


- 1 Material: Isola IS400 or similar recommended
- 2 Finish: ENIG (Electroless Nickel Immersion Gold), nickel layer $1 \div 4 \mu\text{m}$, gold layer $0.076 \div 0.2 \mu\text{m}$
- 3 All gerber files generated as a top view
- 4 Gerber files for internal power planes have to be inverted for manufacturing !
5. Fabricate according IPC-A-600
6. Non-conductive epoxy ink recommended for silkscreen
7. Silkscreen should not cover any exposed copper, silkscreen gerber data have to be trimmed eventually
8. All holes diameter refer to final diameter after eventual plating

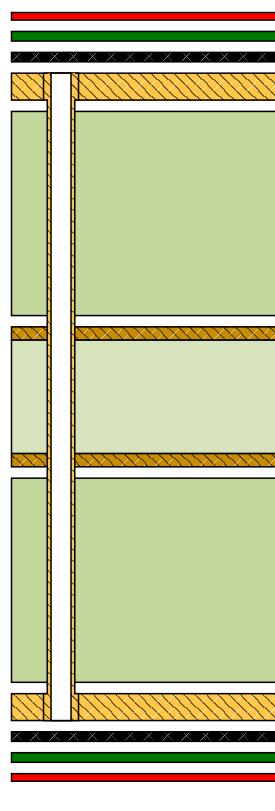
Gerber and drill file extensions table

Gerber files	Description
.GTO	Top side silkscreen
.GTP	Top side solder paste mask
.GTS	Top side solder mask
.GTL	L1_TOP - Top Layer
.GP1	L2_GND - Internal power plane - has to be inverted for manufacturing
.GP2	L3_PWR - Internal power plane - has to be inverted for manufacturing
.GBL	L4_BOTTOM - Bottom Layer
.GBS	Bottom side solder mask
.GBP	Bottom side solder paste mask
.GBO	Bottom side silkscreen
.GM1	Board outline
Drill files	
.TXT	Layer pair L1_TOP to L4_BOTTOM Layer

OBC LLC switch board		Revision: 0.2	State: released
<i>PCB fabrication notes and requirements</i>		Fabrication document	Sheet 1 / 15
Engineer: Stefan Kostrec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LL_C_switch_board.PcbDoc		ON Semiconductor Solution Engineering Center Piestany 	
Repository revision: 1409			

Layer Stack

Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Overlay			Legend	GTO
Surface Material	Top Solder	0.0254mm(1.000mil)	SM-001	Solder Mask	GTS
Nickel, Gold	Top Copper Plating	0.0250mm(0.984mil)		Copper Plating	
Cu foil 70 um	L1_TOP	0.0711mm(2.800mil)		Signal	GTL
Prepreg		0.5400mm(21.260mil)	IS400 (3x7628 FZ01)	Dielectric	
Copper foil 35 um	L2_GND	0.0350mm(1.378mil)		Internal Plane	GP1
Core		0.3000mm(11.811mil)	IS400 (2x1652)	Dielectric	
Copper foil 35 um	L3_PWR	0.0350mm(1.378mil)		Internal Plane	GP2
Prepreg		0.5400mm(21.260mil)	IS400 (3x7628 FZ01)	Dielectric	
Cu foil 70 um	L4_BOTTOM	0.0711mm(2.800mil)		Signal	GBL
Nickel, Gold	Bottom Copper Plating	0.0250mm(0.984mil)		Copper Plating	
Surface Material	Bottom Solder	0.0254mm(1.000mil)	SM-001	Solder Mask	GBS
	Bottom Overlay			Legend	GBO
Total thickness: 1.6930mm(66.655mil)					



OBC LLC switch board		Revision: 0.2	State: released
<i>Layer stack details</i>		Fabrication document	Sheet 2 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LL_C_switch_board.PcbDoc		ON Semiconductor	
Repository revision: 1409		Solution Engineering Center Piestany	



