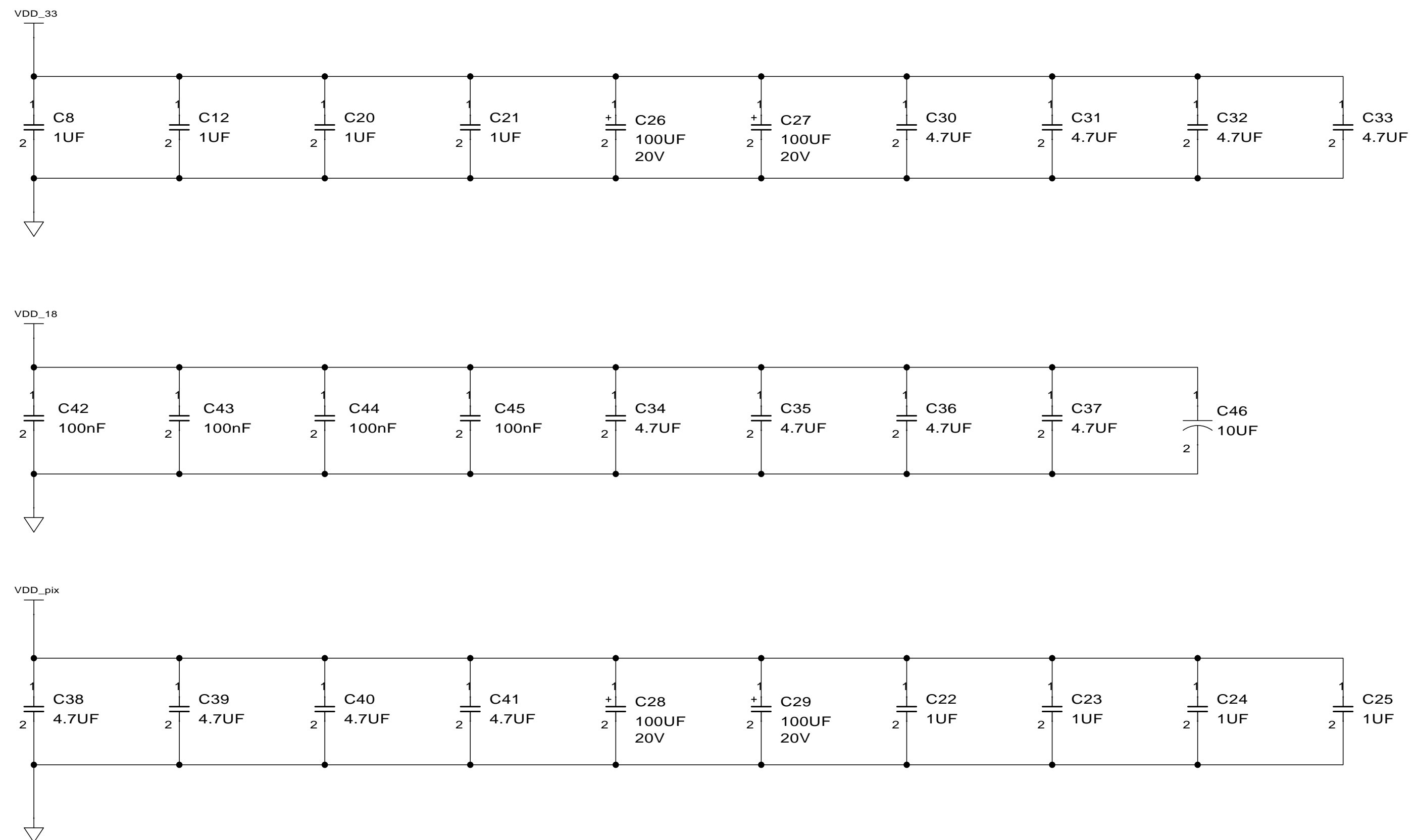
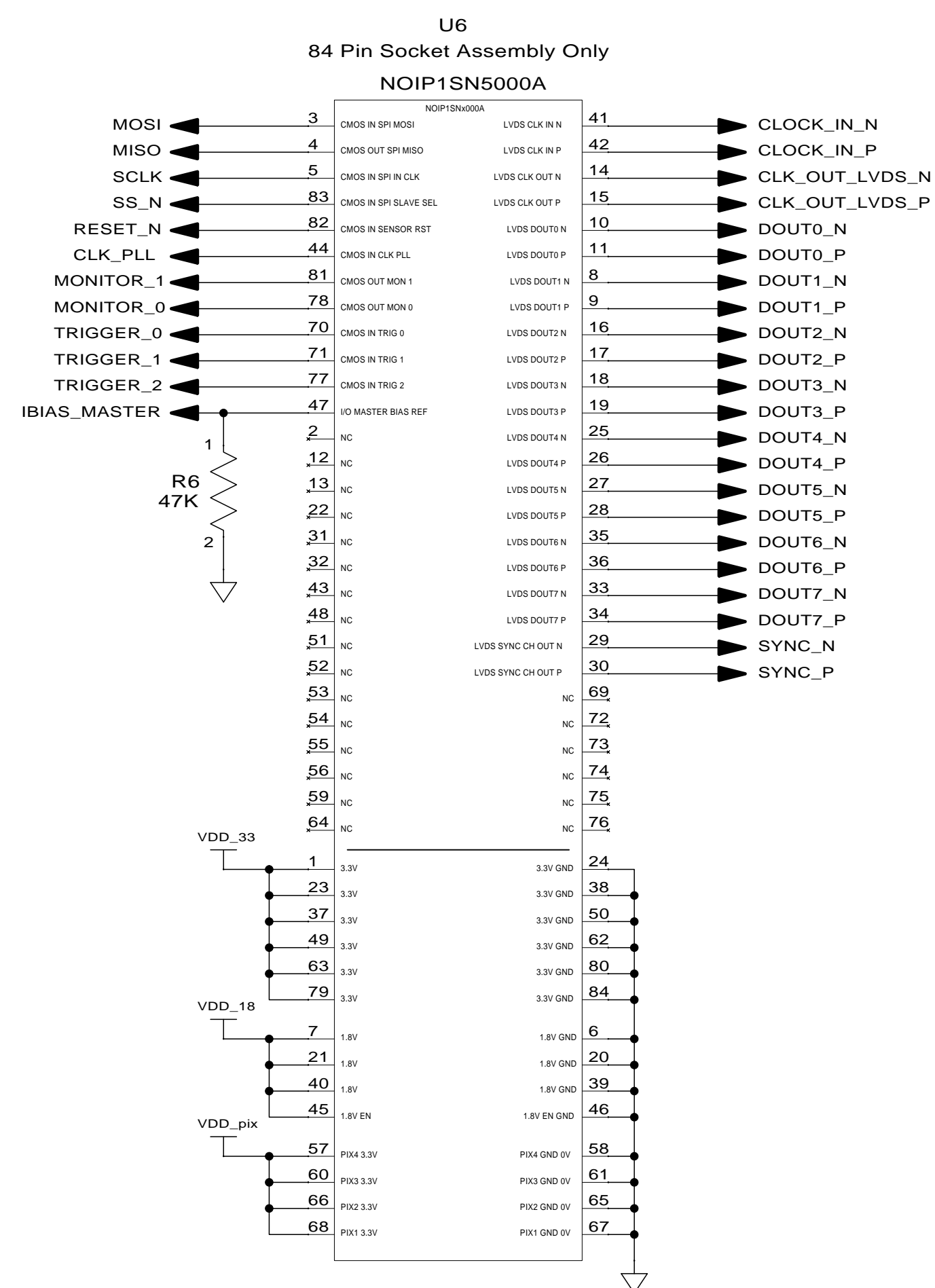
REVISIONS				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL
		Assy: 30001364 Rev 2 to Rev 3 and Assy: 30001478 Rev 3 to Rev 4		
B2		Change R18 from 2.21K to 1.5K	April 2016	
		and Change R19 from 1.5K to 909 Ohm		



