

A

B

C

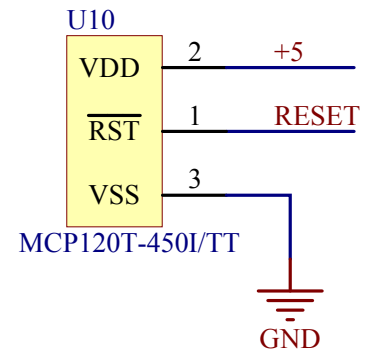
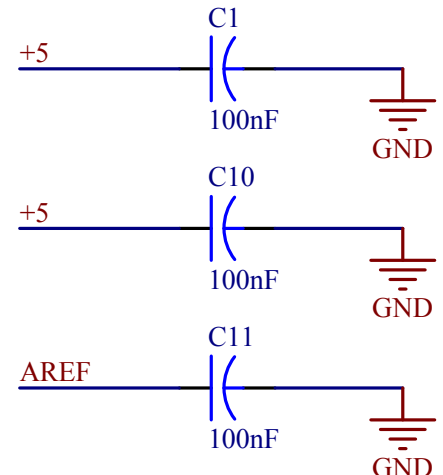
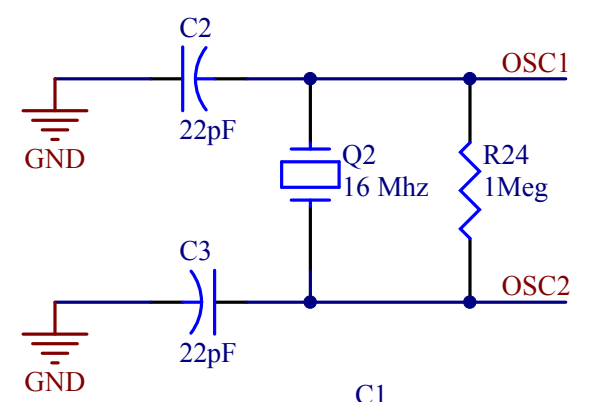
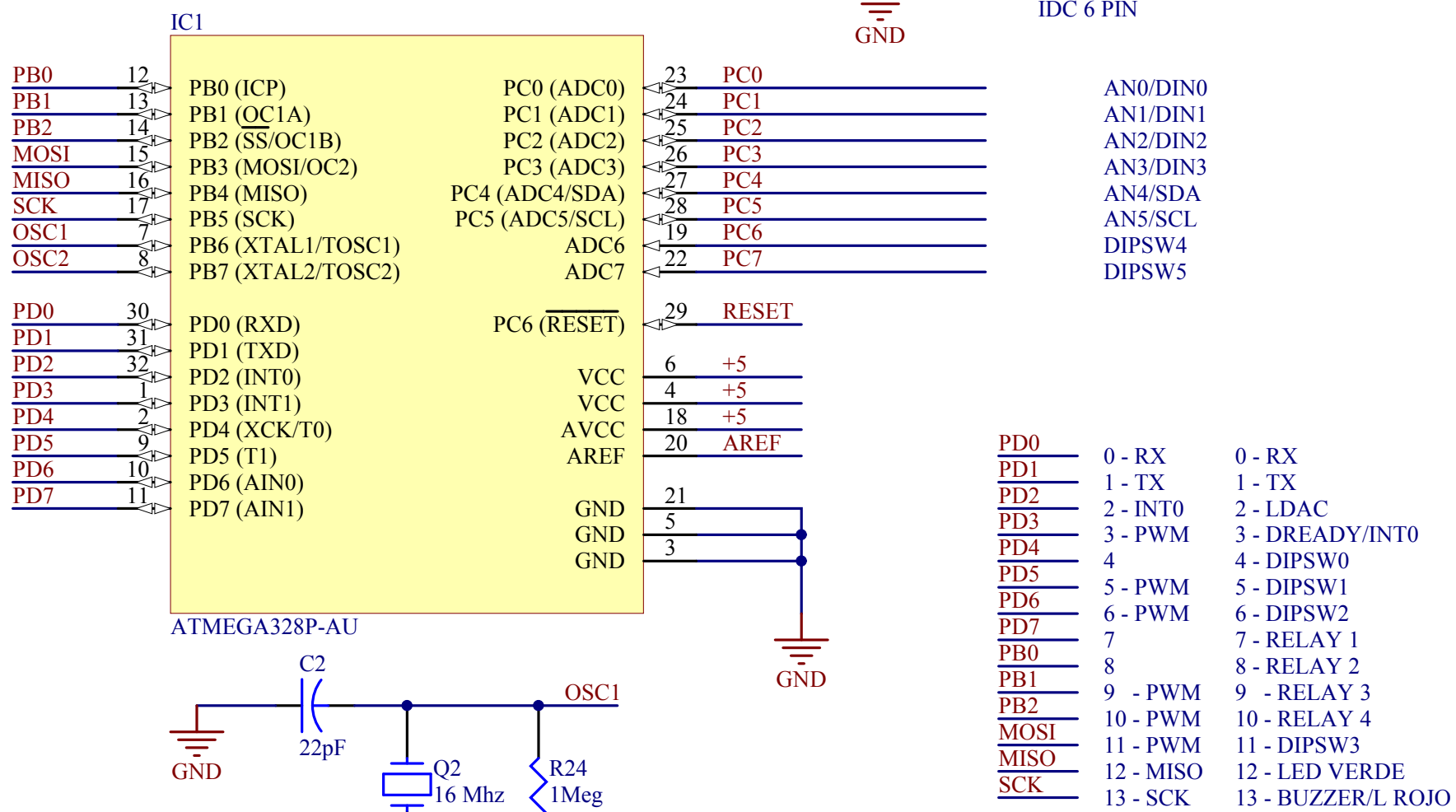
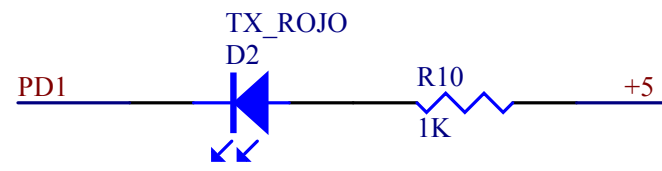
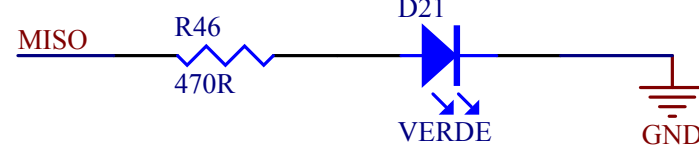
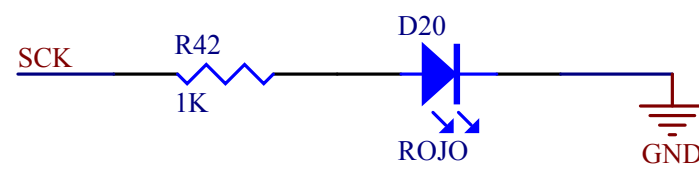
