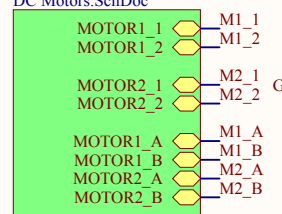
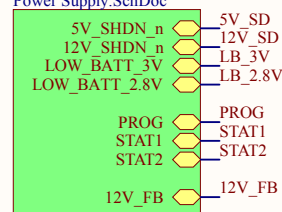
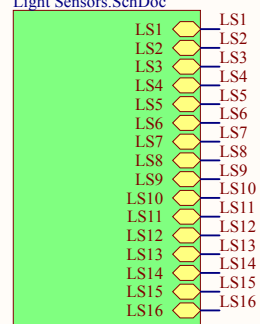
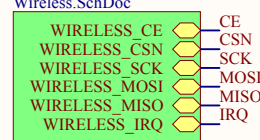
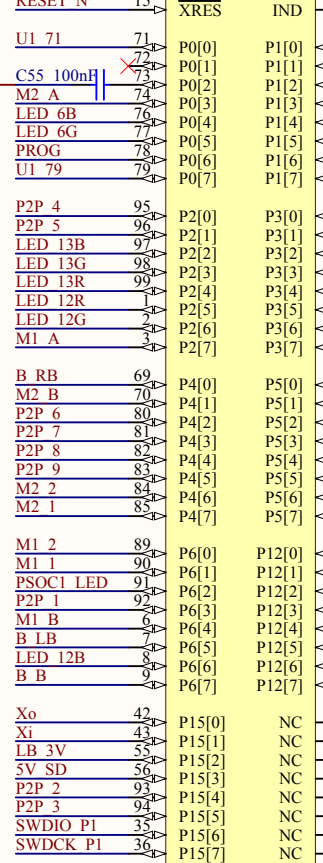
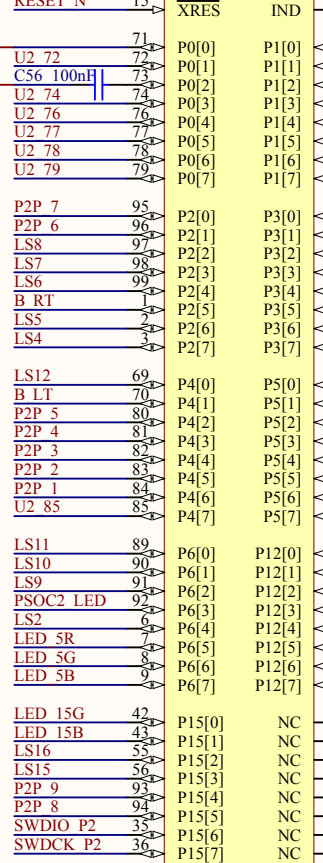
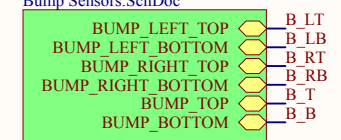
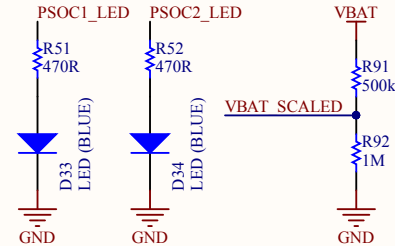
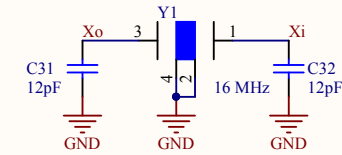
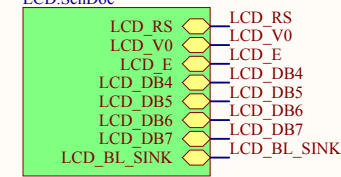
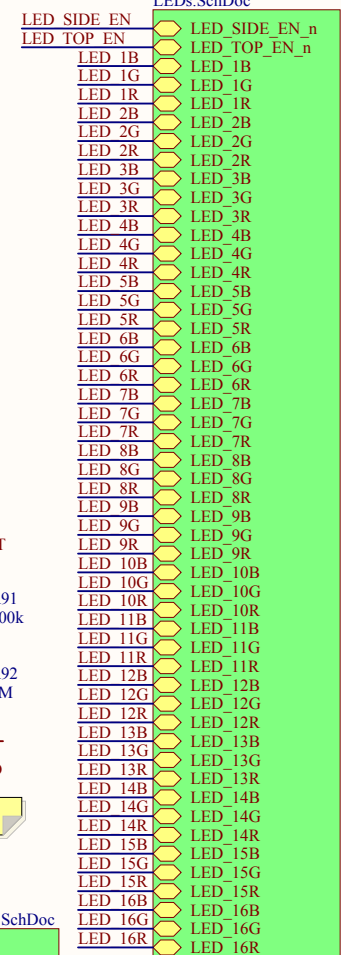
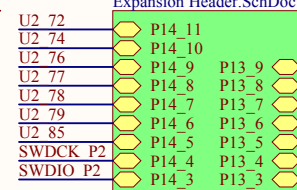


SS7
DC Motors.SchDocSS6
Power Supply.SchDocSS8
Light Sensors.SchDocSS11
Wireless.SchDocU1A
CY8C5888AXI-LP096U2A
CY8C5888AXI-LP096SS10
Bump Sensors.SchDocSS9
LCD.SchDoc

$$VBAT_SCALED = (2/3) * VBAT$$

SS5
LEDs.SchDocSS12
Expansion Header.SchDocTitle
PSoC.SchDoc

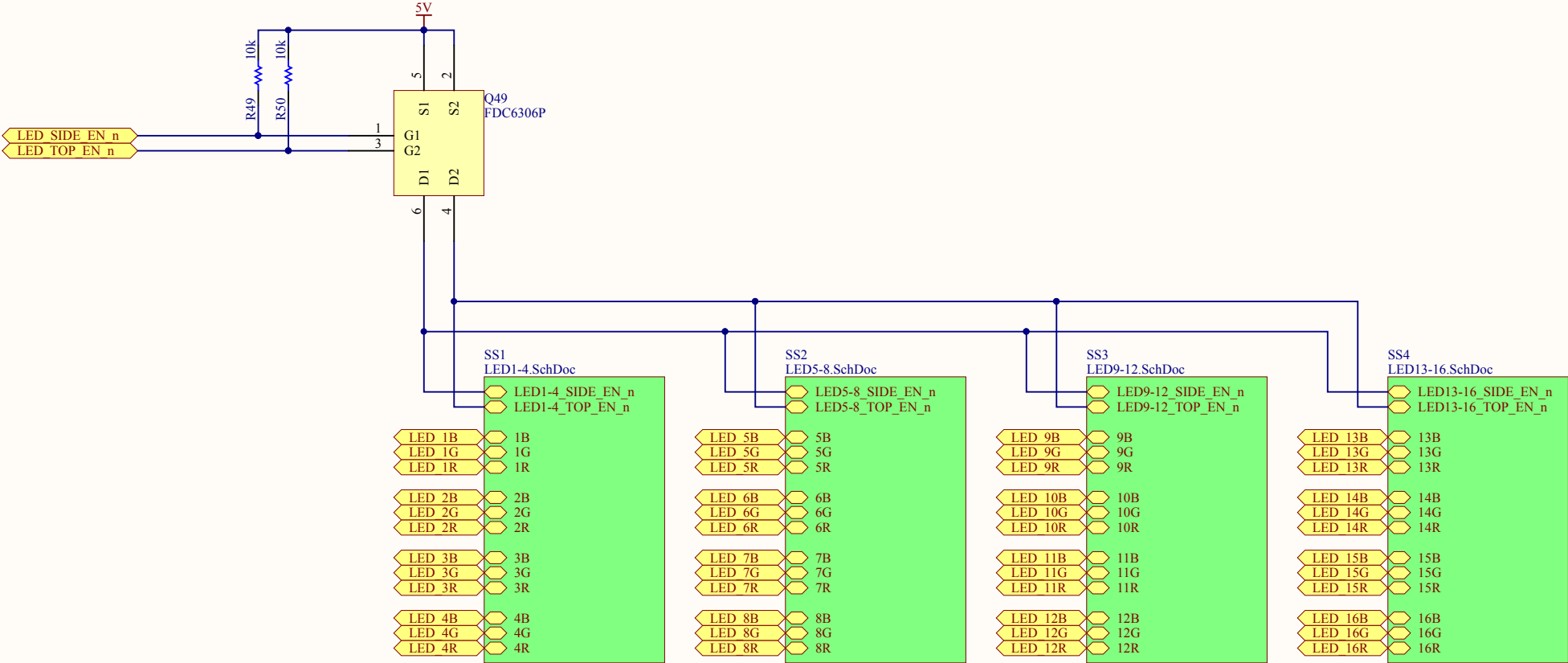
Size	Number	Revision
A4	1	A
Date:	1/12/2014	Sheet of 13
File:	C:\Users\...\PSoC.SchDoc	Drawn By: Nick D'Ademo