PCB 30001363-Rev2  
POWER / OSCILLATOR

UNLESS OTHERWISE SPECIFIED		MATERIAL		DIMENSIONS APPLY AFTER FINISH WHERE TOTAL TOLERANCE IS .001 INCHES OR LESS AND ON ALL THREADS. IN ALL OTHER PLACES DIMENSIONS APPLY BEFORE FINISH.		ON Semiconductor	
DIM. ARE IN		FINISH		DR		NAME	
2 PL DEC TOL ±		✓		QA CHK		PYTHON ISP8	
3 PL DEC TOL ±				ENGR		FMC REFERENCE PCB	
ANGULAR TOL ±				ENGR		SIZE D DWG NO. PS-1698	
SURF ROUGHNESS				ECN NO.		SCALE	
EDGES				REL DATE		PROGRAM CADSTAR SHEET 3 of 4	
INSIDE RADII							
NEXT ASSY	USED ON	NEXT ASSY	FINAL ASSY				
APPLICATION	QUANTITY REQD						

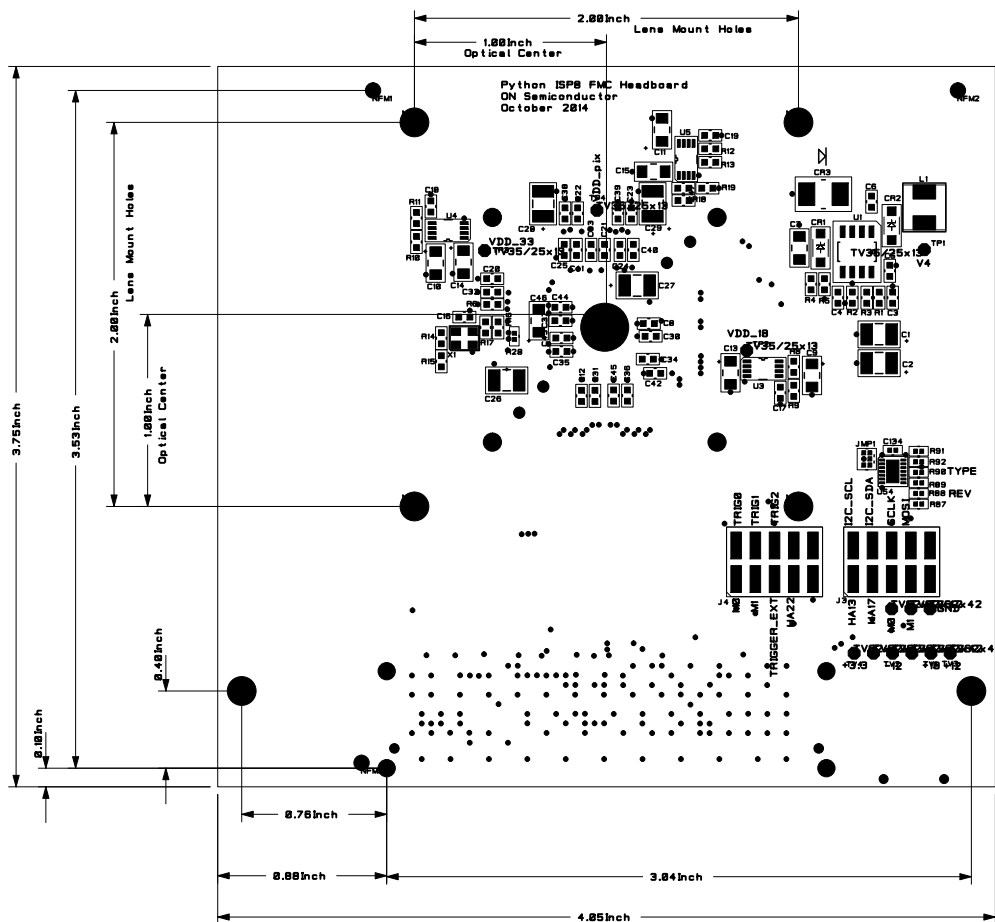
REVISIONS				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL



UNLESS OTHERWISE SPECIFIED		MATERIAL	DIMENSIONS APPLY AFTER FINISH WHERE TOTAL TOLERANCE IS .001 INCHES OR LESS AND ON ALL THREADS. IN ALL OTHER PLACES DIMENSIONS APPLY BEFORE FINISH.	
DIM. ARE IN		FINISH	DR	
2 PL DEC TOL ±			QA CHK	
3 PL DEC TOL ±			ENGR	
ANGULAR TOL ±			ENGR	
SURF ROUGHNESS		ECN NO.		
EDGES		REL DATE		
INSIDE RADII		DEVIATIONS FROM INTENDED SHAPE (FLATNESS, ROUNDNESS, SQUARENESS ETC.) MUST BE WITHIN STATED DIMENSIONAL TOLERANCES.		
NEXT ASSY	USED ON	NEXT ASSY	FINAL ASSY	SCALE
APPLICATION	QUANTITY REQD	PROGRAM CADSTAR		SHEET 4 of 4

PCB 30001363-Rev2  
SENSORS

ON Semiconductor  
NAME  
**PYTHON ISP8  
FMC REFERENCE PCB**  
SIZE **D** DWG NO. **PS-1698**

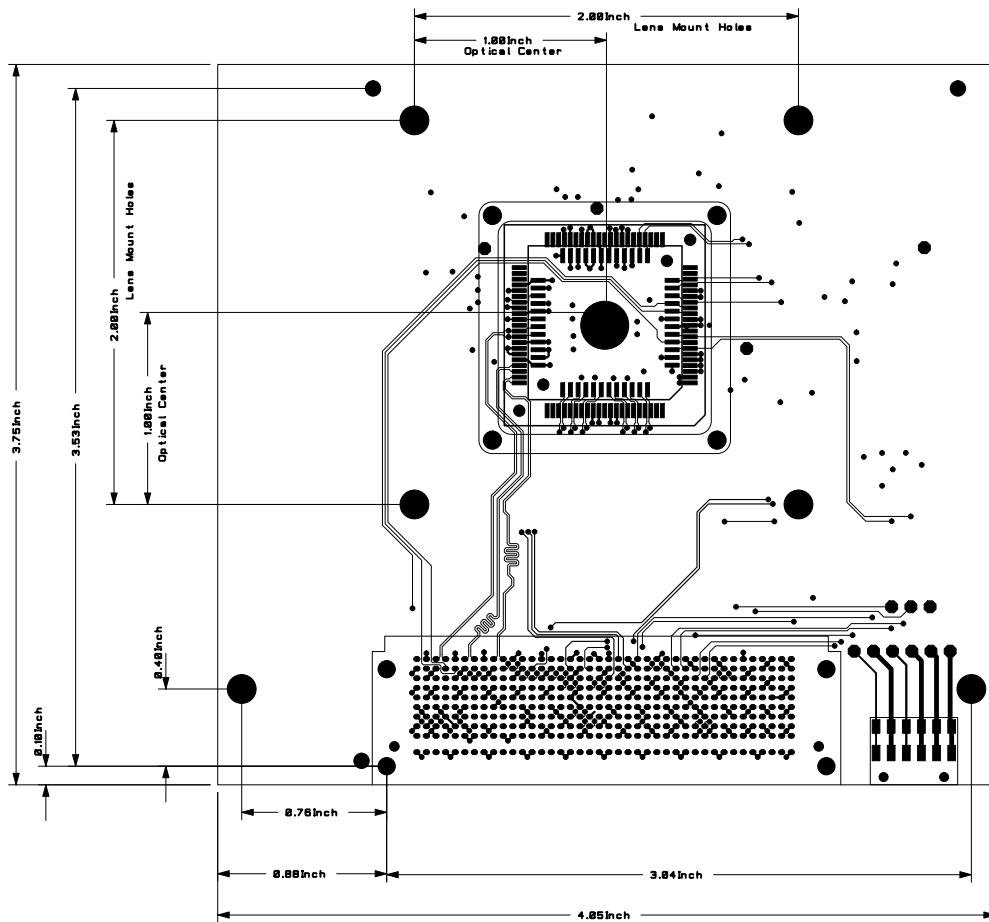


PRIMARY SIDE SILK (VIEWED FROM PRIM SIDE)

FAB DIMENSIONS (VIEWED FROM PRIM SIDE)

Drill Table					
Size	Length	Plate Through	Letter	Count	
13	0	YES	@	264	
42	0	YES	A	13	
45	0	YES	C	4	
47	0	NO	F	2	
50	0	YES	G	2	
59.05511811	0	NO	D	4	
94.88188976	0	NO	E	4	
95	0	YES	B	6	
250	0	NO	H	1	