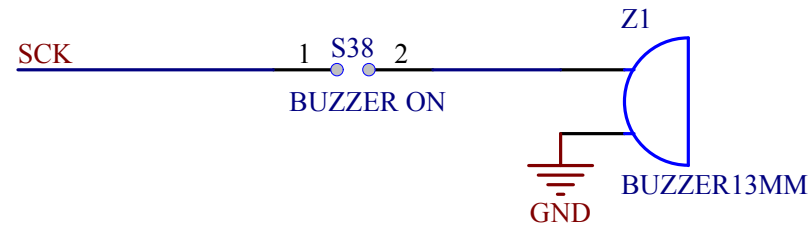
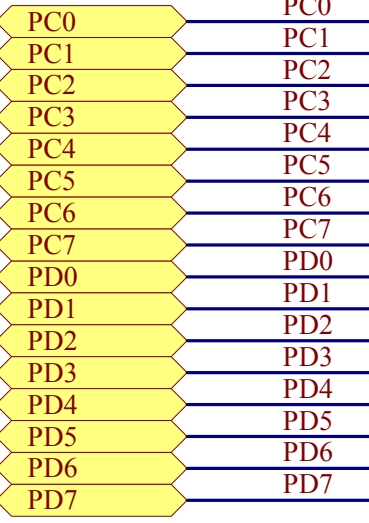
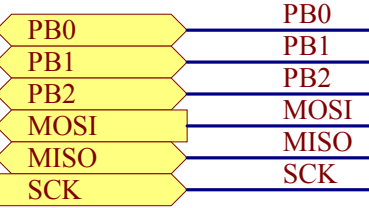
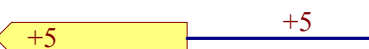
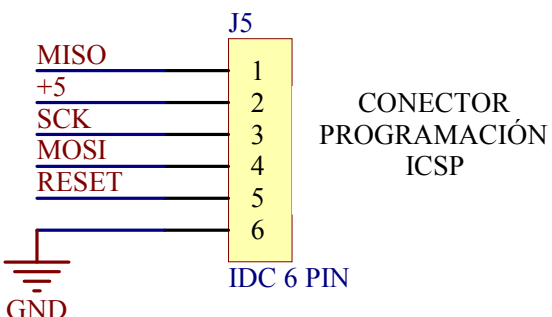
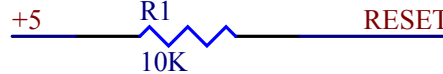
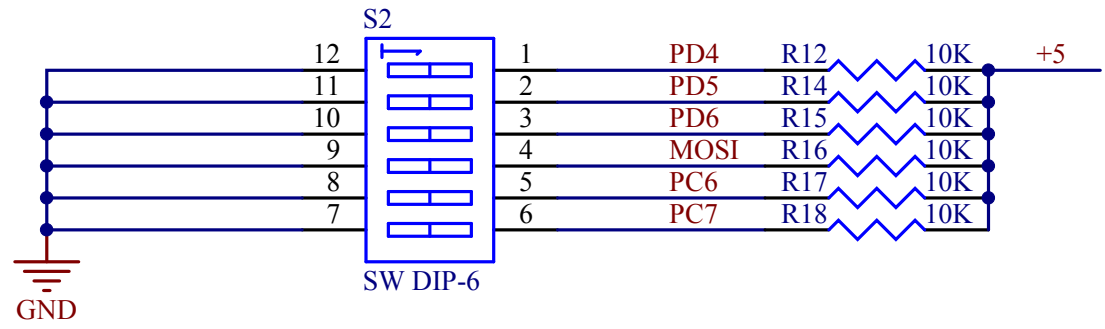
D