▲ All LEDs have been set to 20mA forward current for 5V via:
RED: R=150R
GREEN: R=91R
BLUE: R=91R

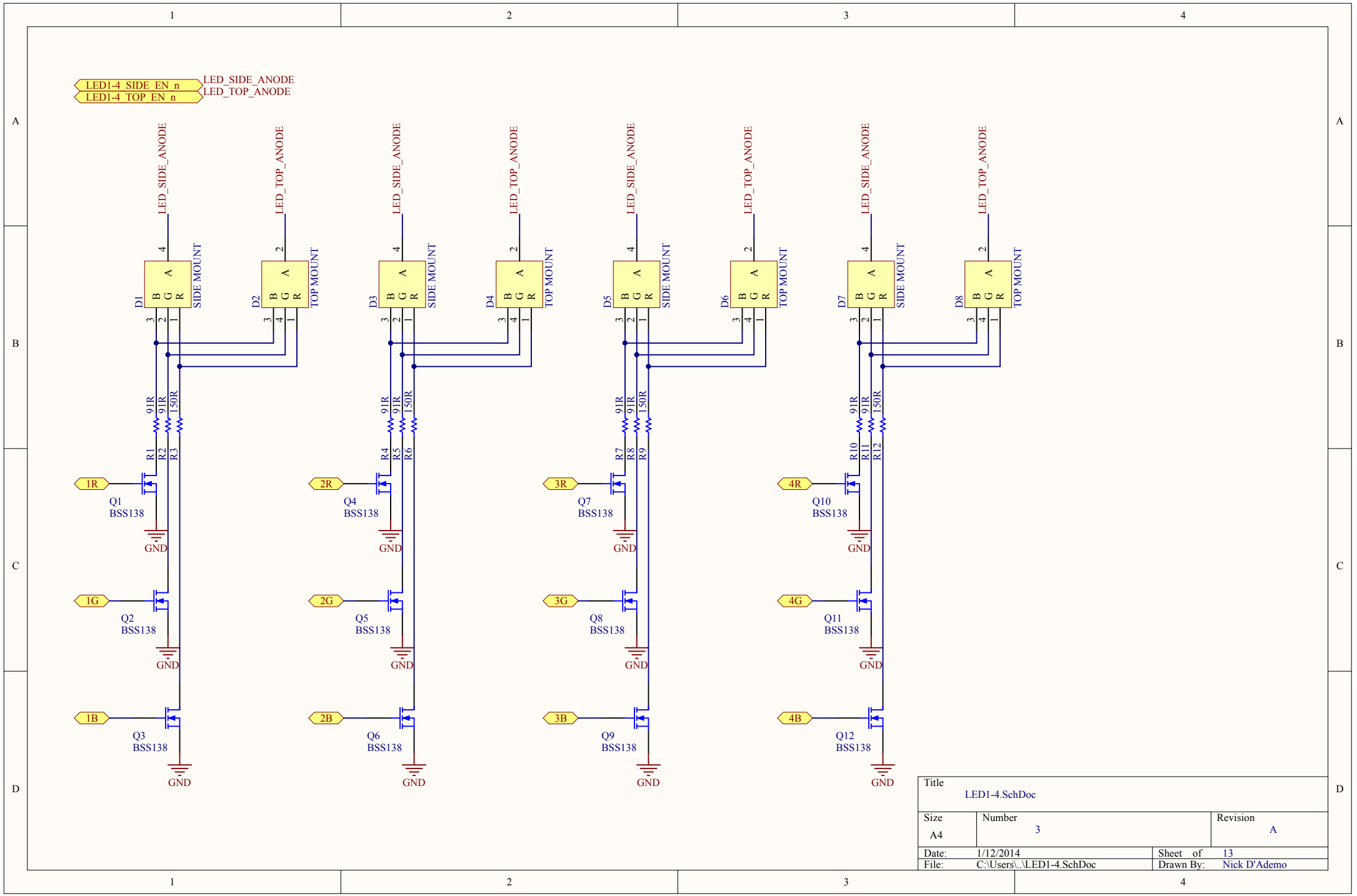
▲ SIDE LED:
Vf @ If=20mA (Min->Typ->Max):
RED: 1.8->2.0->2.4V
GREEN: 3.0->3.3->3.6V
BLUE: 3.0->3.3->3.6V

▲ TOP LED:
Vf @ If=20mA (Avg->Max):
RED: 2.0->2.6V
GREEN: 3.2->4.0V
BLUE: 3.2->4.0V

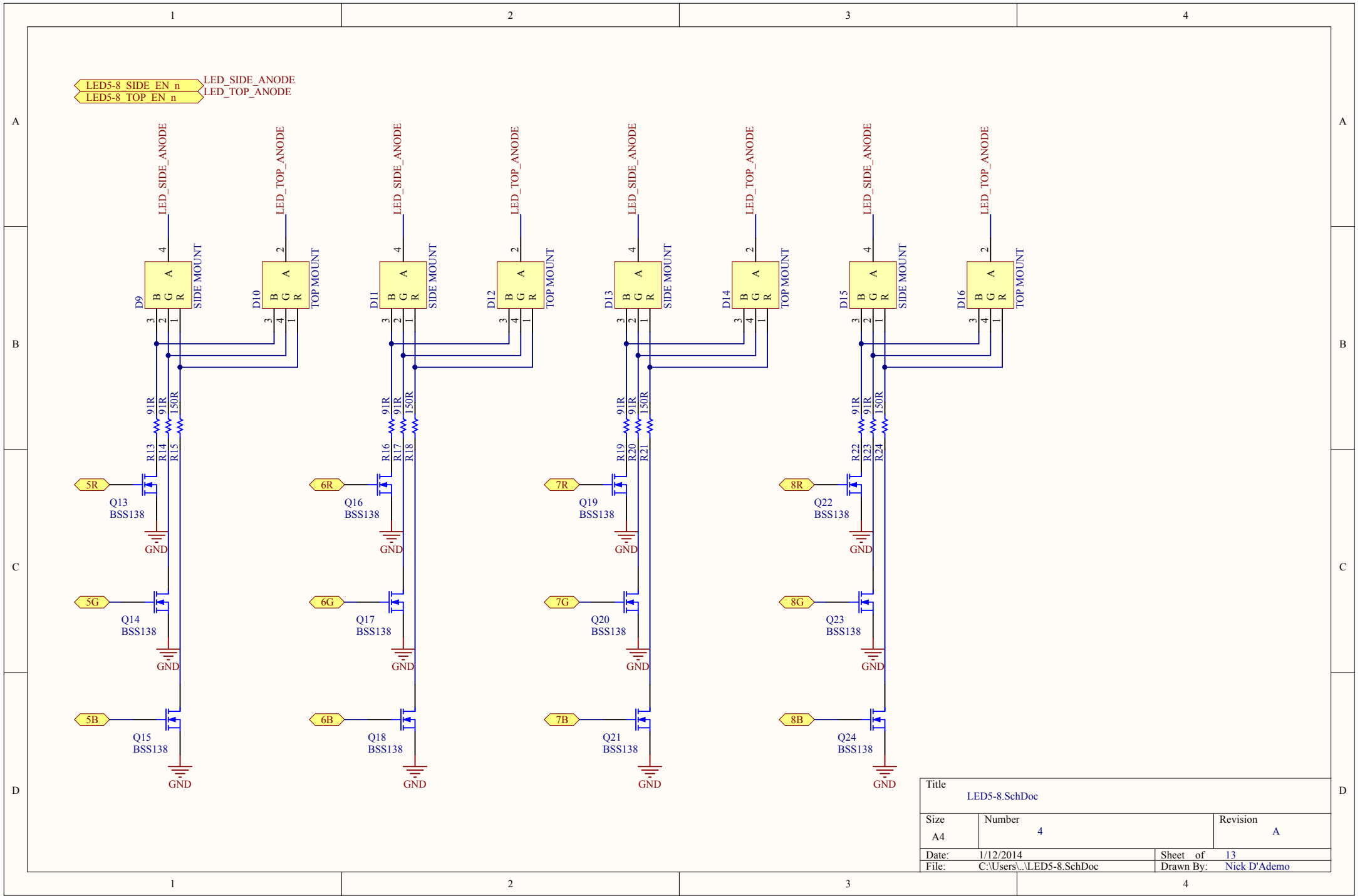
CLV1A-FKB-CJ1M1F1BB7R4S3: 675med Red, 1055med Green, 337med Blue
CLV1A-FKB-CK1N1G1BB7R4S3: 730med Red, 1150med Green, 365med Blue