Python ISP8 FMC Board  
PCB # 30001364 REV 2



SECONDARY SIDE ARTWORK (VIEWED FROM PRIM SIDE)  
 SECONDARY SIDE SILK (VIEWED FROM PRIM SIDE)  
 FAB DIMENSIONS (VIEWED FROM PRIM SIDE)

Drill Table				
Size	Length	Plate Through	Letter	Count
13	0	YES	@	264
42	0	YES	A	13
45	0	YES	C	4
47	0	NO	F	2
50	0	YES	G	2
59.05511811	0	NO	D	4
94.88188976	0	NO	E	4
95	0	YES	B	6
250	0	NO	H	1

Python ISP8 FMC Board  
 PCB # 30001364 REV 2

31000040 REV4

Python 48 headboard

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Part Name	DESCRIPTION	MFG Part#	Digikey Part#	MFG	Count	PCB_REF_NAME
BARE BOARD	30001363 Rev 2					
HDR_100_2X5_SMT	HEADER ASSY 10 POS 2 ROW SMT	15916102	WM3699CT-ND	MOLEX	2	J3 J4
10BQ030PBF	SCHOTTKY RECTIFIER 1A 30V	10BQ030PBF		VISHAY FORMERLY	1	CR3
1N4148W	DIODE FAST SWITCHING 1A 100V	1N4148W-V-GS08		VISHAY SEMICONDUCTOR	2	CR1 CR2
C1nF_0603_NPO	CAP 1nF 50V NPO	C0603C102J5GAC		KEMET	1	C4
C10nF_0603	CAP 10nF 50V X7R	C0603C103K5RAC		KEMET	3	C17 C18 C19
C100nF_0603	CAP 100nF 50V X7R	C0603C104K5RAC		KEMET	7	C3 C42 C43 C44 C45 C5 C6 C12 C20 C21 C22 C23 C24 C25
C1UF_0603	CAP 1UF 16V X5R	C0603C105K4PAC		KEMET	8	C8 C30 C31 C32 C33 C34 C35 C36
C4.7UF_0603	4.7UF 6.3V X5R 10%	C0603C475K9PAC		KEMET	12	C37 C38 C39 C40 C41
C68PF_0603	CAP 68PF 50WVDC 5%	C0603C680J5GAC		KEMET	1	C47
C.1UF_50V_0402	CAP 0.1UF 10% 50V X7R 0402	C1005X7R1H104K050BB	445-5932-2-ND	TDK	1	C134
C100uF_1206	CAP 100UF 6.3V X5R	C1206C107M9PAC		KEMET	1	C7
R100R_0402	RESISTOR 100 OHM 63mW 1%	CRCW0402100RFKED		VISHAY DALE	1	R28
RO_0603	RESISTOR 0	CRCW06030000Z0EA	541-0.0GCT-ND	DALE	4	R11 R13 R16 R9
R100R_0603	RESISTOR 100 OHM	CRCW0603100RFKEA		VISHAY DALE	1	R5
R909R_0603	RESISTOR 909 OHM	CRCW0603909RFKEA	541-909HTR-ND	VISHAY DALE	1	R19
R220R_0603	RESISTOR 220 OHM	CRCW0603220RFKEA		VISHAY DALE	1	R4
R24K_0603	RESISTOR 24K	CRCW060324K0FKEA		VISHAY DALE	1	R2