1

2

3

4

5

A

A

B

B

C

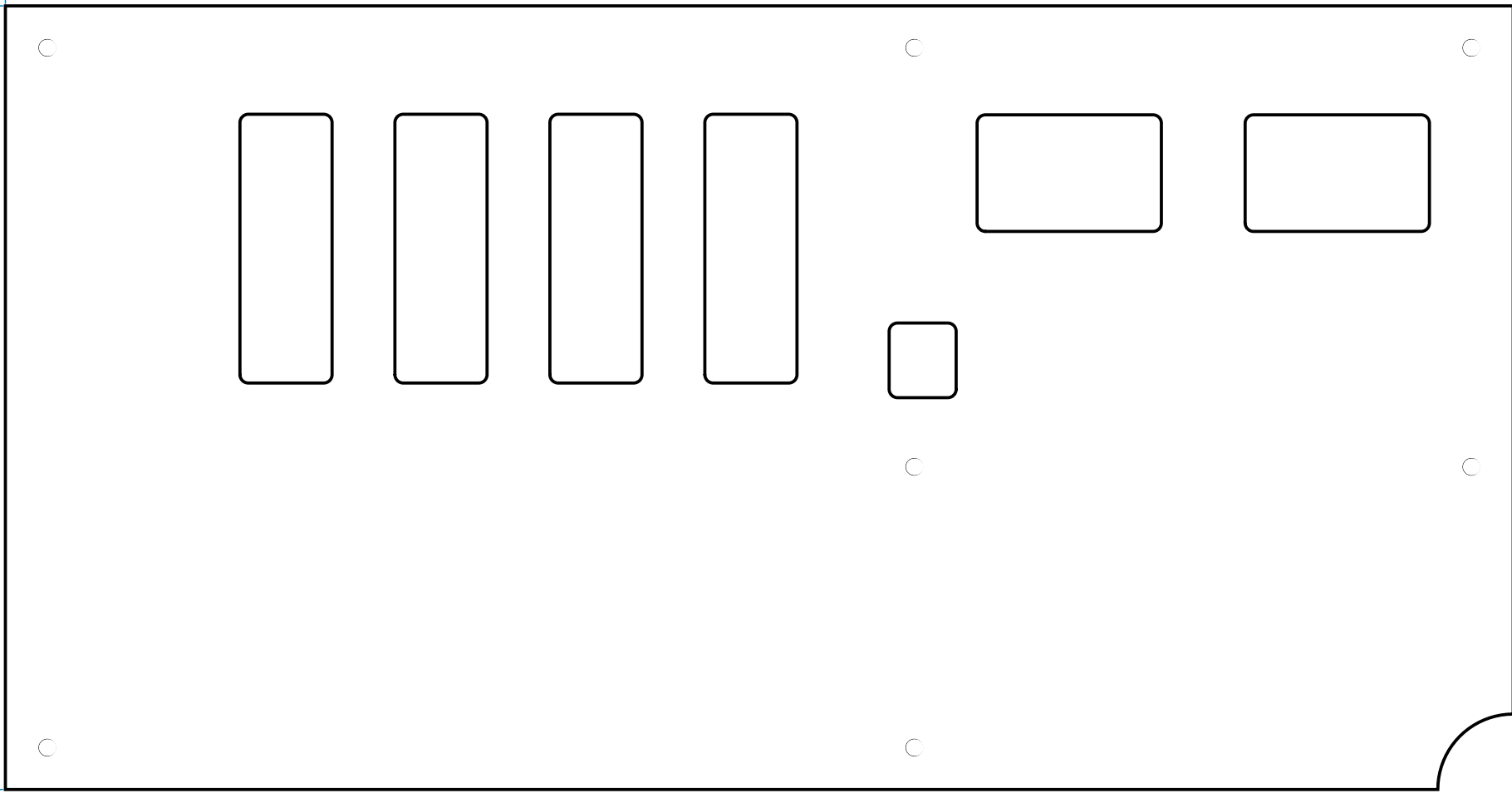
C

D

D

[14173.2mil]
360.0mm

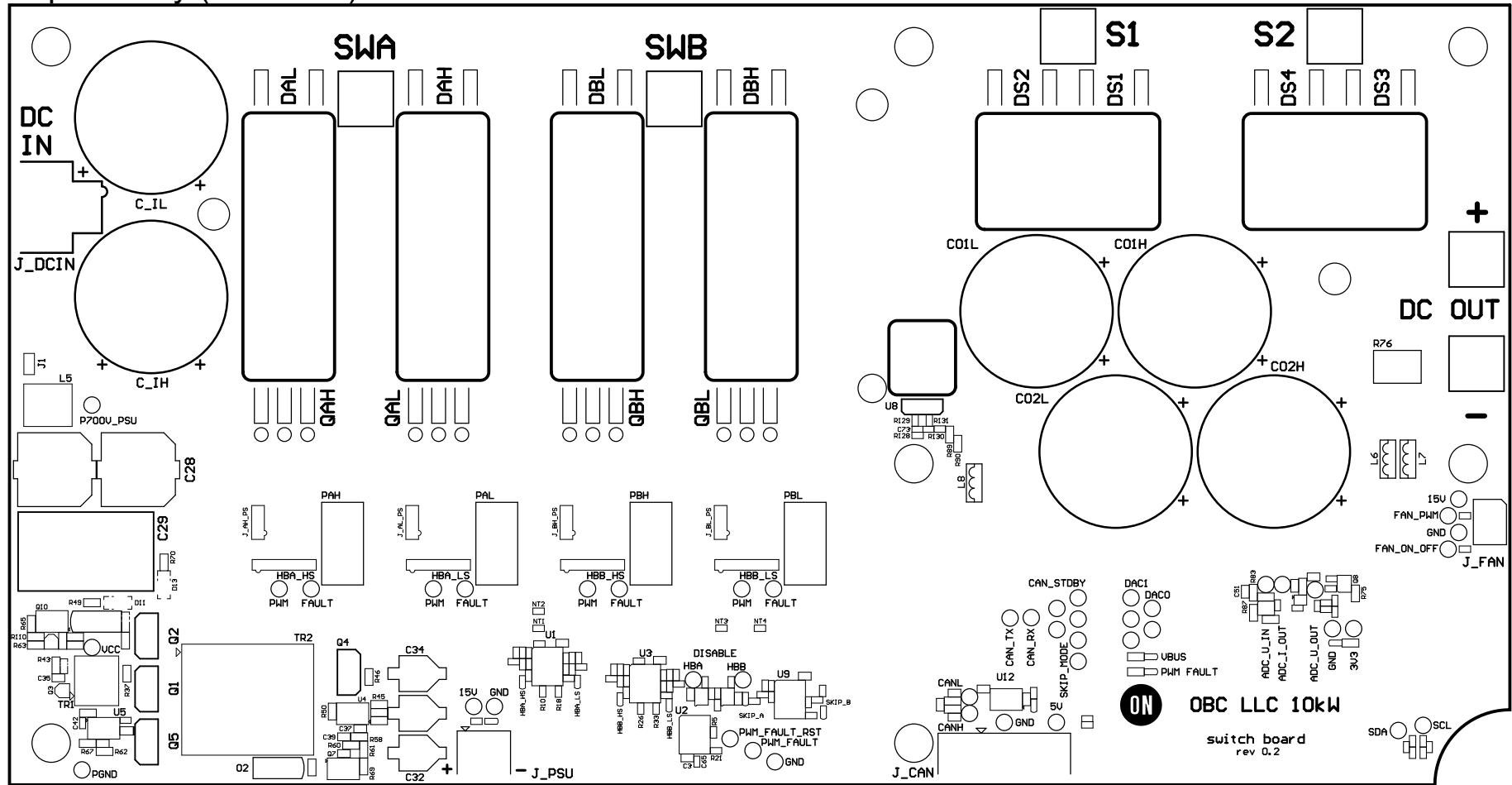
[7362.2mil]
187.0mm



OBC LLC switch board		Revision: 0.2	State: released
<i>Board outline definition - top view 2:3</i>		Fabrication document	Sheet 3 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LL_C_switch_board.PcbDoc		ON Semiconductor Solution Engineering Center Piestany	
Repository revision: 1409			



