

RTL8102EL/8103EL/8111DL Circuit

Rev. 1.07

PAGE INDEX

1. Title page
2. POWER
3. RTL8102EL/8103EL/8111DL
4. DSM Reference Circuit
5. RTL8102EL BOM List
6. RTL8103EL BOM List
7. RTL8111DL BOM List
8. Change Notes

Realtek Semiconductor Corp.		
Title RTL8102EL/8103EL/8111DL circuit: Index		
Size A4	Document Number RTL8102EL_8103EL_8111DL_107.DSN	Rev 1.07
Date: Monday, June 08, 2009 Sheet 1 of 8		

A

B

C

D

E

4

4

3

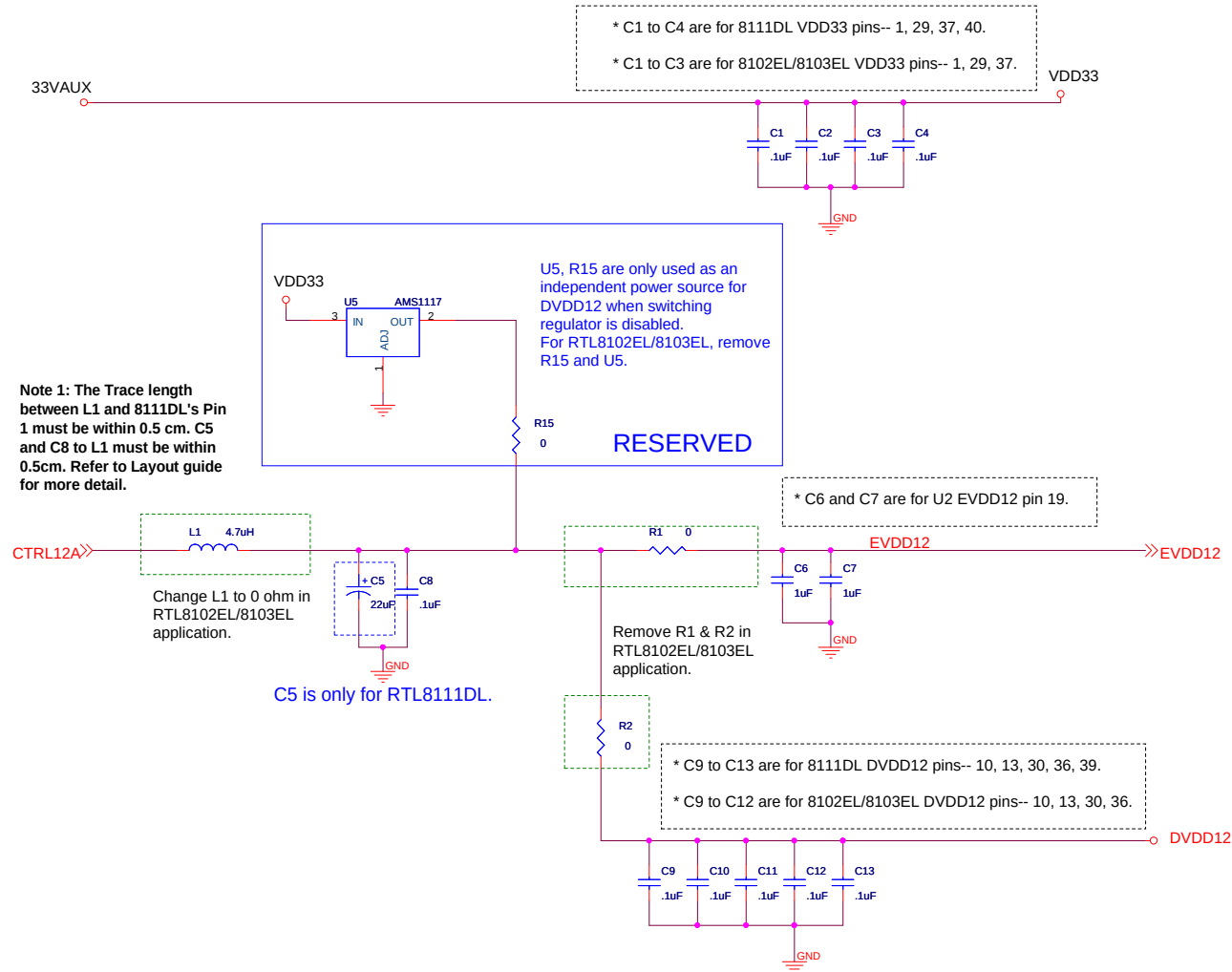
3

2

2

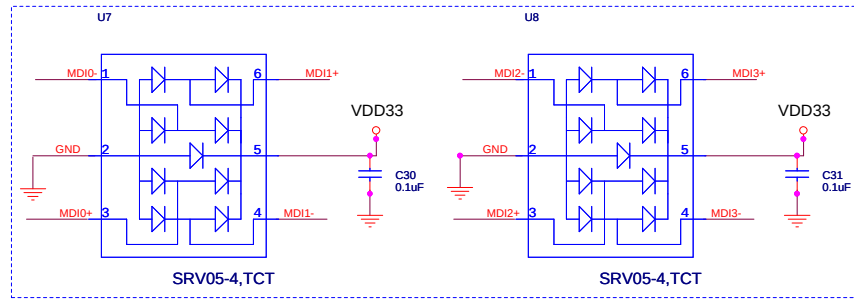
1

1



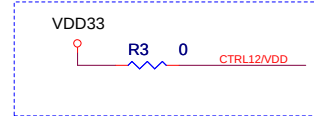
Realtek Semiconductor Corp.			