A

B

C

D



PD0	0 - RX	0 - RX
PD1	1 - TX	1 - TX
PD2	2 - INT0	2 - LDAC
PD3	3 - PWM	3 - DREADY/INT0
PD4	4	4 - DIPSW0
PD5	5 - PWM	5 - DIPSW1
PD6	6 - PWM	6 - DIPSW2
PD7	7	7 - RELAY 1
PB0	8	8 - RELAY 2
PB1	9 - PWM	9 - RELAY 3
PB2	10 - PWM	10 - RELAY 4
MOSI	11 - PWM	11 - DIPSW3
MISO	12 - MISO	12 - LED VERDE
SCK	13 - SCK	13 - BUZZER/L ROJO

141212 - MB4AR		
Title: MICROCONTROLLER		
Size: A3		
Organization: Ray Ingenieria Electronica, S.L.		
Date: 11/04/2015		
File: Micro.Sch	Number: 1	Rev.: 0
Drawn by: Raimundo Alfonso Sanchez	Sheet: 2	of 6

A

B

C

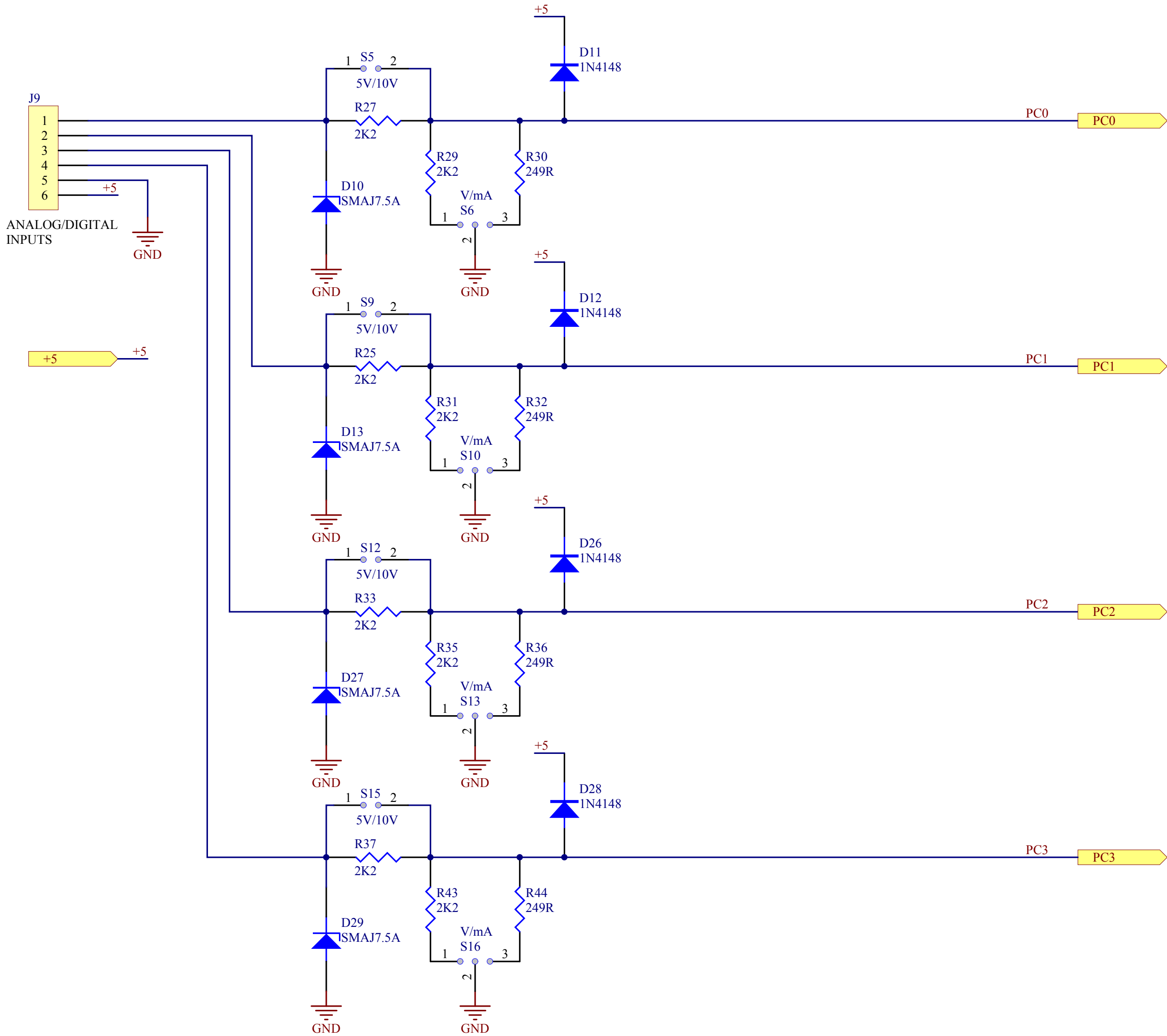
D

A

B

C

D



141212 - MB4AR		
Title: ANALOG/DIGITAL INPUTS		
Size: A3		
Organization: Ray Ingeniería Electrónica, S.L.		
Date: 11/04/2015	Number: 1	Sheet: 3 of 6
File: Entradas ana_dig.Sch	Rev.: 0	
Drawn by: Raimundo Alfonso Sanchez		