Top Overlay (Scale 2:3)



OBC LLC switch board		Revision: 0.2	State: released
<i>Top side silkscreen - top view</i>		Fabrication document	Sheet 4 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LLC_switch_board.PcbDoc		ON Semiconductor	
Repository revision: 1409		Solution Engineering Center Piestany	



1

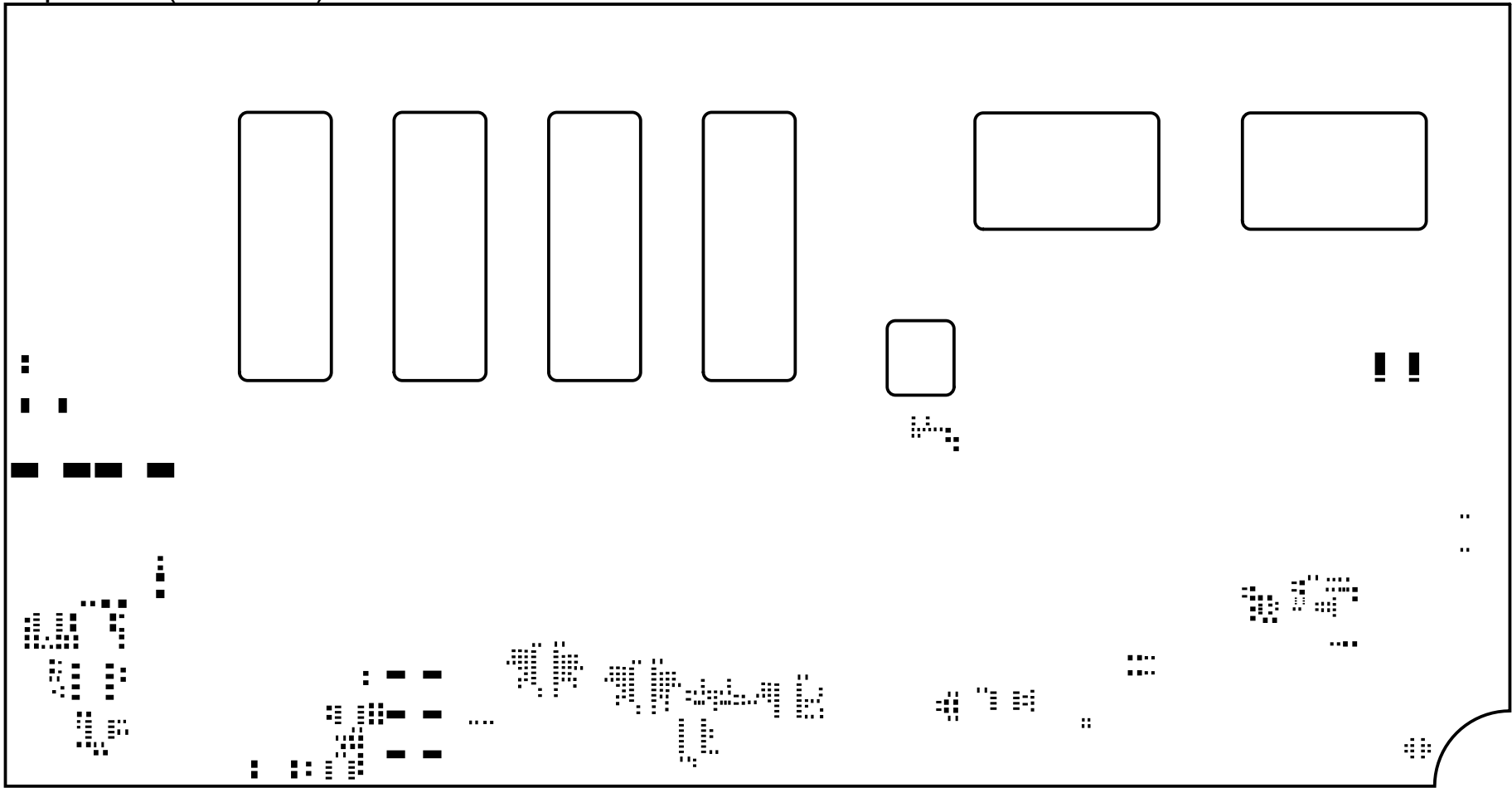
2

3

4

5

Top Paste (Scale 2:3)



A

A

B

B

C

C

D

D

1

2

3

4

5

OBC LLC switch board		Revision: 0.2	State: released
<i>Top side solder paste - top view</i>		Fabrication document	Sheet 5 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LL_C_switch_board.PcbDoc		ON Semiconductor Solution Engineering Center Piestany	
Repository revision: 1409			