R1501_0603	RESISTOR 1.5K 1/8W 1%	CRCW06031501FT	541-1.5KHTR-ND	DALE	1	R18
R47K_0603	RESISTOR 47K	CRCW060347K0FKEA		VISHAY DALE	1	R6
R68K_0603	RESISTOR 68K	CRCW060368K0FKEA		VISHAY DALE	1	R1
R1001_0402	RESISTOR 1.0K ohm 1/16W 1%	ERJ-2RKF1001X	ERJ-2RKF1001X		1	R90
CS51414	1.5 A 260 kHz and 520 kHz Low Voltage Buck Regulators	CS51414		ON Semi	1	U1
R1002_0402	RESISTOR 10K ohm 1/16W 1%	ERJ-2RKF1002X	P10.0KLCT-ND	Panasonic	4	R87 R88 R89 R91
IHLP2020BZER100M11	INDUCTOR 10UH 2.2A 20% SMD	IHLP2020BZER100M11		VISHAY DALE	1	L1
LTC2487	16-Bit 2-/4-Channel ?S ADC	LTC2487IDE#PBF	LTC2487IDE#PBF-ND	Linear Technology	1	U54
NCP3335ADM180R2G	Low Dropout Regulator Ultra High Accuracy Low Iq 500 mA	NCP3335ADM180R2G		ON Semi	1	U3
NCP3335ADM330R2G	Low Dropout Regulator Ultra High Accuracy Low Iq 500 mA	NCP3335ADM330R2G		ON Semi	1	U4
NCP3335ADMADJR2G	Low Dropout Regulator Adjustable Ultra High Accuracy Low Iq 500 mA	NCP3335ADMADJR2G		ON Semi	1	U5
NOIP1SN1300A	PYTHON 1.3 Megapixel 210 FPS Global Shutter CMOS Image Sensor	680-48-SM-G10-R14-1		ANDON SOCKET	1	U6
SEAM-40-01-S-10-2-RA-K-TR	FMC Module Connector	SEAM-40-01-S-10-2-RA-K-TR	SEAM-40-01-S-10-2-RA-K-TR	Samtec	1	J2
C10UF_1206	CAP 10UF 16V	TCJA106M016R0200		AVX	7	C10 C11 C13 C14 C15 C46 C9
C10UF_1210_20V10	CAP 10UF 20WVDC 10%	TPSB106K020R0500		AVX	2	C1 C2
C100UF_1210_10V20	CAP 100UF 20WVDC 20%	TPSB107M010R0400		AVX	4	C26 C27 C28 C29
<b>No Not Populate</b>						
CNOLOAD_0603	CAP NOLOAD	NO LOAD CAPACITOR			1	C16
SEL2_0402	4 position jumper for a S1S2 selection	NO LOAD RESISTOR			1	JMP1
RNOLOAD_0603	NO LOAD RESISTOR	NO LOAD RESISTOR			7	R10 R12 R14 R15 R17 R3 R8
HDR_MMT_106_02_F_DH	HEADER 6x2 PINS SMT	NO LOAD	MMT-106-02-F-DH	SAMTEC	1	J1
RDNP_0402	RESISTOR do not populate ohm 1/16W 5%	NO LOAD RESISTOR		0 xxx	2	R92
KC3225A-C3	Clock Oscillator	KC3225A-C3		KYOCERA	1	X1