Title RTL8102EL/8103EL/8111DL circuit: POWER			
Size A3	Document Number RTL8102EL_8103EL_8111DL_107.DSN		Rev 1.07
Date: Monday, June 08, 2009		Sheet 2 of 8	

Optional

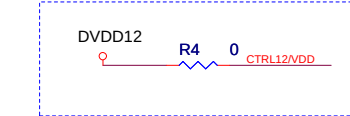


U7 and U8 are ESD protection array. Reserve for cable discharge.

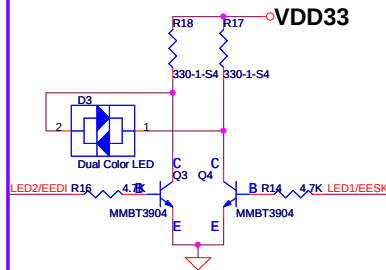
For RTL8111DL, use this block



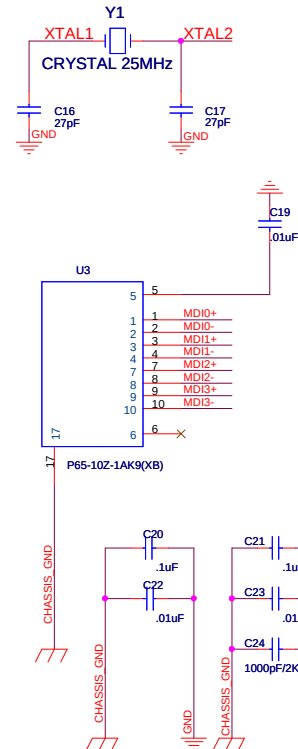
For RTL8102EL/8103EL, use this block.



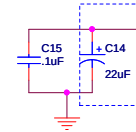
For RTL8111DL, Use this Block
When Using Dual Color LED + EEPROM



Dual Color Use LED1-LED3, LED0 For Active Signal



C14 is only for RTL8111DL.