1

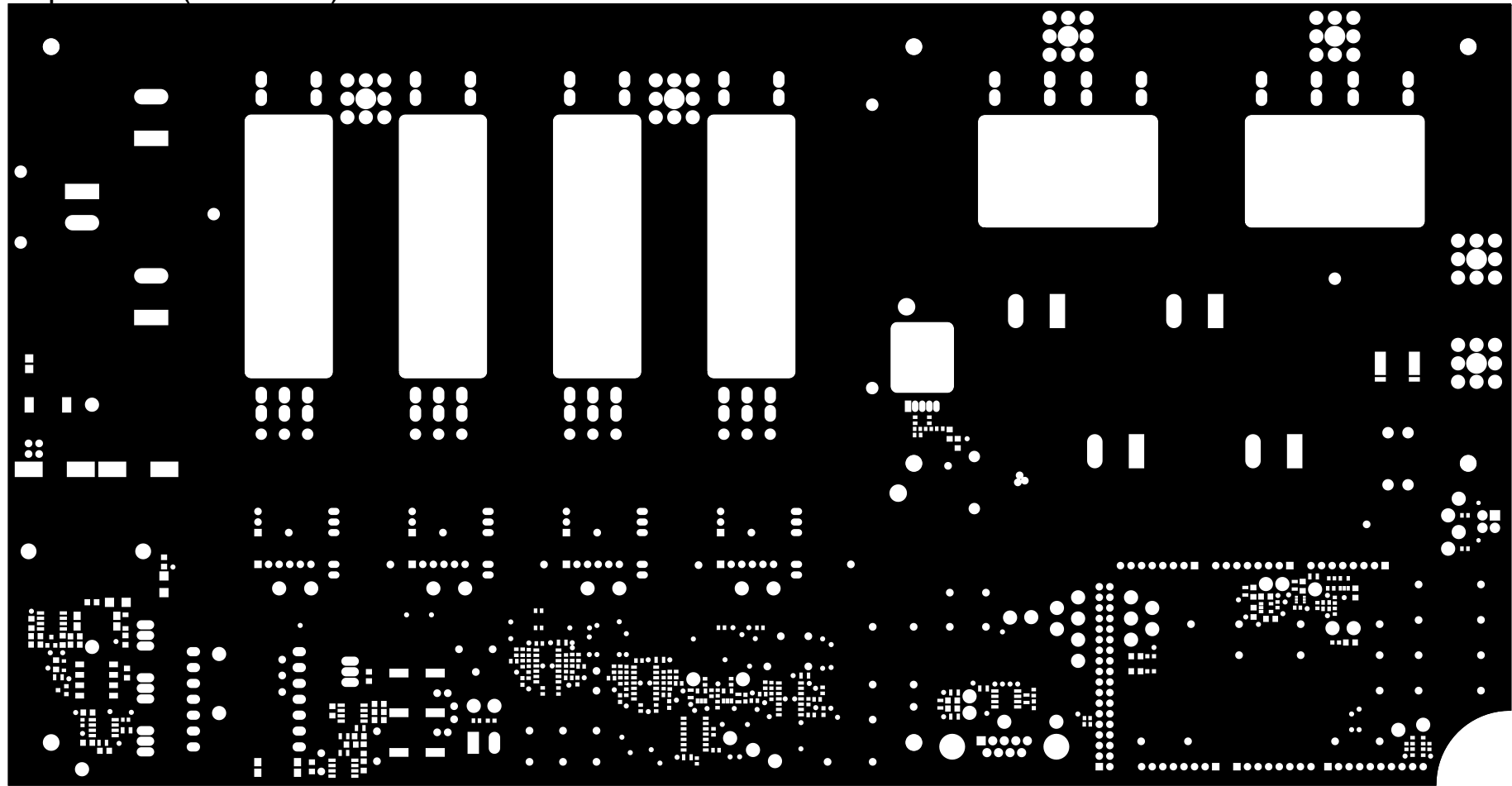
2


3

4

5

Top Solder (Scale 2:3)



OBC LLC switch board		Revision: 0.2	State: released
<i>Top side solder mask - top view</i>		Fabrication document	Sheet 6 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LL_C_switch_board.PcbDoc		ON Semiconductor Solution Engineering Center Piestany 	
Repository revision: 1409			