A

B

C

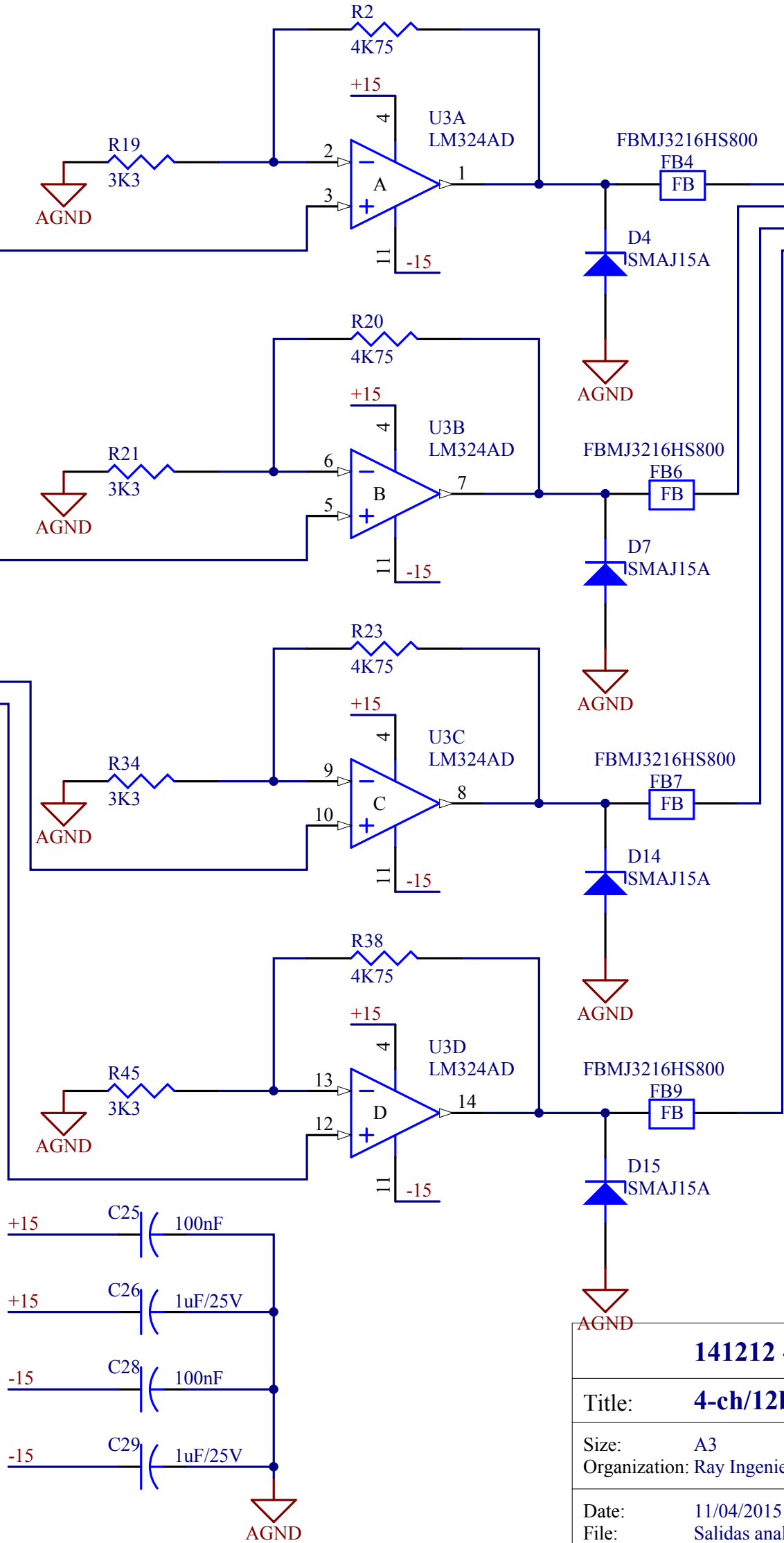
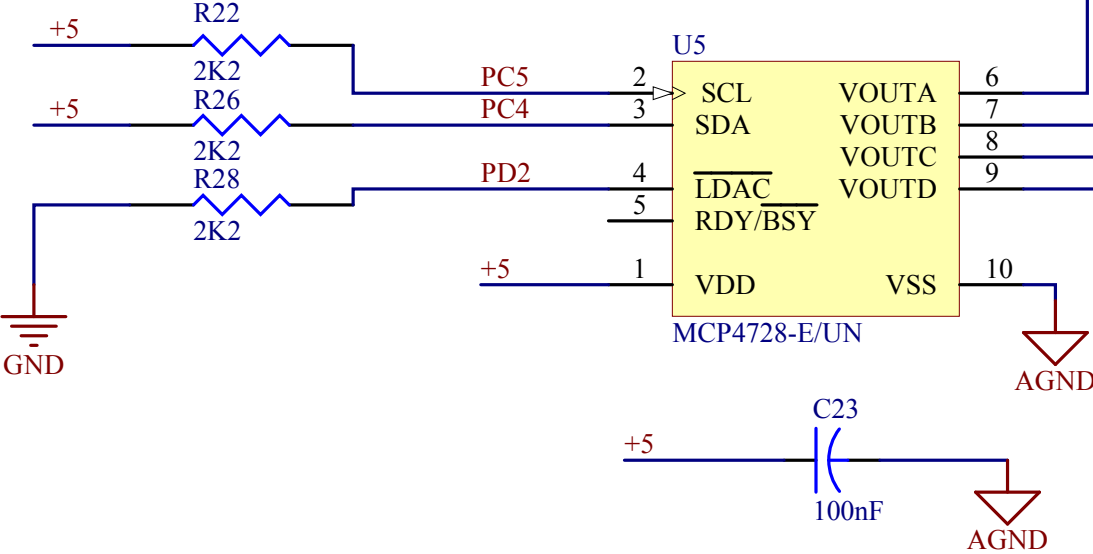
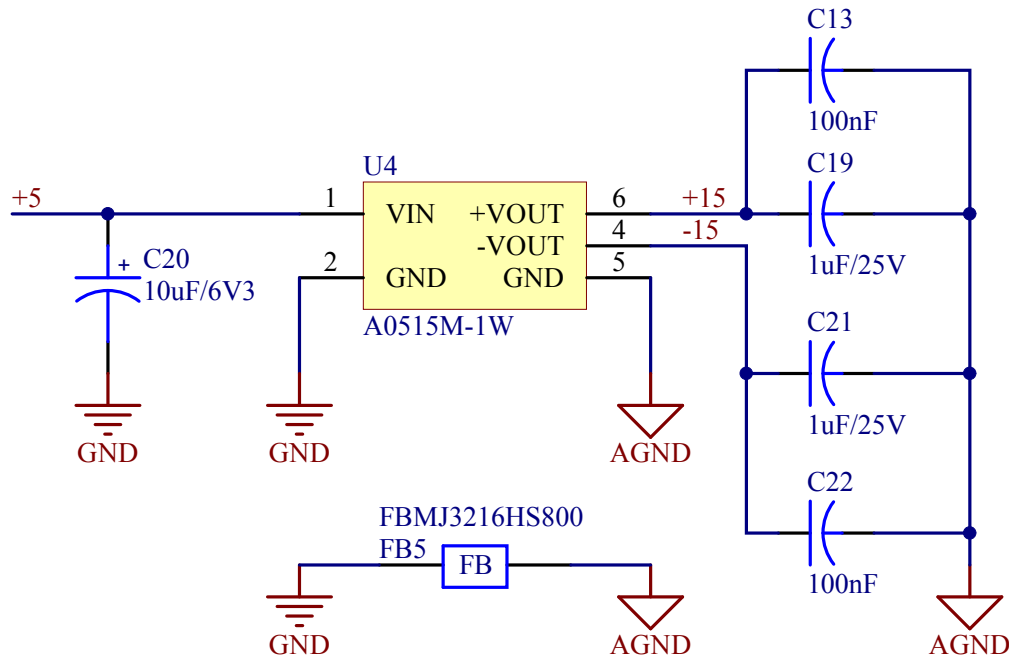
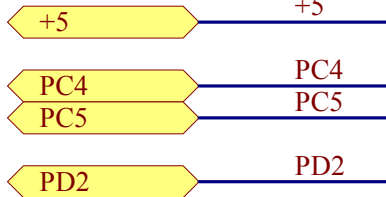
D

A

B

C

D



141212 - MB4AR

Title: 4-ch/12bits analog voltage outputs

Size: A3
Organization: Ray Ingeniería Electrónica, S.L.