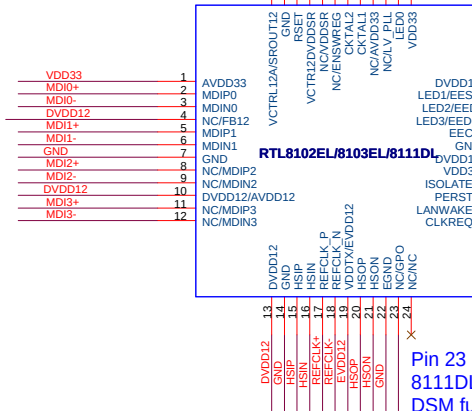


Remove R5 and R6 for RTL8102EL/8103EL application.

R5 and R6 are used in the RTL8111DL application.
Remove R6 if switching regulator is enabled. Remove R5 if external power 1.2V is used.

R7 value should be 2.49K (1%) for all application.

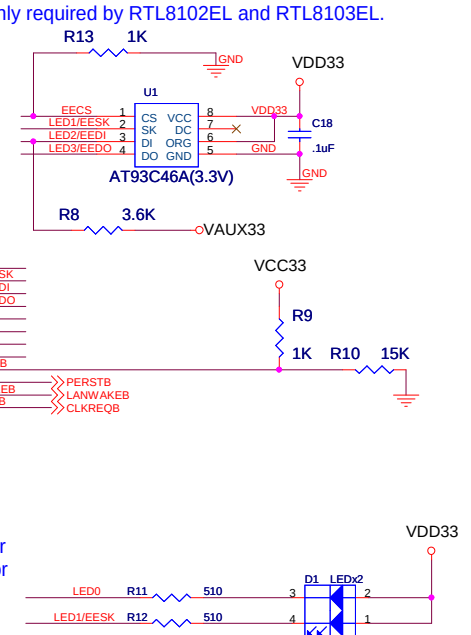
EVDD12 >> EVDD12
CTRL12A << CTRL12A



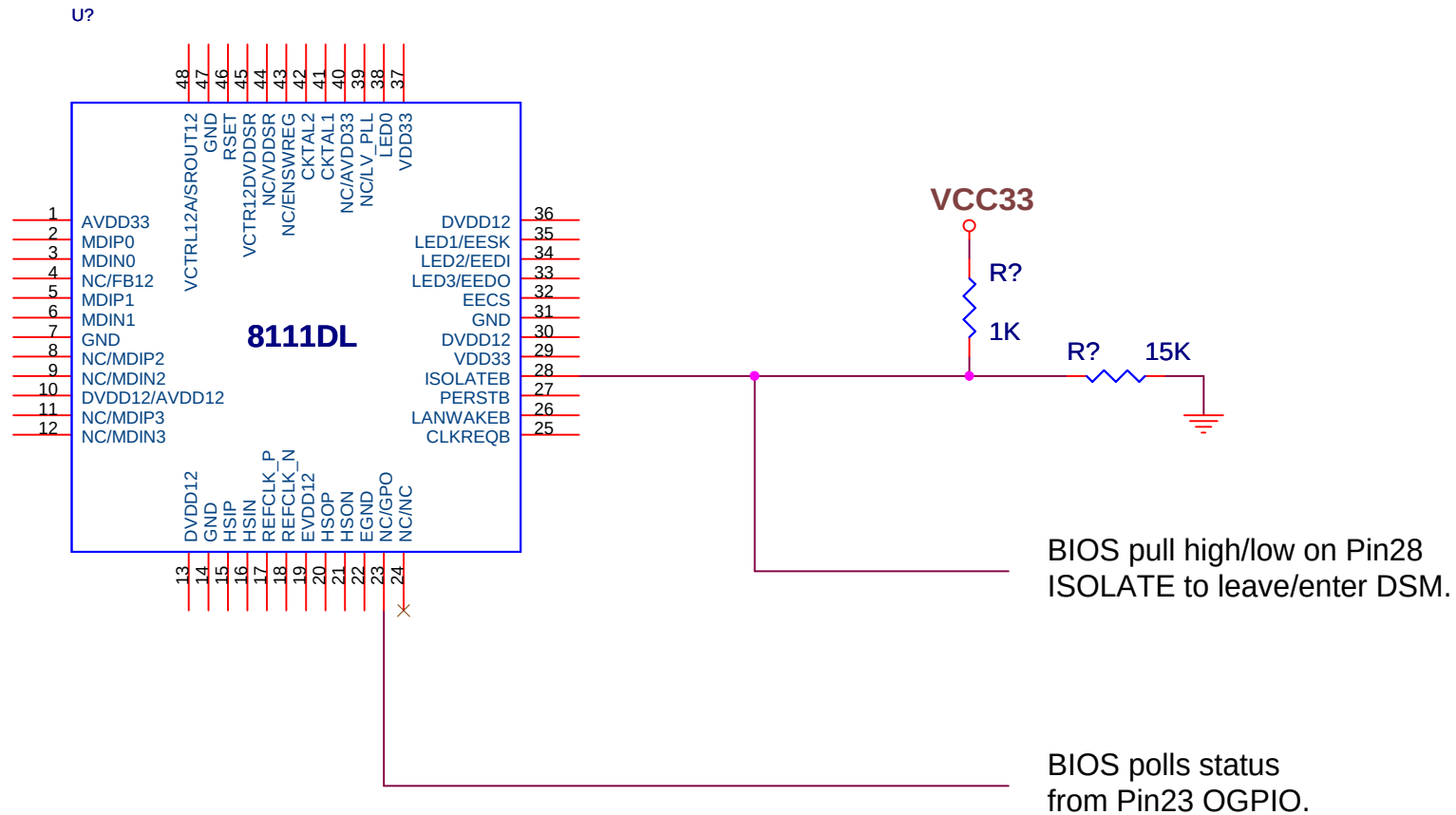
Pin 23 is GPO pin for 8111DL. It is used for DSM function.