1

2

3

4

5

1

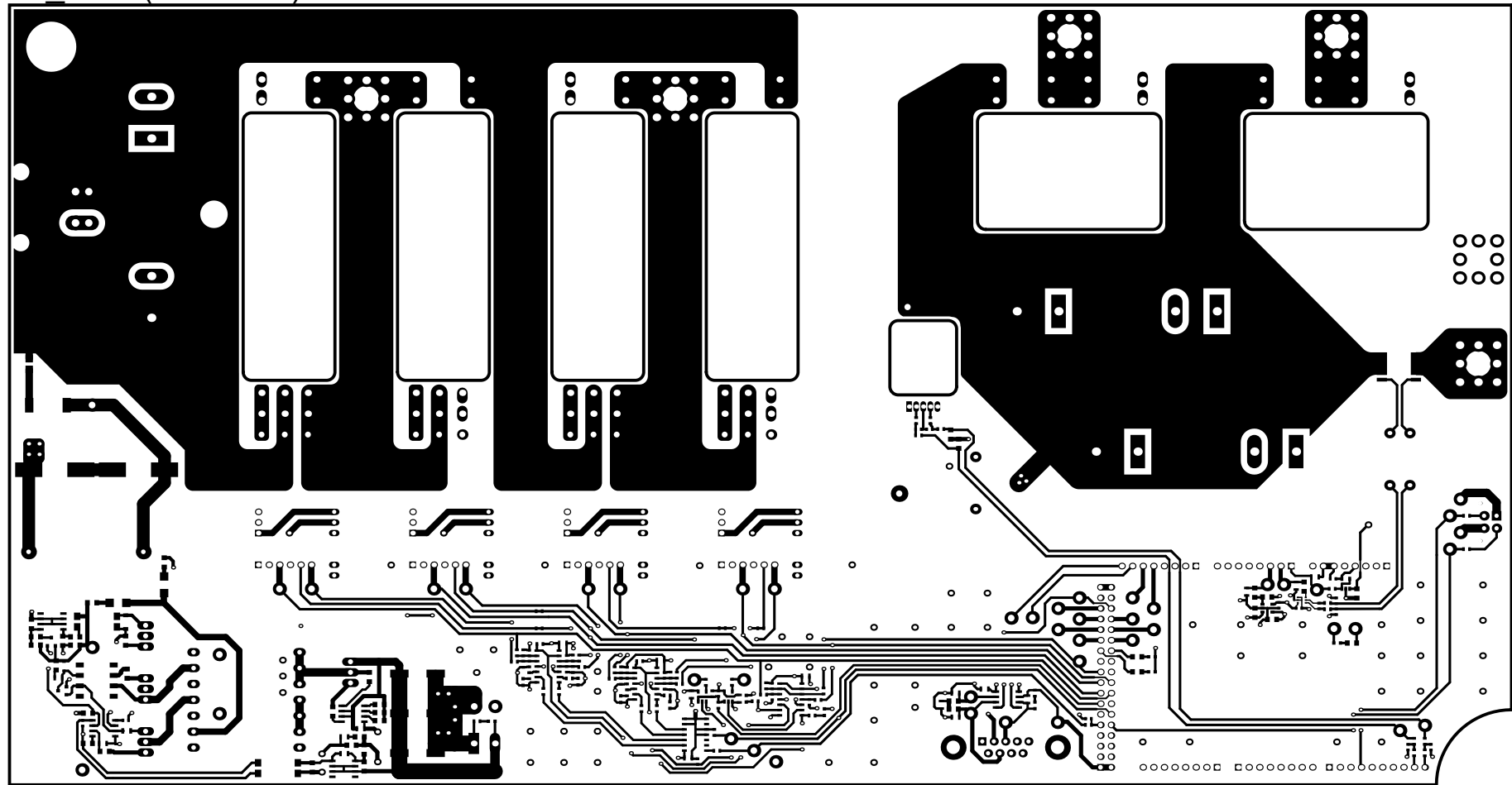
2

3

4

5

L1 TOP (Scale 2:3)

**OBC LLC switch board**Revision:
0.2State:
released*Top Layer - top view*Fabrication
documentSheet
7 / 15

Engineer: Stefan Kosterec

Date: 07.Mar 2019 19:20

PCB File: OBC_LL_C_switch_board.PcbDoc

Repository revision: 1409

ON Semiconductor
Solution Engineering Center
Piestany

1

2

3

4

5

1

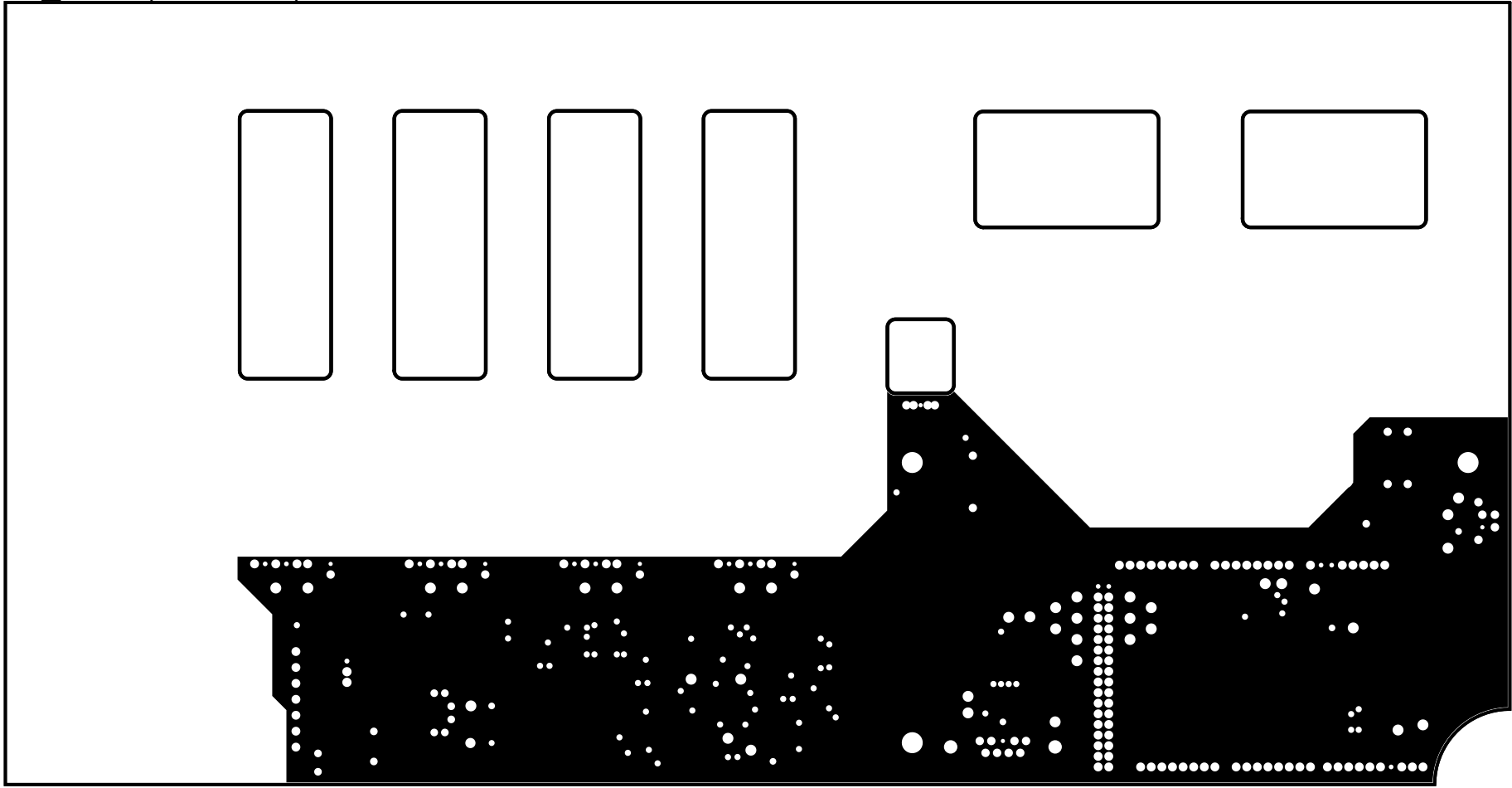
2

3

4

5

L2_GND (Scale 2:3)