Date: 11/04/2015
File: Salidas analogicas.Sch
Drawn by: Raimundo Alfonso Sanchez

Number: 1
Rev.: 0
Sheet: 4 of 6

+5

+5

PD7

PB0

PB1

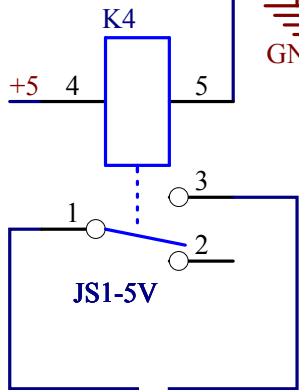
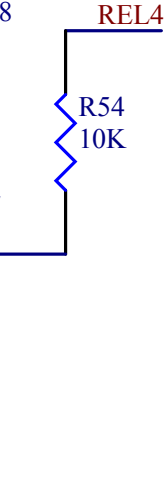
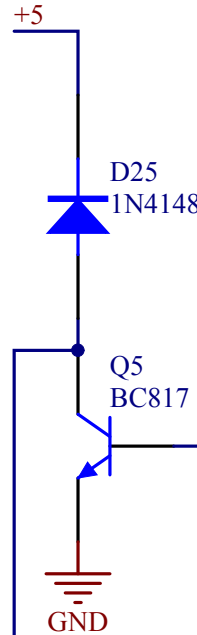
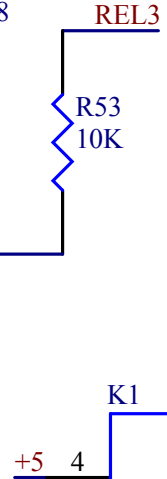
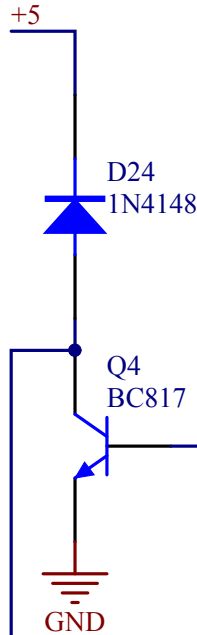
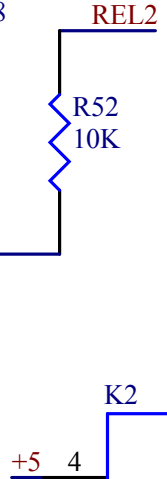
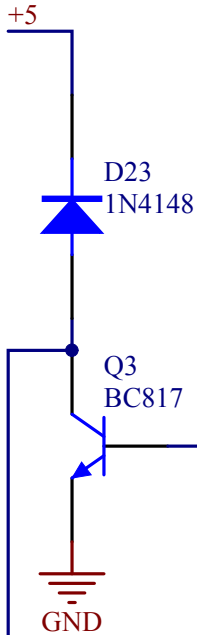
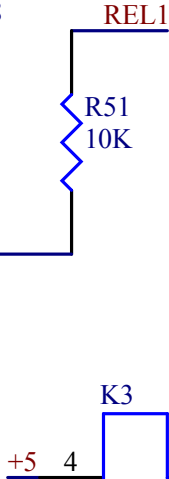
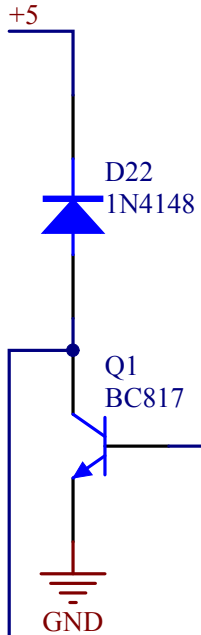
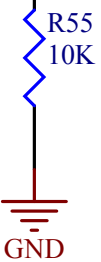
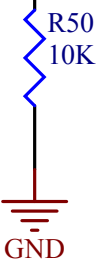
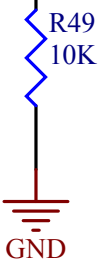
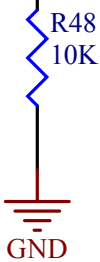
PB2

REL1

REL2

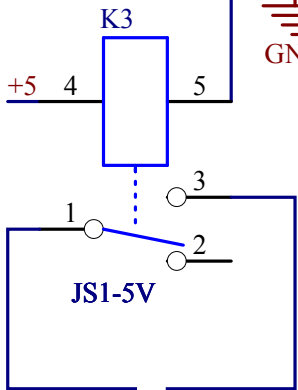
REL3

REL4

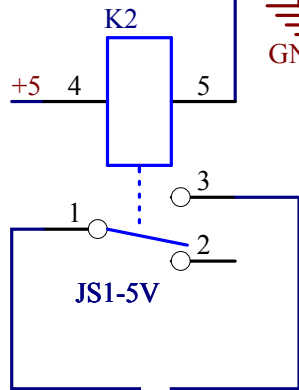


RELAY
OUTPUTS

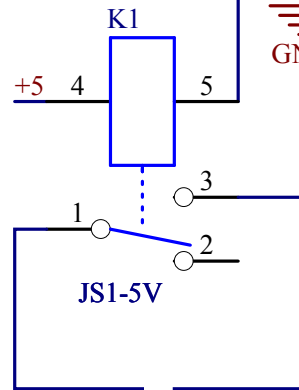
J11
OUT1



J12
OUT2



J13
OUT3



J14
OUT4

141212 - MB4AR

Title: RELAY OUTPUTS

Size: A3
Organization: Ray Ingeniería Electrónica, S.L.