REFCLK+ >> REFCLK+
REFCLK- >> REFCLK-
HSIP >> HSIP
HSIN >> HSIN

HSOP C25 100nF << HSOP
HSON C26 100nF << HSON



DSM reference circuit diagram.



Realtek Semiconductor Corp.

Title
RTL8102EL/8103EL/8111DL circuit: DSM reference circuit diagram

Size
A Document Number
RTL8102EL_8103EL_8111DL_107.DSN

Rev
1.07

Date: Monday, June 08, 2009

Sheet 4 of 8

RTL8102EL BOM List

Item	Quantity	Reference	Part
1	12	C1,C2,C3,C8,C9,C10, C11,C12,C15,C18,C20, C21	0.1uF
2	2	C6,C7	1uF
3	2	C17,C16	27pF
4	3	C19,C22,C23	.01uF
5	1	C24	1000pF/2KV
6	2	C25,C26	100nF
7	1	D1	LEDx2
8	1	L1 changes to	0 ohm
9	1	R4	0
10	1	R7	2.49K 1%
11	1	R8	3.6K
12	1	R9	1K
13	1	R10	15K
14	2	R11,R12	510
15	1	R13	1K
16	1	U1	AT93C46A(3.3V) (optional)
17	1	U2	RTL8102EL
18	1	U3	P65-10Z-1AK9(XB)
19	1	Y1	CRYSTAL 25MHz

Realtek Semiconductor Corp.

Title
RTL8102EL/8103EL/8111DL circuit: RTL8102EL BOM List

Size A	Document Number RTL8102EL_8103EL_8111DL_107.DSN	Rev 1.07
-----------	--	-------------

Date: Monday, June 08, 2009	Sheet 5 of 8
-----------------------------	--------------

RTL8103EL BOM List

Item	Quantity	Reference	Part
1	12	C1,C2,C3,C8,C9,C10, C11,C12,C15,C18,C20, C21	0.1uF
2	2	C6,C7	1uF
3	2	C17,C16	27pF
4	3	C19,C22,C23	.01uF
5	1	C24	1000pF/2KV
6	2	C25,C26	100nF
7	1	D1	LEDx2
8	1	L1 changes to	0 ohm
9	1	R4	0
10	1	R7	2.49K 1%
11	1	R8	3.6K
12	1	R9	1K
13	1	R10	15K
14	2	R11,R12	510
15	1	R13	1K
16	1	U1	AT93C46A(3.3V) (optional)
17	1	U2	RTL8103EL
18	1	U3	P65-10Z-1AK9(XB)
19	1	Y1	CRYSTAL 25MHz

Realtek Semiconductor Corp.