OBC LLC switch board		Revision: 0.2	State: released
<i>L2_GND - internal power plane - top view</i>		Fabrication document	Sheet 8 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LL_C_switch_board.PcbDoc		ON Semiconductor Solution Engineering Center Piestany	
Repository revision: 1409			



1

2

3

4

5

1

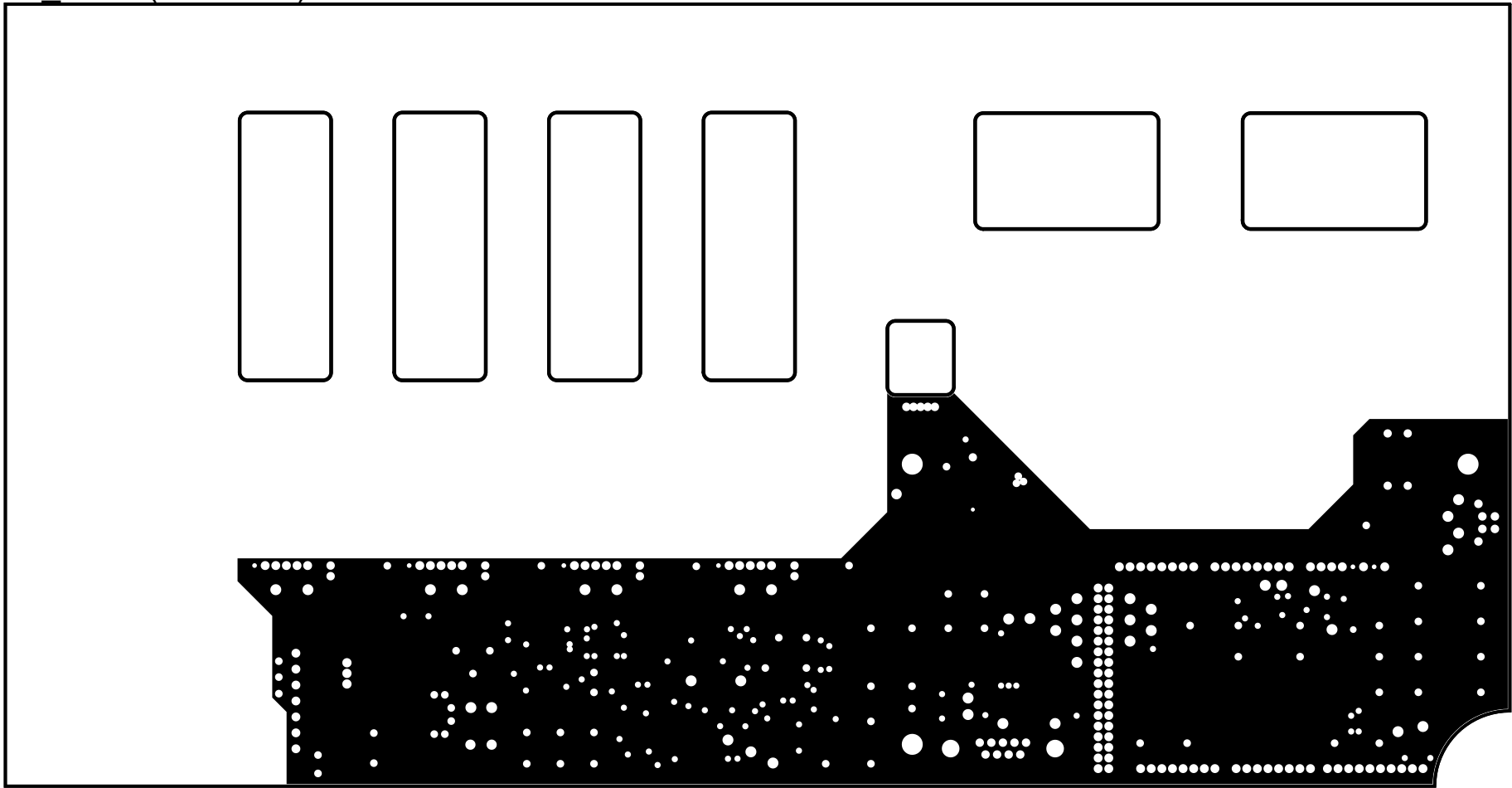
2


3

4

5

L3_PWR (Scale 2:3)



OBC LLC switch board		Revision: 0.2	State: released
<i>L3_PWR - internal power plane - top view</i>		Fabrication document	Sheet 9 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LL_C_switch_board.PcbDoc		ON Semiconductor Solution Engineering Center Piestany 	
Repository revision: 1409			