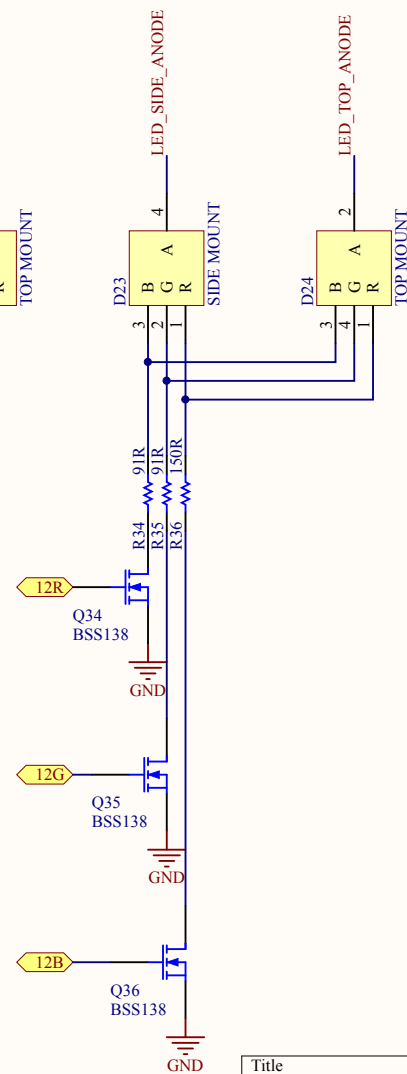
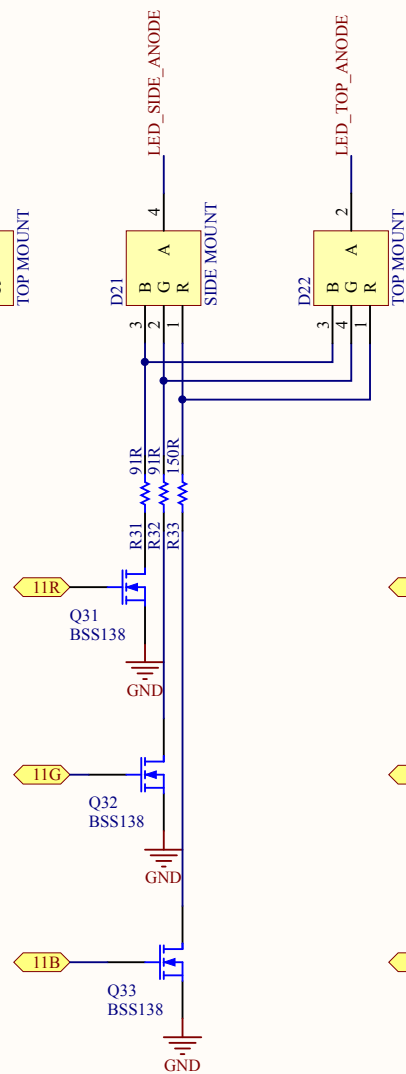
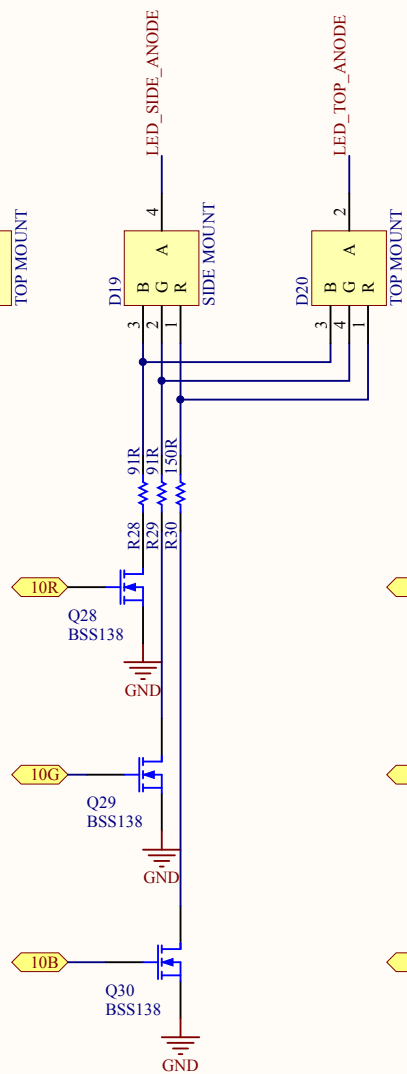
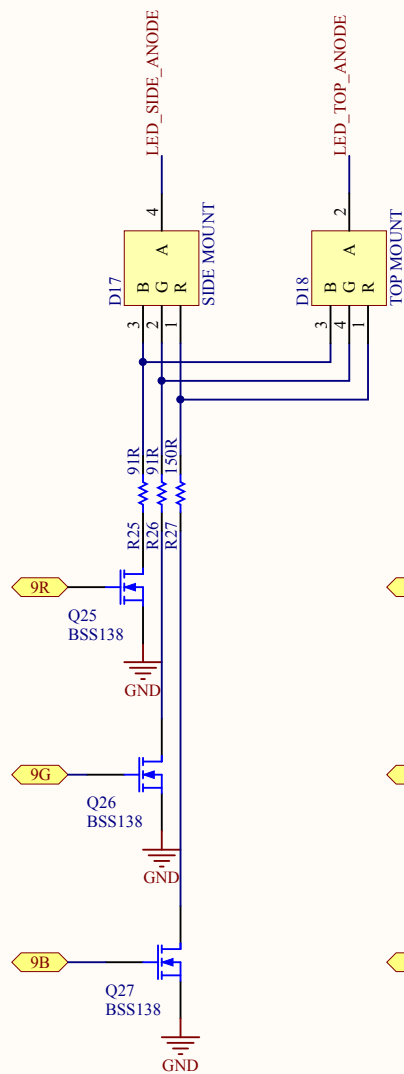


Title		
LEDs.SchDoc		
Size	Number	Revision
A4	2	A
Date:	1/12/2014	Sheet of 13
File:	C:\Users\...\LEDs.SchDoc	Drawn By: Nick D'Ademo