Date: 11/04/2015
File: Salidas rele.Sch
Drawn by: Raimundo Alfonso Sanchez

Number: 1
Rev.: 0
Sheet: 5 of 6

A

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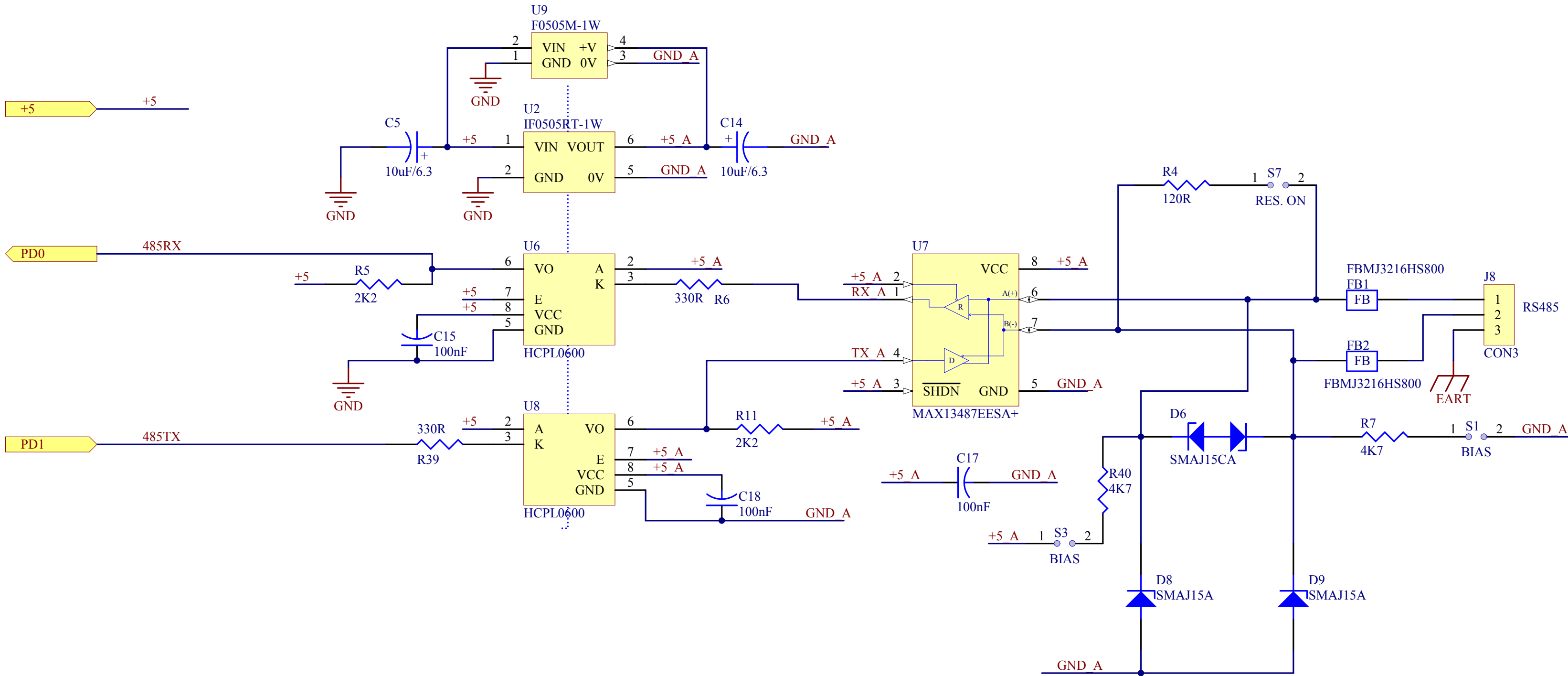
D

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D



141212 - MB4AR		
Title:	RS485	
Size:	A3	
Organization:	Ray Ingeniería Electrónica, S.L.	
Date:	11/04/2015	Number: 1
File:	RS485.Sch	Rev.: 0
Drawn by:	Raimundo Alfonso Sanchez	Sheet: 6 of 6