Title
RTL8102EL/8103EL/8111DL circuit: RTL8103EL BOM List

Size
A

Document Number
RTL8102EL_8103EL_8111DL_107.DSN

Rev
1.07

Date: Monday, June 08, 2009

Sheet 6 of 8

RTL8111DL BOM List

Item	Quantity	Reference	Part
1	14	C1,C2,C3,C4,C8,C9,C10, C11,C12,C13,C15,C18,C20, C21	0.1uF
2	2	C14,C5	22uF
3	2	C6,C7	1uF
4	2	C17,C16	27pF
5	3	C19,C22,C23	.01uF
6	1	C24	1000pF/2KV
7	2	C25,C26	100nF
8	1	D1	LEDx2
9	1	L1	4.7uH
10	4	R1,R2,R3,R5	0
11	1	R7	2.49K 1%
12	1	R8	3.6K
13	1	R9	1K
14	1	R10	15K
15	2	R11,R12	510
16	1	U1	AT93C46A(3.3V) (optional)
17	1	U2	RTL8111DL
18	1	U3	P65-10Z-1AK9(XB)
19	1	Y1	CRYSTAL 25MHz

Realtek Semiconductor Corp.

Title
RTL8102EL/8103EL/8111DL circuit: RTL8111DL BOM List

Size A	Document Number RTL8102EL_8103EL_8111DL_107.DSN
-----------	--

Rev 1.07

Date: Monday, June 08, 2009	Sheet 7 of 8
-----------------------------	--------------

Change Notice from 1.00 to 1.01

1. Add reserved circuit for independent 1.2V source. (Page 2)
2. Update comment about R5 and R6. (Page 3)
3. Update RTL8111DL BOM list. (Page 3)
4. Add RTL8103EL circuit and BOM List.

Change Notice from 1.01 to 1.02

1. Update RTL8102EL, 8103EL, 8111DL BOM List.

Change Notice from 1.02 to 1.03

1. Update RTL8102EL, 8103EL, 8111DL BOM List.
2. Add comment about C6 for 8111DL application. (Page 2)
3. Add comment about R13. (Page 3)

Change Notice from 1.03 to 1.04

1. Update 8102EL, 8103EL BOM List.
2. Modify C4 comment for the 8102EL/8103EL application. (Page 2)
3. Modify R5 and R6 comment for the 8111DL application. (Page 3)
4. Add optional ESD protection array circuit for the 8111DL application. (Page 3)
5. Add DSM reference circuit page. (Page 4)

Change Notice from 1.04 to 1.05

1. Change C7 from 0.1uF to 1uF for RTL8102EL, RTL8103EL and RTL8111DL. (Page 2)
2. Update 8102EL, 8103EL and RTL8111DL BOM List.
3. Modify comment about R13 for RTL8103EL. (Page 3)

Change Notice from 1.05 to 1.06

1. Change R13 from 10K to 1K (Page 3)
2. Update ESD Protection array reference part to SRV05-4, TCT. (Page 3).

Change Notice from 1.06 to 1.07

1. Add Dual Color LED Schematic.

Realtek Semiconductor Corp.		
Title RTL8102EL/8103EL/8111DL circuit: Change Notes		
Size A4	Document Number RTL8102EL_8103EL_8111DL_107.DSN	Rev 1.07
Date: Monday, June 08, 2009 Sheet 8 of 8		