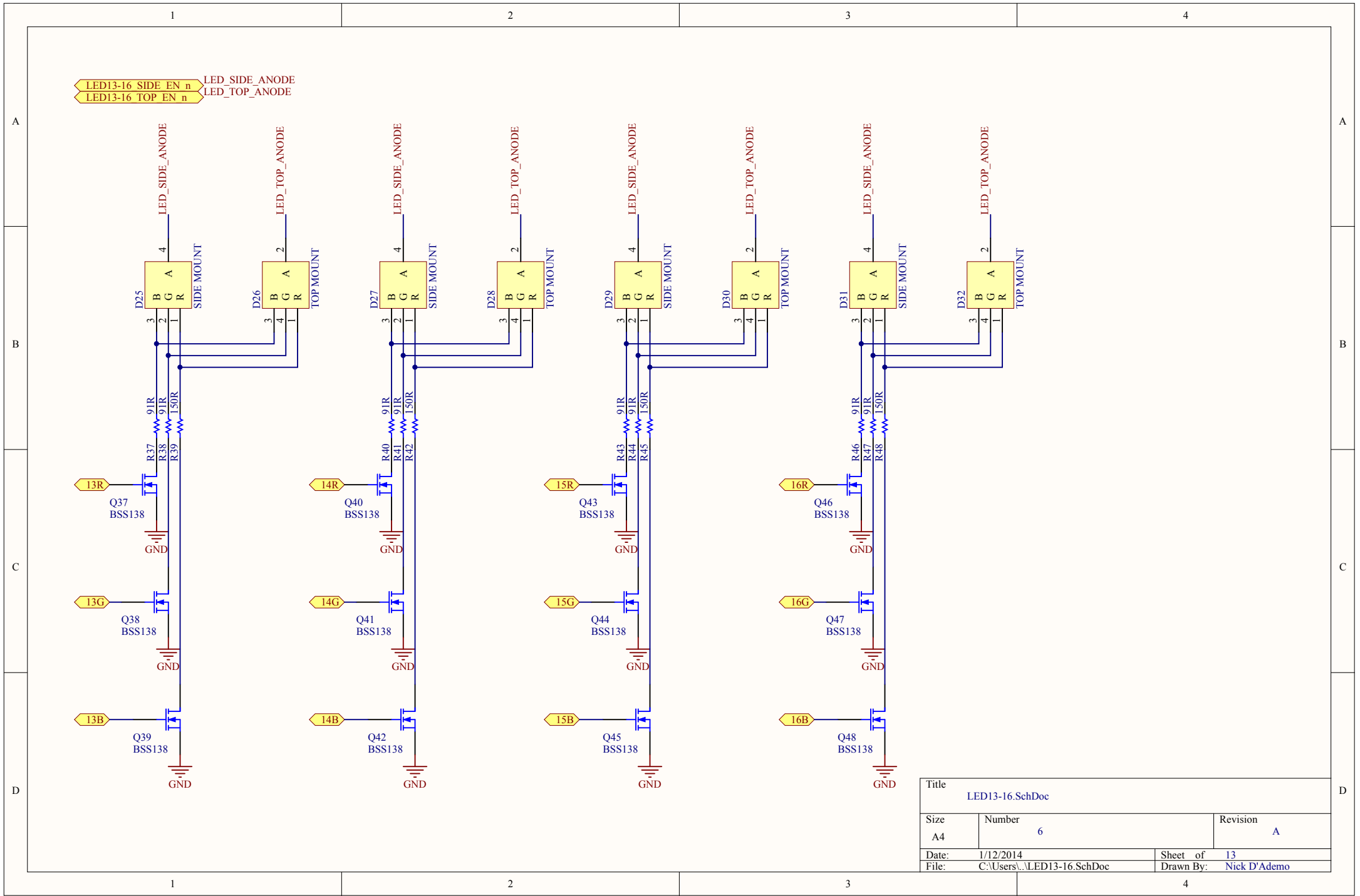


Title LED1-4.SchDoc		
Size A4	Number 3	Revision A
Date: 1/12/2014	Sheet of 13	Drawn By: Nick D'Ademo
File: C:\Users\...\LED1-4.SchDoc		





Title LED9-12.SchDoc			
Size A4	Number 5		Revision A
Date:	1/12/2014	Sheet of	13
File:	C:\Users\...\LED9-12.SchDoc	Drawn By:	Nick D'Ademo



1

2

3

4

A

B

C

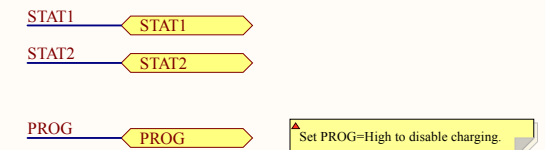
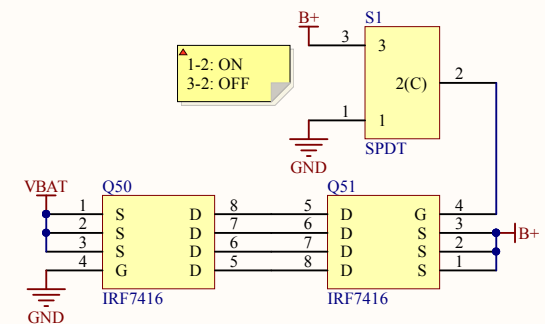
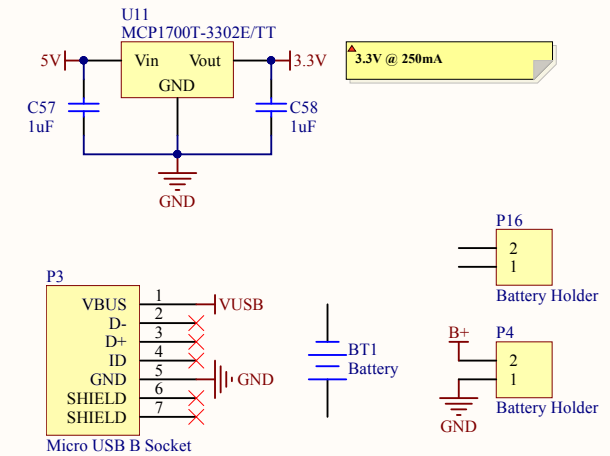
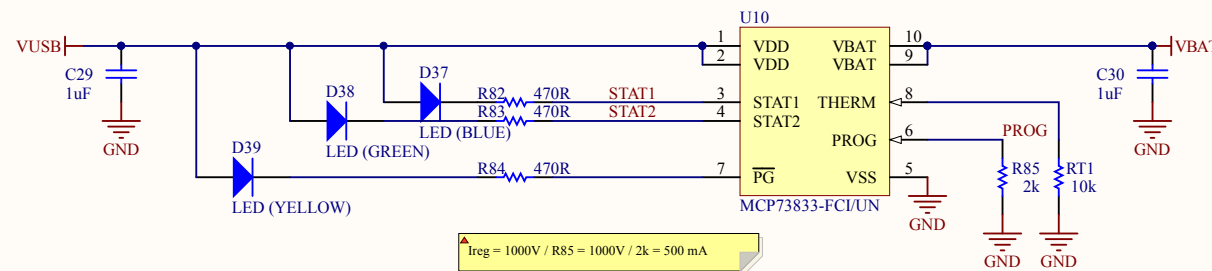
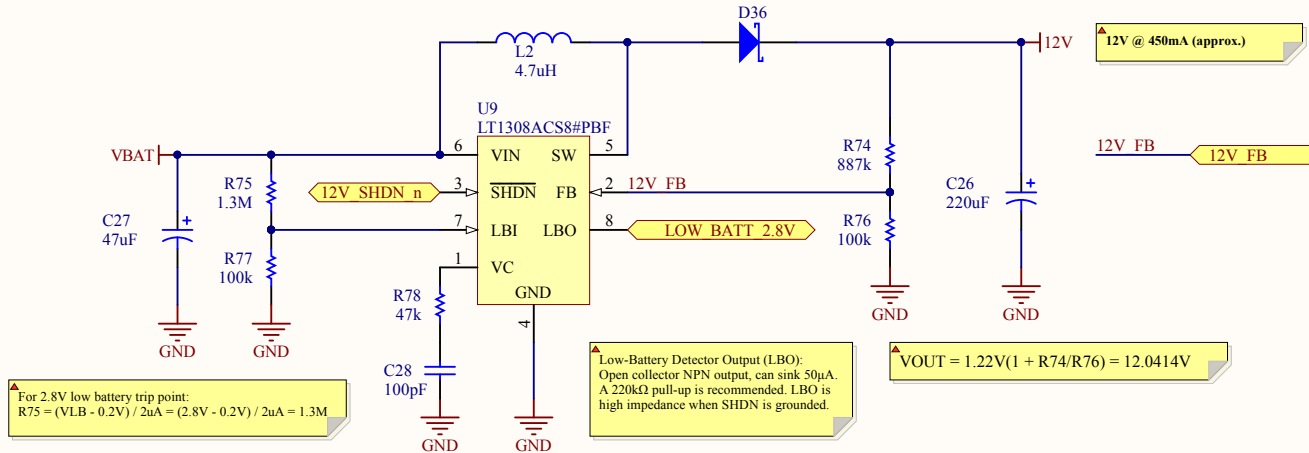
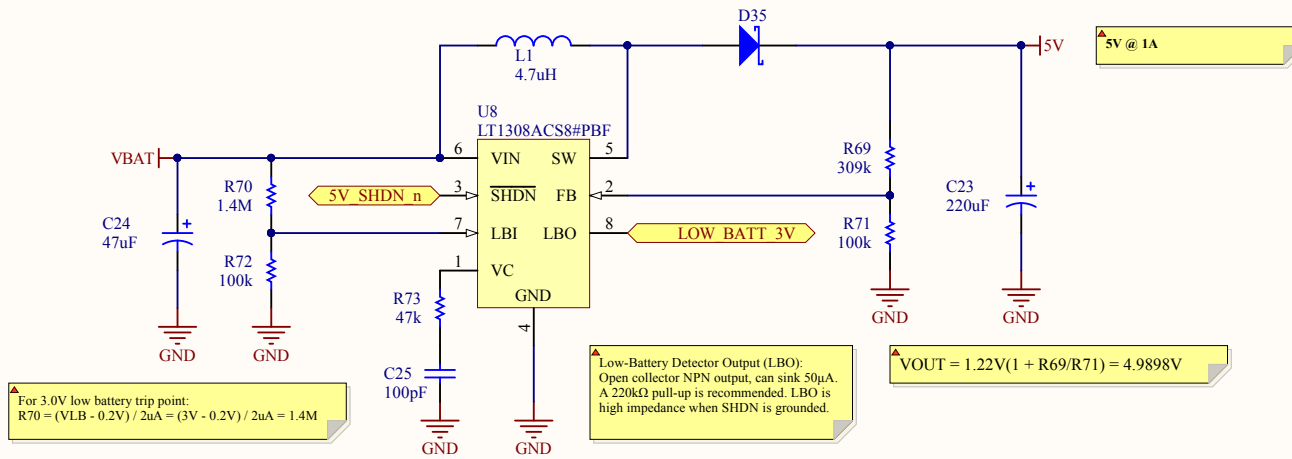
D