Quantity	Designator	Comment	Footprint	LibRef
16	R1, R12, R14, R15, R16, R17, R18, R41, R48, R49, R50, R51, R52, R53, R54, R55	10K	0603	RES1
13	R5, R11, R22, R25, R26, R27, R28, R29, R31, R33, R35, R37, R43	2K2	0603	RES1
12	C1, C4, C10, C11, C13, C15, C17, C18, C22, C23, C25, C28	100nF	0603	CAPACITOR
8	D10, D13, D16, D17, D18, D19, D27, D29	SMAJ75A	SMA	TRANSIL_UNI_SMA
8	D11, D12, D22, D23, D24, D25, D26, D28	1N4148	1206_DIODE	TS4148RX
6	D4, D7, D8, D9, D14, D15	SMAJ15A	SMA	TRANSIL_UNI_SMA
6	FB1, FB2, FB4, FB6, FB7, FB9	FBMJ3216HS800	0603	FERRITA_FBMJ3216HS800
5	C12, C19, C21, C26, C29	1uF/25V	1206	CAPACITOR
4	K1, K2, K3, K4	JS1-5V	RELE-JS1	RELAY-SPDT
4	Q1, Q3, Q4, Q5	BC817	SOT23	BC817
4	R19, R21, R34, R45	3K3	0603	RES1
4	R2, R20, R23, R38	4K75	0603	RES1
4	R30, R32, R36, R44	249R	0603	RES1
4	S5, S9, S12, S15	5V/10V	HDR1X2	JUMPER2
4	S6, S10, S13, S16	VmA	HDR1X3	JUMPER3
3	C6, C7, C8	100uF/6V3	CAP-0605	CAPACITOR POL
3	R8, R9, R46	470R	0603	RES1
2	C16, C27	3n3/250V	RAD0.3	CAPACITOR
2	C2, C3	22pF	0603	CAPACITOR
2	C5, C14	10uF/6.3	CAP-A	CAPACITOR POL
2	J1, J8	CON3	CLEMA3-5.08	CON3
2	J4, J9	CON6	CLEMA6-5.08	CON6
2	R10, R42	1K	0603	RES1
2	R6, R39	330R	0603	RES1
2	R7, R40	4K7	0603	RES1
2	S1, S3	BIAS	JMP-2-M	JUMPER2
2	U6, U8	HCPL0600	SO-G8	HCPL0600
1	C20	10uF/6V3	CAP-A	CAPACITOR POL
1	C24	10nF/1000V	1210	CAPACITOR
1	C9	220uF/50V	CAP200RP	CAPACITOR POL
1	D1	S2A	SMB	Diode 1N4001
1	D2	TX_ROJO	0603_LED	LED
1	D20	ROJO	0603_LED	LED
1	D21	VERDE	0603_LED	LED
1	D3	RX_VERDE	0603_LED	LED
1	D5	POWER	0603_LED	LED
1	D6	SMAJ15CA	SMA	TRANSIL_BID_SMA
1	F1	1A/250V	FUSE1	FUSE1
1	FA1	IRM-05-5	IRM-05-XX	IRM-05-XX
1	FB5	FBMJ3216HS800	1206	FERRITA_FBMJ3216HS800
1	FB8	FERRITA_2773021447	FERRITA_2773021447	FERRITA_2773021447
1	K1	ATMEGA328P-AU	32A_N	ATmega8-16AI
1	J11	OUT1	CLEMA2-5.08	CON2
1	J12	OUT2	CLEMA2-5.08	CON2
1	J13	OUT3	CLEMA2-5.08	CON2
1	J14	OUT4	CLEMA2-5.08	CON2
1	J16	RJ11 6/6	JACK FCC-68 6/6	CON6
1	J5	IDC 6 PIN	HDR2X3	CON6
1	Q2	16 Mhz	XTAL-HC49US	CRYSTAL
1	R13	1Meg	1206	RES1
1	R24	1Meg	0603	RES1
1	R3	0R	RES400	RES1
1	R4	120R	0603	RES1
1	R47	9.6J, 300VCA	RAD0.2	VARISTOR
1	S2	SW DIP-6	DPSW-6	SW DIP-6
1	S23	+5V EN	HDR1X2	JUMPER2
1	S24	DREADY ON	HDR1X2	JUMPER2
1	S25	INT0 ON	HDR1X2	JUMPER2
1	S38	BUZZER ON	JMP-2-M	JUMPER2
1	S7	RES. ON	HDR1X2	JUMPER2
1	U1	K7805-1000	K78XX-1000	78XX
1	U10	MCP120T-450VTT	SOT-23-TT3_L	MCP120T-450VTT
1	U2	IF0505RT-1W	IF_RN_1W	IF0505RT-1W
1	U3	LM324AD	SO-G14	LM324AN
1	U4	A0515M-1W	NPSIP7_6mm	RB-XXXX-D
1	U5	MCP4728-E/UN	MSOP-10	MCP4728-E/UN
1	U7	MAX13487EESA+	SO-G8	MAX13487EESA+
1	U9	F0505M-1W	NPSIP4	NME0505S
1	X4	CON5	HDR1X5	CON5
1	Z1	BUZZER13MM	BUZZER13MM	BUZZER13MM