30001478 REV5

Python 84 headboard

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Part Name	DESCRIPTION	MFG Part#	Digikey Part#	MFG	Count	PCB_REF_NAME
BARE BOARD	30001363 Rev 2					
HDR_100_2X5_SMT	HEADER ASSY 10 POS 2 ROW SMT	15916102	WM3699CT-ND	MOLEX	2	J3 J4
10BQ030PBF	SCHOTTKY RECTIFIER 1A 30V	10BQ030PBF		VISHAY FORMERLY	1	CR3
1N4148W	DIODE FAST SWITCHING 1A 100V	1N4148W-V-GS08		VISHAY SEMICONDUCTOR	2	CR1 CR2
C1nF_0603_NPO	CAP 1nF 50V NPO	C0603C102J5GAC		KEMET	1	C4
C10nF_0603	CAP 10nF 50V X7R	C0603C103K5RAC		KEMET	3	C17 C18 C19
C100nF_0603	CAP 100nF 50V X7R	C0603C104K5RAC		KEMET	7	C3 C42 C43 C44 C45 C5 C6 C12 C20 C21 C22 C23 C24 C25
C1UF_0603	CAP 1UF 16V X5R	C0603C105K4PAC		KEMET	8	C8 C30 C31 C32 C33 C34 C35 C36
C4.7UF_0603	4.7UF 6.3V X5R 10%	C0603C475K9PAC		KEMET	12	C37 C38 C39 C40 C41
C68PF_0603	CAP 68PF 50WVDC 5%	C0603C680J5GAC		KEMET	1	C47
C.1UF_50V_0402	CAP 0.1UF 10% 50V X7R 0402	C1005X7R1H104K050BB	445-5932-2-ND	TDK	1	C134
C100uF_1206	CAP 100UF 6.3V X5R	C1206C107M9PAC		KEMET	1	C7
R100R_0402	RESISTOR 100 OHM 63mW 1%	CRCW0402100RFKED		VISHAY DALE	1	R28
R0_0603	RESISTOR 0	CRCW06030000Z0EA	541-0.0GCT-ND	DALE	4	R11 R13 R16 R9
R100R_0603	RESISTOR 100 OHM	CRCW0603100RFKEA		VISHAY DALE	1	R5
R909R_0603	RESISTOR 909 OHM	CRCW0603909RFKEA	541-909HTR-ND	VISHAY DALE	1	R19
R220R_0603	RESISTOR 220 OHM	CRCW0603220RFKEA		VISHAY DALE	1	R4
R24K_0603	RESISTOR 24K	CRCW060324K0FKEA		VISHAY DALE	1	R2
R1501_0603	RESISTOR 1.5K 1/8W 1%	CRCW06031501FT	541-1.5KHTR-ND	DALE	1	R18
R47K_0603	RESISTOR 47K	CRCW060347K0FKEA		VISHAY DALE	1	R6
R68K_0603	RESISTOR 68K	CRCW060368K0FKEA		VISHAY DALE	1	R1
R1001_0402	RESISTOR 1.0K ohm 1/16W 1% 1.5 A 260 kHz and 520 kHz Low Voltage Buck Regulators	ERJ-2RKF1001X	ERJ-2RKF1001X		1	R90
CS51414	REGULATORS	CS51414		ON Semi	1	U1
R1002_0402	RESISTOR 10K ohm 1/16W 1%	ERJ-2RKF1002X	P10.0KLCT-ND	Panasonic	4	R87 R88 R89 R91
IHLP2020BZER100M11	INDUCTOR 10UH 2.2A 20% SMD	IHLP2020BZER100M11		VISHAY DALE	1	L1
LTC2487	16-Bit 2-/4-Channel ?S ADC Low Dropout Regulator Ultra High Accuracy Low Iq 500 mA	LTC2487IDE#PBF	LTC2487IDE#PBF-ND	Linear Technology	1	U54
NCP3335ADM180R2G	Low Dropout Regulator Ultra High Accuracy Low Iq 500 mA	NCP3335ADM180R2G		ON Semi	1	U3
NCP3335ADM330R2G	Low Dropout Regulator Adjustable Ultra High Accuracy Low Iq 500 mA	NCP3335ADM330R2G		ON Semi	1	U4
NCP3335ADMADJR2G	PYTHON 5 MegaPixels Global Shutter CMOS Image Sensor	NCP3335ADMADJR2G		ON Semi	1	U5
NOIP1SN5000A	FMC Module Connector	SEAM-40-01-S-10-2-RA-K-TR	SEAM-40-01-S-10-2-RA-K-TR	ANDON SOCKET	1	U6
C10UF_1206	CAP 10UF 16V	TCJA106M016R0200		Samtec	1	J2
C10UF_1210_20V10	CAP 10UF 20WVDC 10%	TPSB106K020R0500		AVX	7	C10 C11 C13 C14 C15 C46 C9
C100UF_1210_10V20	CAP 100UF 20WVDC 20%	TPSB107M010R0400		AVX	2	C1 C2
					4	C26 C27 C28 C29
<b>No Not Populate</b>						
CNOLOAD_0603	CAP NOLOAD	NO LOAD CAPACITOR			1	C16
SEL2_0402	4 position jumper for a S1S2 selection	NO LOAD RESISTOR			1	JMP1
RNOLOAD_0603	NO LOAD RESISTOR	NO LOAD RESISTOR			7	R10 R12 R14 R15 R17 R3 R8
HDR_MMT_106_02_F_DH	HEADER 6x2 PINS SMT	NO LOAD	MMT-106-02-F-DH	SAMTEC	1	J1
RDNP_0402	RESISTOR do not populate ohm 1/16W 5%	NO LOAD RESISTOR		0 xxx	2	R92
KC3225A-C3	Clock Oscillator	KC3225A-C3		KYOCERA	1	X1