1

2

3

4

5

1

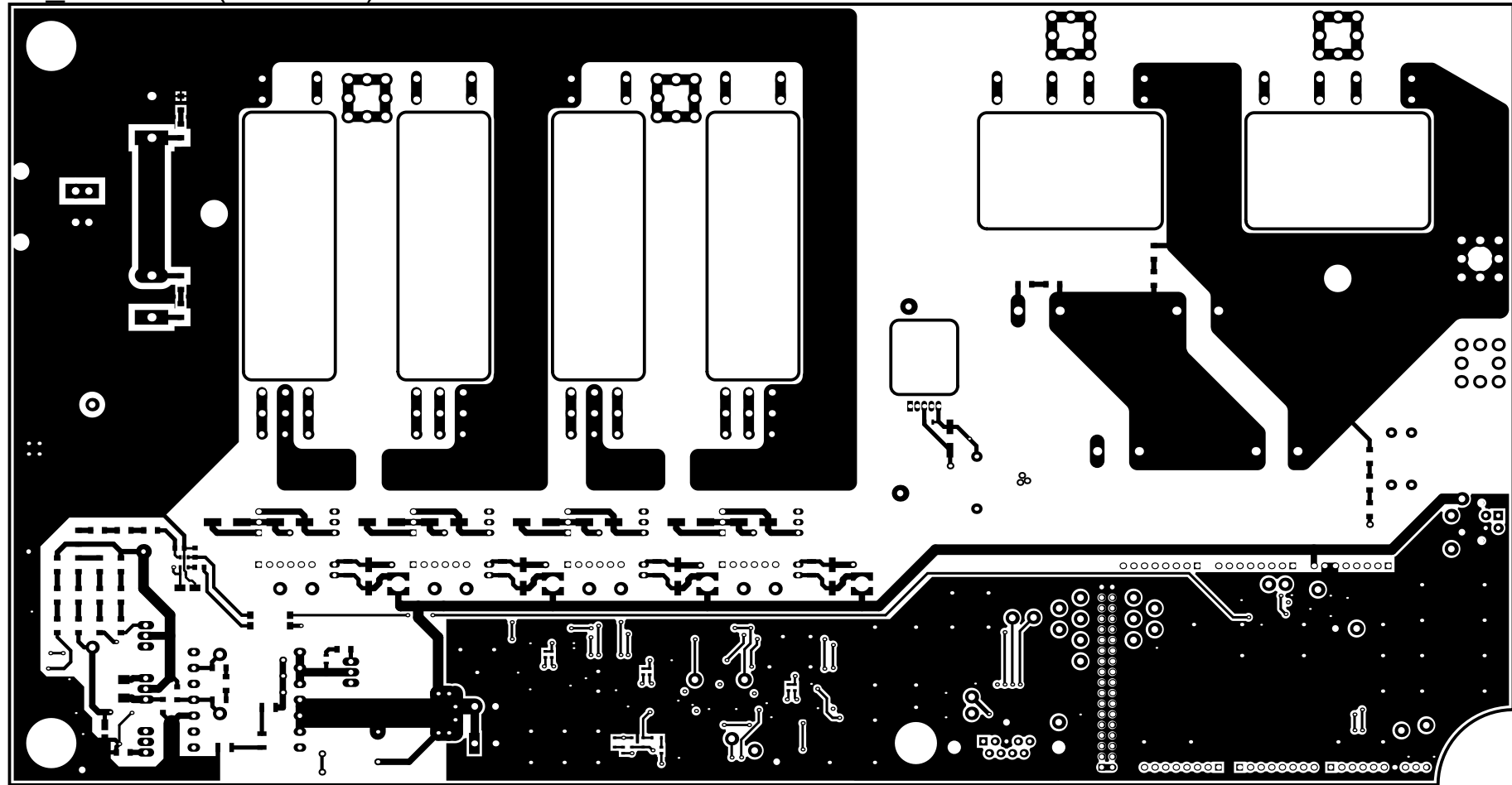
2

3

4

5

L4 BOTTOM (Scale 2:3)