A

B

C

D



Title		
Power Supply.SchDoc		
Size	Number	Revision
A4	7	A
Date:	1/12/2014	Sheet of 13
File:	C:\Users\...\Power Supply.SchDoc	Drawn By: Nick D'Ademo

1

2

3

4

▲ AMS light sensors (www.ams.com) have the following pin-outs:
GND - 1
VDD - 2
OUT - 3

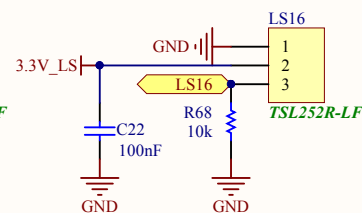
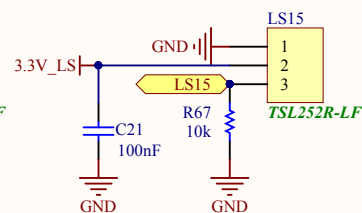
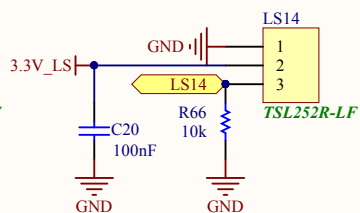
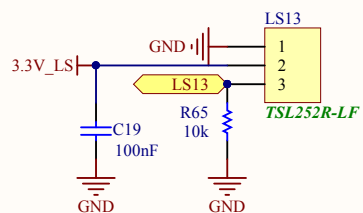
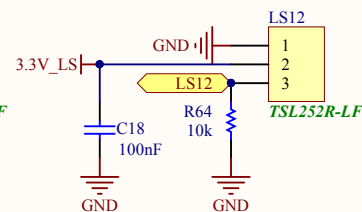
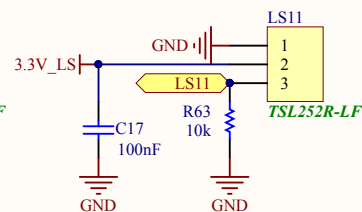
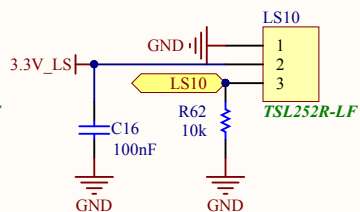
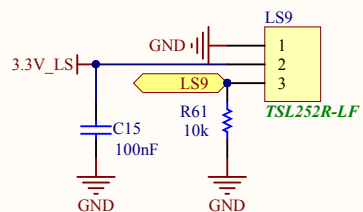
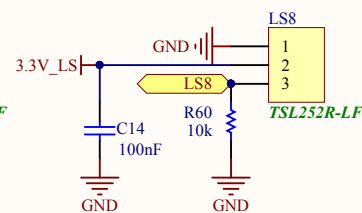
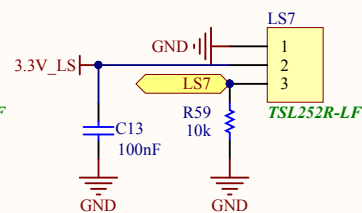
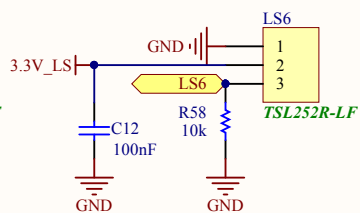
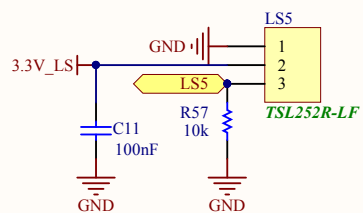
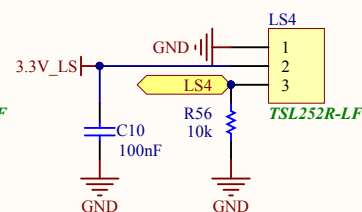
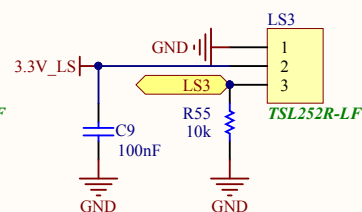
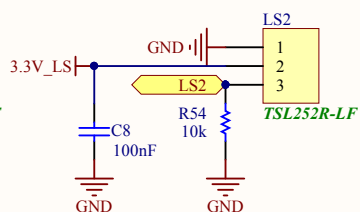
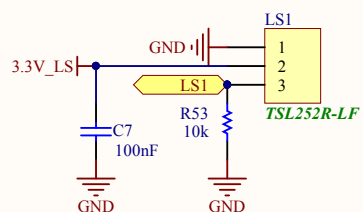
Light-to-Frequency parts:

TSL235
TSL237
TSL245 (IR light)

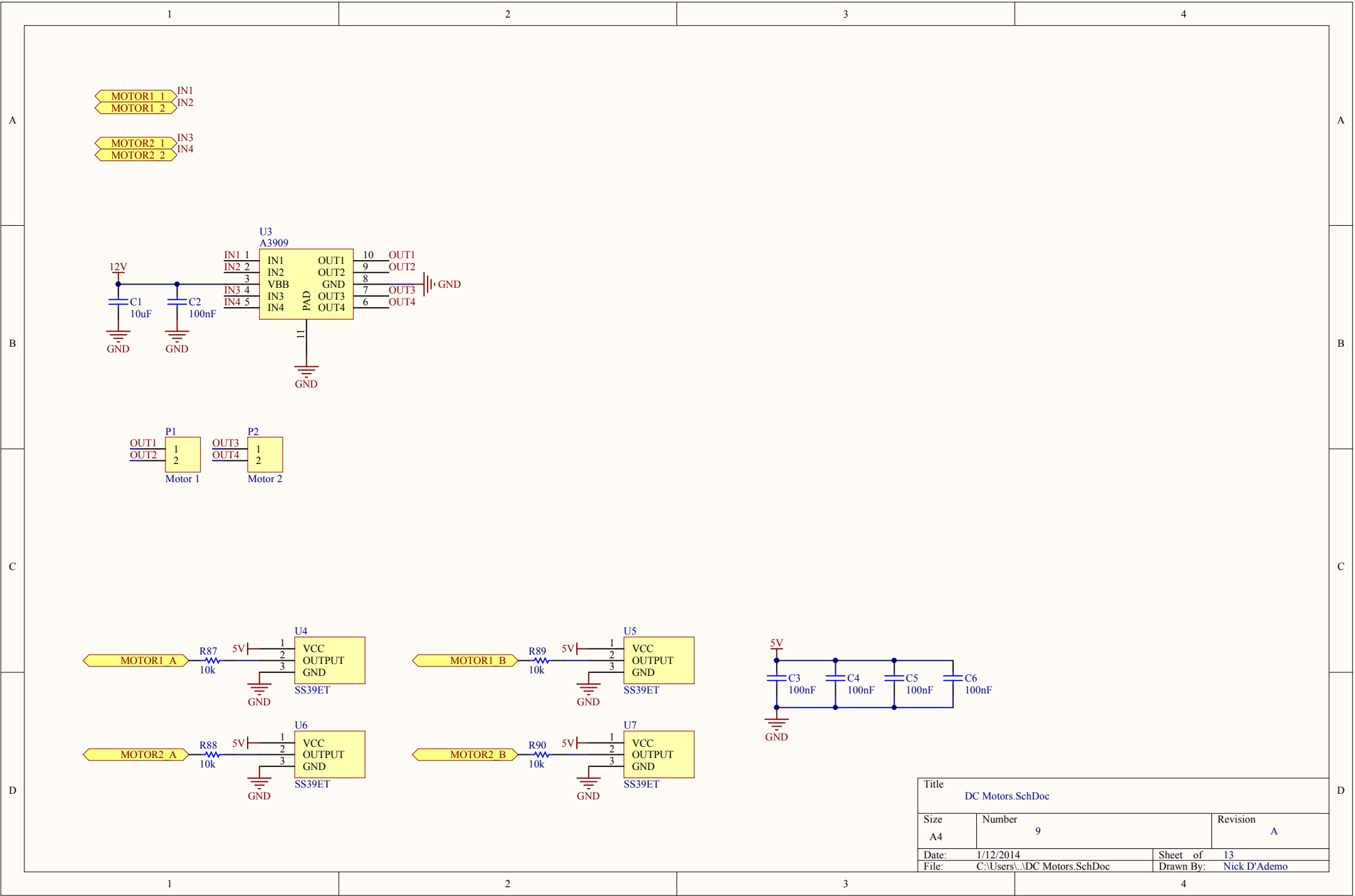
Light-to-Voltage parts:

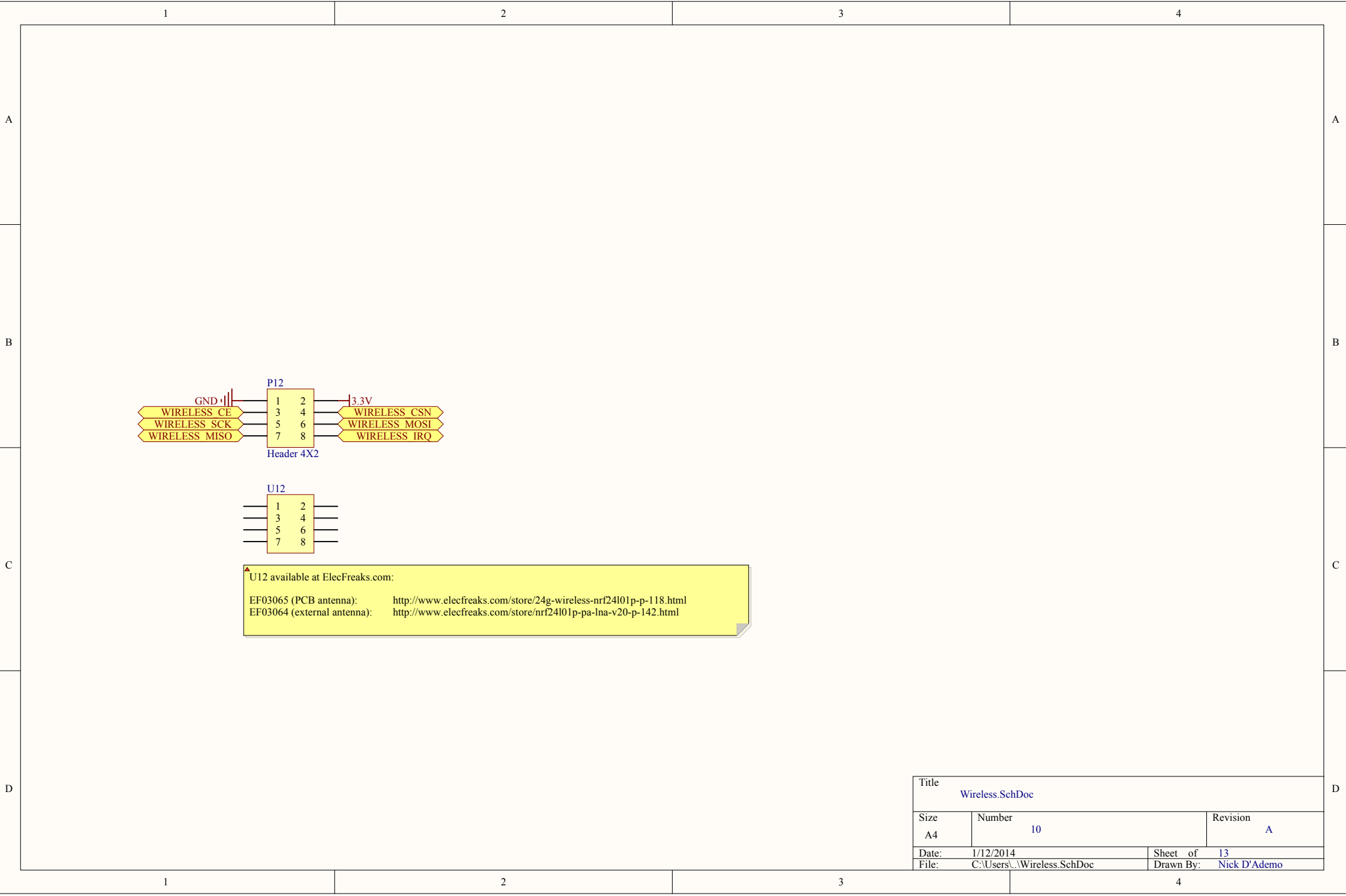
TSL125
TSL135
TSL145
TSL250R
TSL251R
TSL252R
TSL253R
TSL254R
TSL257
TSL260R (IR light)
TSL261R (IR light)
TSL262R (IR light)
TSL267 (IR light)

▲ Only install R53 to R68 if Light-to-Voltage parts are used.

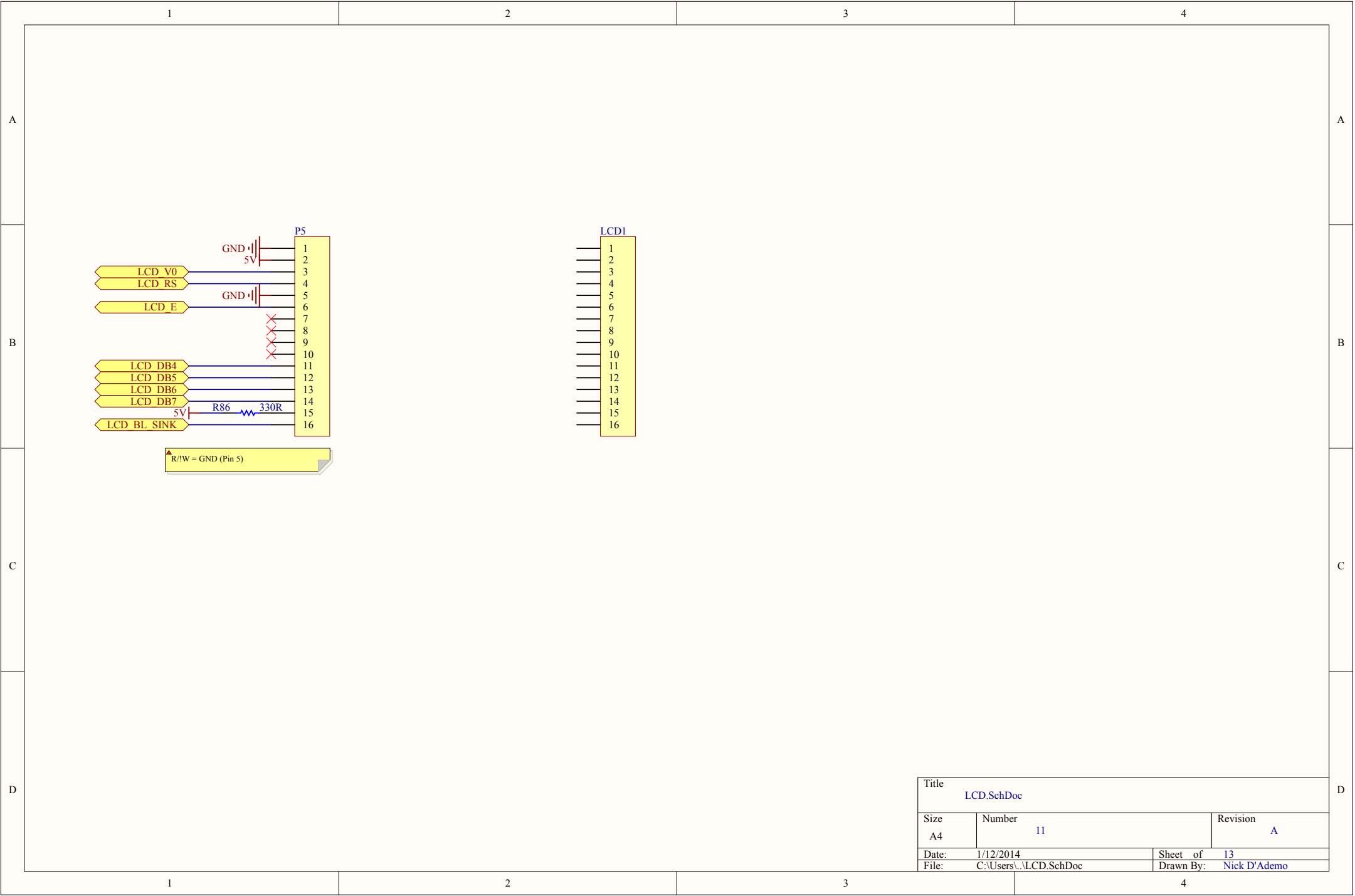


Title Light Sensors.SchDoc		
Size A4	Number 8	Revision A
Date: 1/12/2014	Sheet of 13	Drawn By: Nick D'Ademo
File: C:\Users\...\Light Sensors.SchDoc		

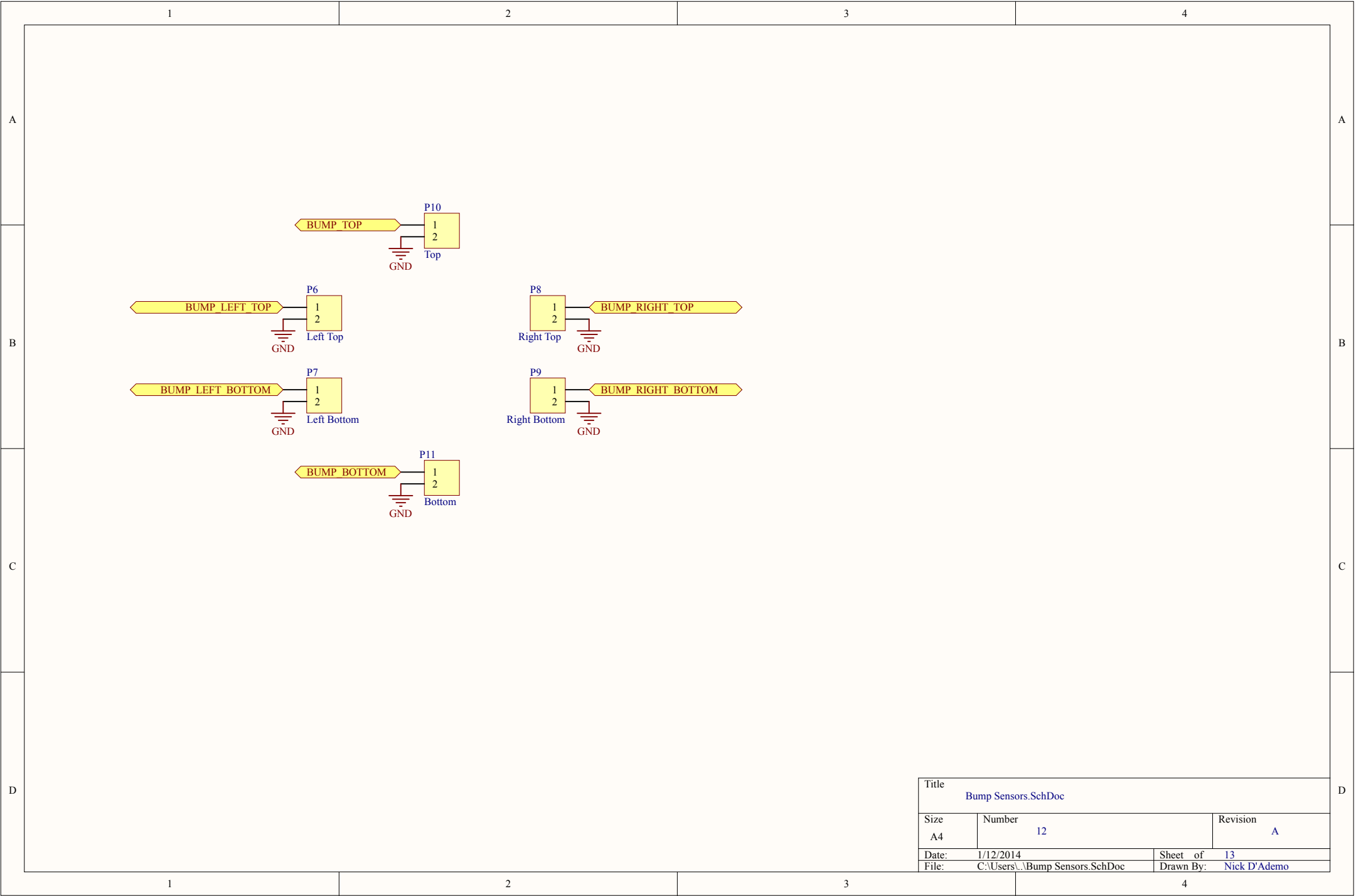


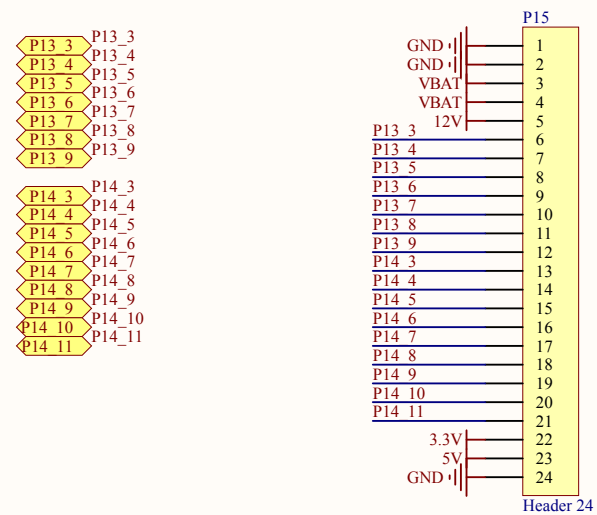
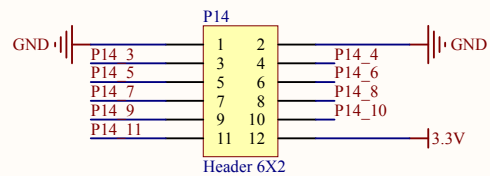
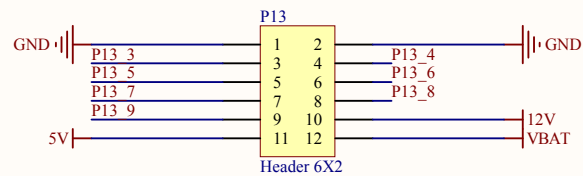


Title Wireless.SchDoc			
Size A4	Number 10		Revision A
Date:	1/12/2014	Sheet of	13
File:	C:\Users\...\Wireless.SchDoc	Drawn By:	Nick D'Ademo

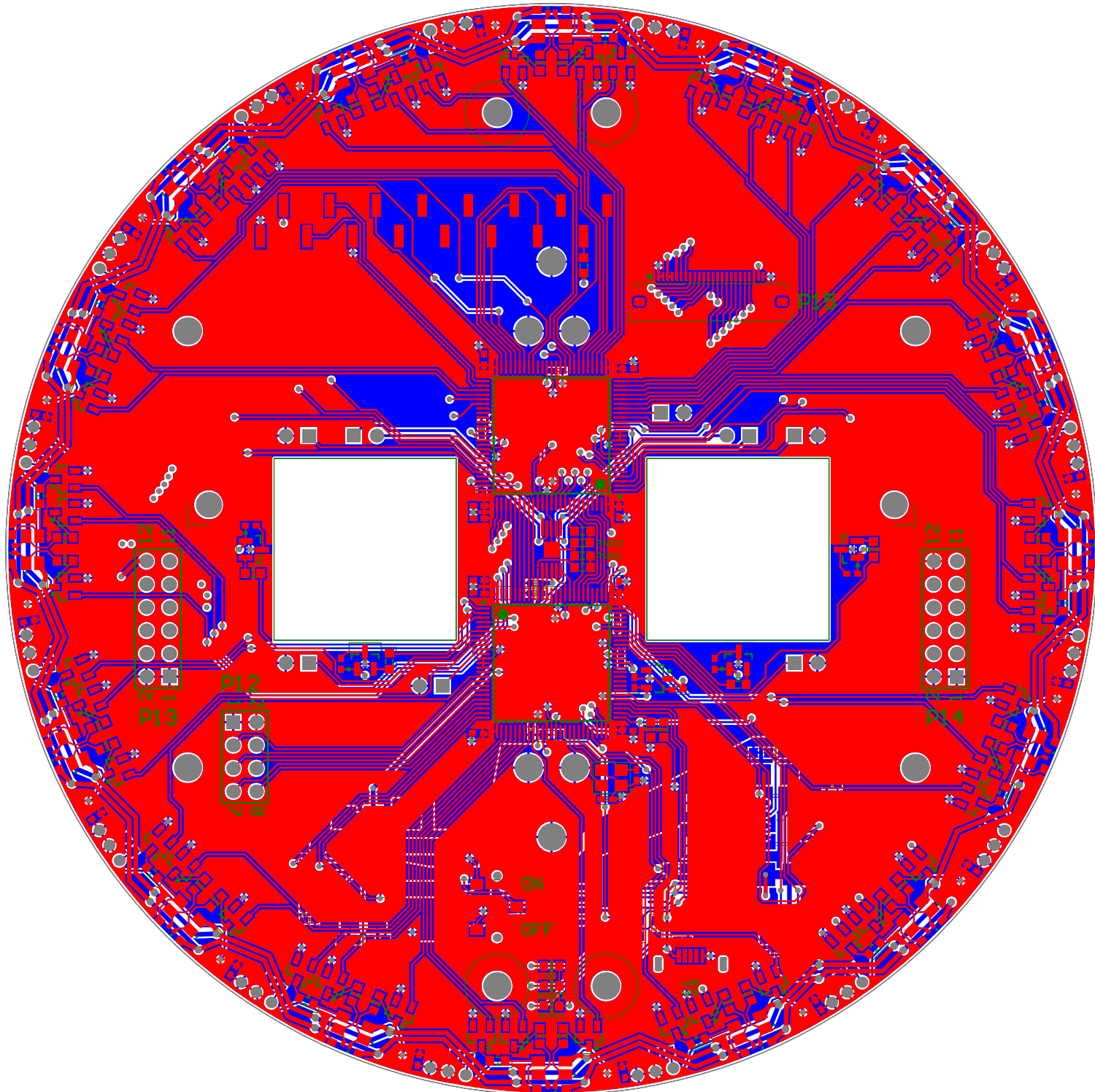


Title			LCD.SchDoc
Size	Number	Revision	
A4	11	A	
Date:	1/12/2014	Sheet of	13
File:	C:\Users\...\LCD.SchDoc	Drawn By:	Nick D'Ademo





Title Expansion Header.SchDoc			
Size A4	Number 13	Revision A	
Date:	1/12/2014	Sheet of	13
File:	C:\Users\...\Expansion Header.SchDoc	Drawn By:	Nick D'Ademo



Description	Designator	Footprint	Quantity	Value
18650 1-Cell Lithium Ion Battery	BT1		1	
TAIYO YUDEN - EMK107BBJ106MA-T - CAP CER 10UF 16V 20% XSR 0603	C1	CAPC1005N	1	10uF
Capacitor, X7R, ±10%, 16V, 0402	C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C55, C56			
	C23, C26	TC7343-2917	2	220uF
	C24, C27	TC3528-1411	2	47uF
	C25, C28	CAPC1005N	2	100pF
	C29, C30, C33, C34, C35, C36, C51, C52, C53, C54, C57, C58	CAPC1005N	12	1uF
	C31, C32	CAPC1005N	2	12pF
	D1, D3, D5, D7, D9, D11, D13, D15, D17, D19, D21, D23, D25, D27, D29, D31	OVSRRGBCC3_Si DE		16
	D2, D4, D6, D8, D10, D12, D14, D16, D18, D20, D22, D24, D26, D28, D30, D32			16
	D33, D34, D37			3
	D35, D36	SMB_DIODE		2
ROHM - SMLE12BCTTB6Q - LED, 0603, LO-CUR, 8LU	D38	LED_0603		1
VISHAY SEMICONDUCTOR - VS-MBR5130TRPBF - DIODE SCHOTTKY 30V 1A DO214AA	D39	LED_0603		1
KINGBRIGHT - KP-1608MAG - LED, 0603, GREEN, 70MCD, 56NM	D38	LED_0603		1
KINGBRIGHT - KP-1608YC - LED, SMD, 0603, YELLOW	D39	LED_0603		1
TAIYO YUDEN - NR6028T487M - INDUCTOR 4.7UH 27A 20% SMD	L1, L2	TV_NIR	2	4.7uH
SHENZHEN EONE ELECTRONICS CO.,LTD - IM120424015 - EONE High 16x2 (1602) Characters LCD	LCD1			1
AMS - TSL252R-LF - IC LIGHT TO VOLTAGE SENSOR 3PIN	L31, L52, L53, L54, L55, L56, L57, L58, L59, L510, L511, L512, L513, L514, L515, L516			
	AMS_5_3PIN		16	
	P1, P2, P6, P7, P8, P9, P10, P11	HDR1X2		8
	P3	USB3140-3D-0170-1-C		1
	P4, P16	S4		2
	P5	Samtec SSW-116-22-F-S-V5		1
	P13, P14	SSW-106-01-X-D		2
	P15	FFC2810		1
	Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q46, Q47, Q48			
	Q49	SOT-6		1
Q50, Q51	50VCL27P600-BAN		2	
R1, R2, R4, R5, R7, R8, R10, R11, R13, R14, R16, R17, R19, R20, R22, R23, R25, R26, R28, R29, R31, R32, R34, R35, R37, R38, R40, R41, R43, R44, R46, R47				
R3, R6, R8, R12, R15, R18, R21, R24, R27, R30, R33, R36, R39, R42, R45, R48				
R49, R50, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R67, R68, R69, R90				
R51, R52, R82, R83, R84				
R69				
R70				
R71, R72, R76, R77				
R73, R78				
R74				
R75				
R85				
R86				
R91				
R92				
R93				
R94				
R95				
R96				
R97				
R98				
R99				
R100				
R101				
R102				
R103				
R104				
R105				
R106				
R107				
R108				
R109				
R110				
R111				
R112				
R113				
R114				
R115				
R116				
R117				
R118				
R119				
R120				
R121				
R122				
R123				
R124				
R125				
R126				
R127				
R128				
R129				
R130				
R131				
R132				
R133				
R134				
R135				
R136				
R137				
R138				
R139				
R140				
R141				
R142				
R143				
R144				
R145				
R146				
R147				
R148				
R149				
R150				
R151				
R152				
R153				
R154				
R155				
R156				
R157				
R158				
R159				
R160				
R161				
R162				
R163				
R164				
R165				
R166				
R167				
R168				
R169				
R170				
R171				
R172				
R173				
R174				
R175				
R176				
R177				
R178				
R179				
R180				
R181				
R182				
R183				
R184				
R185				
R186				
R187				
R188				
R189				
R190				
R191				
R192				
R193				
R194				
R195				
R196				
R197				
R198				
R199				
R200				
R201				
R202				
R203				
R204				
R205				
R206				
R207				
R208				
R209				
R210				
R211				
R212				
R213				
R214				
R215				
R216				
R217				
R218				
R219				
R220				
R221				
R222				
R223				
R224				
R225				
R226				
R227				
R228				
R229				
R230				
R231				
R232				
R233				
R234				
R235				
R236				
R237				
R238				
R239				
R240				
R241				
R242				
R243				
R244				
R245				
R246				
R247				
R248				
R249				
R250				
R251				
R252				
R253				
R254				
R255				
R256				
R257				
R258				
R259				
R260				
R261				
R262				
R263				
R264				
R265				
R266				
R267				
R268				
R269				
R270				
R271				
R272				
R273				
R274				
R275				
R276				
R277				
R278				
R279				
R280				
R281				
R282				
R283				
R284				
R285				
R286				
R287				
R288				
R289				
R290				
R291				
R292				
R293				
R294				
R295				
R296				
R297				
R298				
R299				
R300				
R301				
R302				
R303				
R304				
R305				
R306				
R307				
R308				
R309				
R310				
R311				
R312				
R313				
R314				
R315				
R316				
R317				
R318				
R319				
R320				
R321				
R322				
R323				
R324				
R325				
R326				
R327				
R328				
R329				
R330				
R331				
R332				
R333				
R334				
R335				
R336				
R337				
R338				
R339				
R340				
R341				
R342				
R343				
R344				
R345				
R346				
R347				
R348				
R349				
R350				
R351				
R352				
R353				
R354				
R355				
R356				
R357				
R358				
R359				
R360				
R361				
R362				
R363				
R364				
R365				
R366				
R367				
R368				
R369				
R370				
R371				
R372				
R373				
R374				
R375				
R376				
R377				
R378				
R379				
R380				
R381				
R382				
R383				
R384				
R385				
R386				
R387				
R388				
R389				
R390				
R391				
R392				
R393				
R394				
R395				
R396				
R397				
R398				
R399				
R400				
R401				
R402				
R403				
R404				
R405				
R406				
R407				
R408				
R409				
R410				
R411				
R412				
R413				
R414				
R415				
R416				
R417				
R418				
R419				
R420				
R421				
R422				
R423				
R424				
R425				
R426				
R427				
R428				
R429				
R430				
R431				
R432				
R433				
R434				
R435				
R436				
R437				
R438				
R439				
R440				
R441				
R442				
R443				
R444				
R445				
R446				
R447				
R448				
R449				
R450				
R451				
R452				
R453				
R454				
R455				
R456				
R457				
R458				
R459				
R460				
R461				
R462				
R463				
R464				
R465				
R466				
R467				
R468				
R469				
R470				
R471				
R472				
R473				
R474				
R475				
R476				
R477				
R478				
R479				
R480				
R481				
R482				
R483				
R484				
R485				
R486				
R487				
R488				
R489				
R490				
R491				
R492				
R493				
R494				
R495				
R496				
R497				
R498				
R499				
R500				
R501				
R502				
R503				