**OBC LLC switch board**Revision:
0.2State:
released*Bottom Layer - top view*Fabrication
documentSheet
10 / 15

Engineer: Stefan Kosterec

Date: 07.Mar 2019 19:20

PCB File: OBC_LL_C_switch_board.PcbDoc

Repository revision: 1409

ON Semiconductor
Solution Engineering Center
Piestany

1

2

3

4

5

1

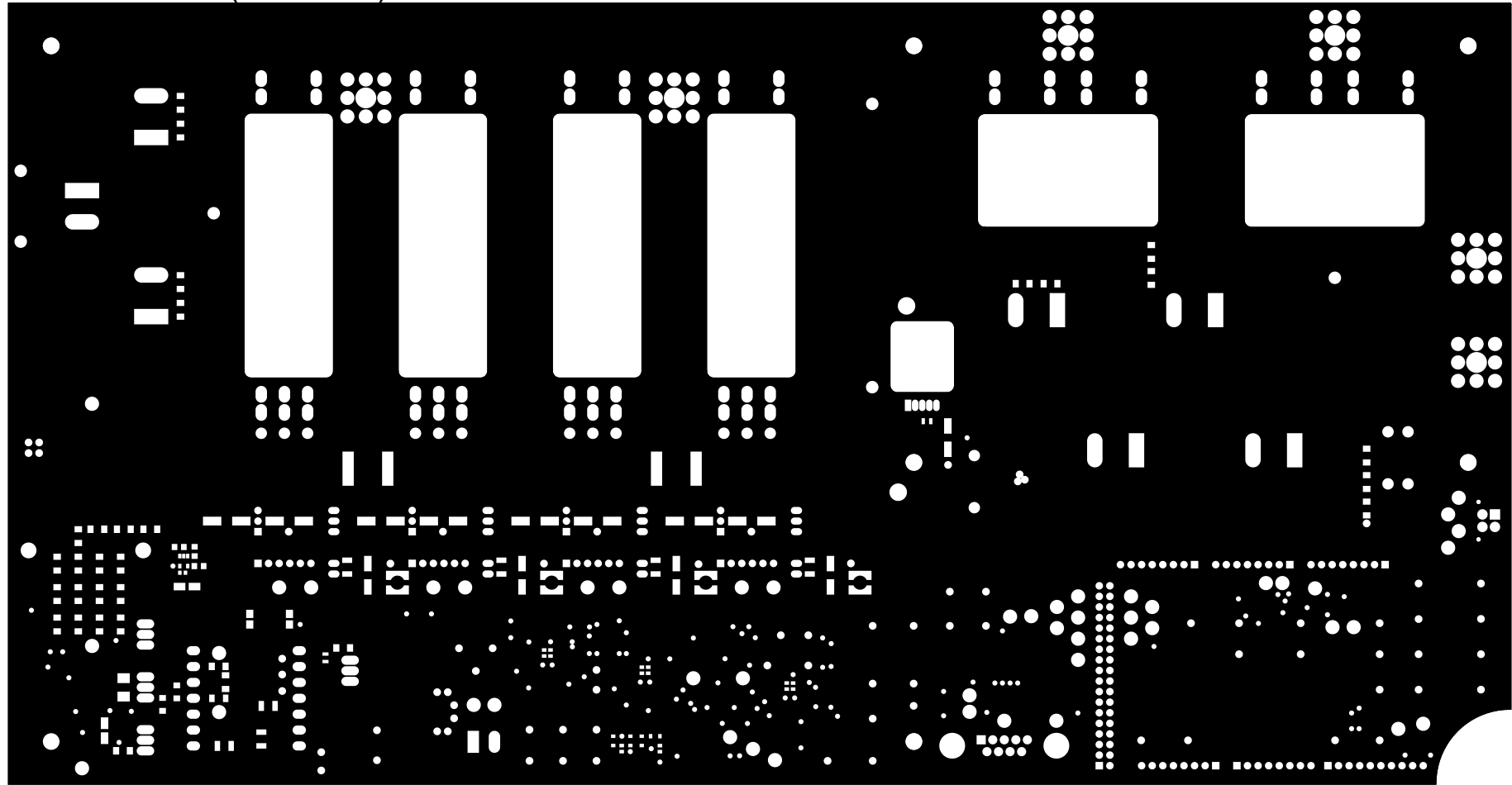
2

3

4

5

Bottom Solder (Scale 2:3)



A

A

B


B

C

C

D

D

OBC LLC switch board		Revision: 0.2	State: released
<i>Bottom side solder mask - top view</i>		Fabrication document	Sheet 11 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LL_C_switch_board.PcbDoc		ON Semiconductor Solution Engineering Center Piestany 	
Repository revision: 1409			

1

2

3

4

5

1

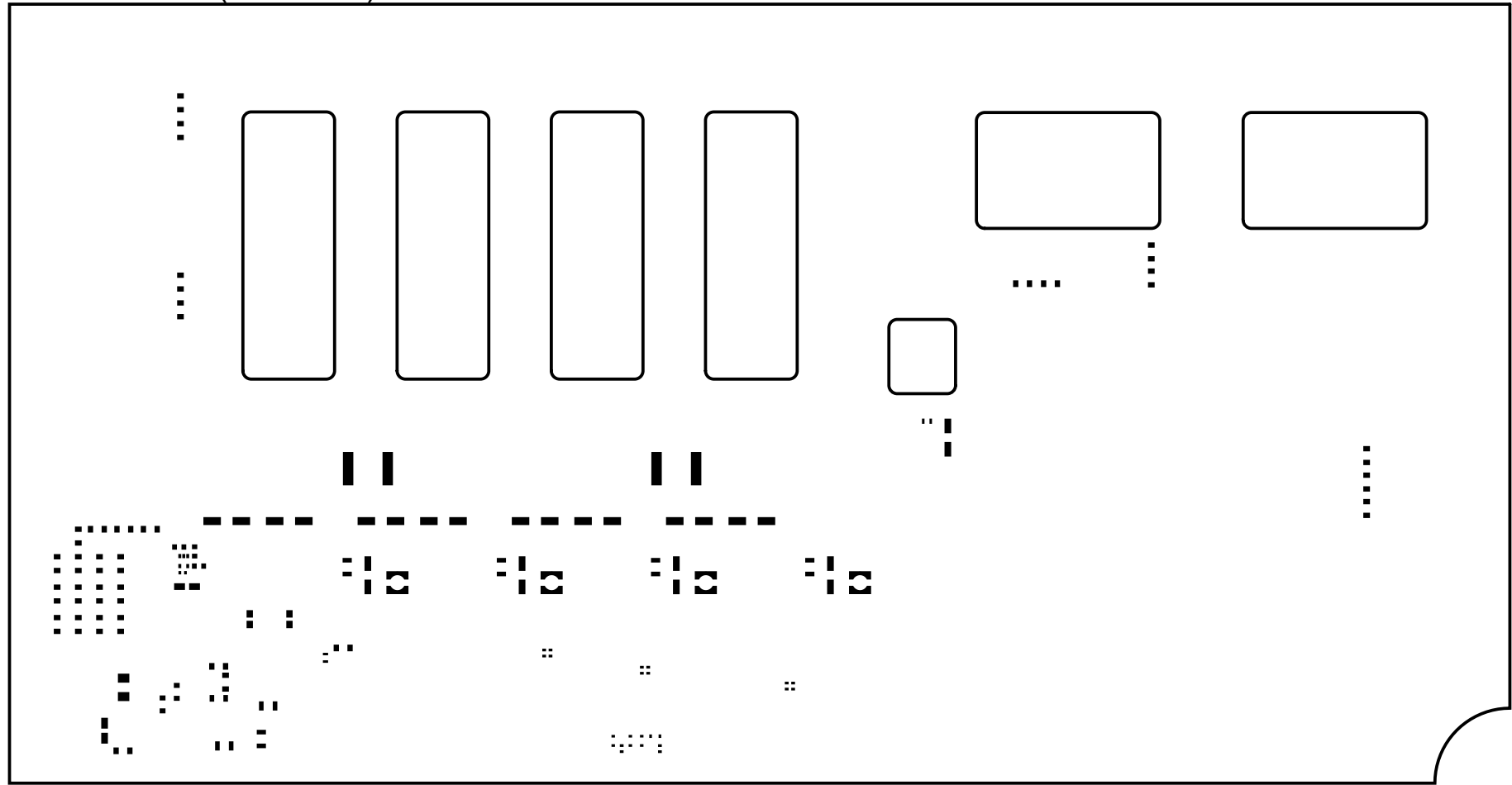
2

3

4

5

Bottom Paste (Scale 2:3)



OBC LLC switch board		Revision: 0.2	State: released
<i>Bottom side solder paste - top view</i>		Fabrication document	Sheet 12 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LL_C_switch_board.PcbDoc		ON Semiconductor Solution Engineering Center Piestany	
Repository revision: 1409			



1

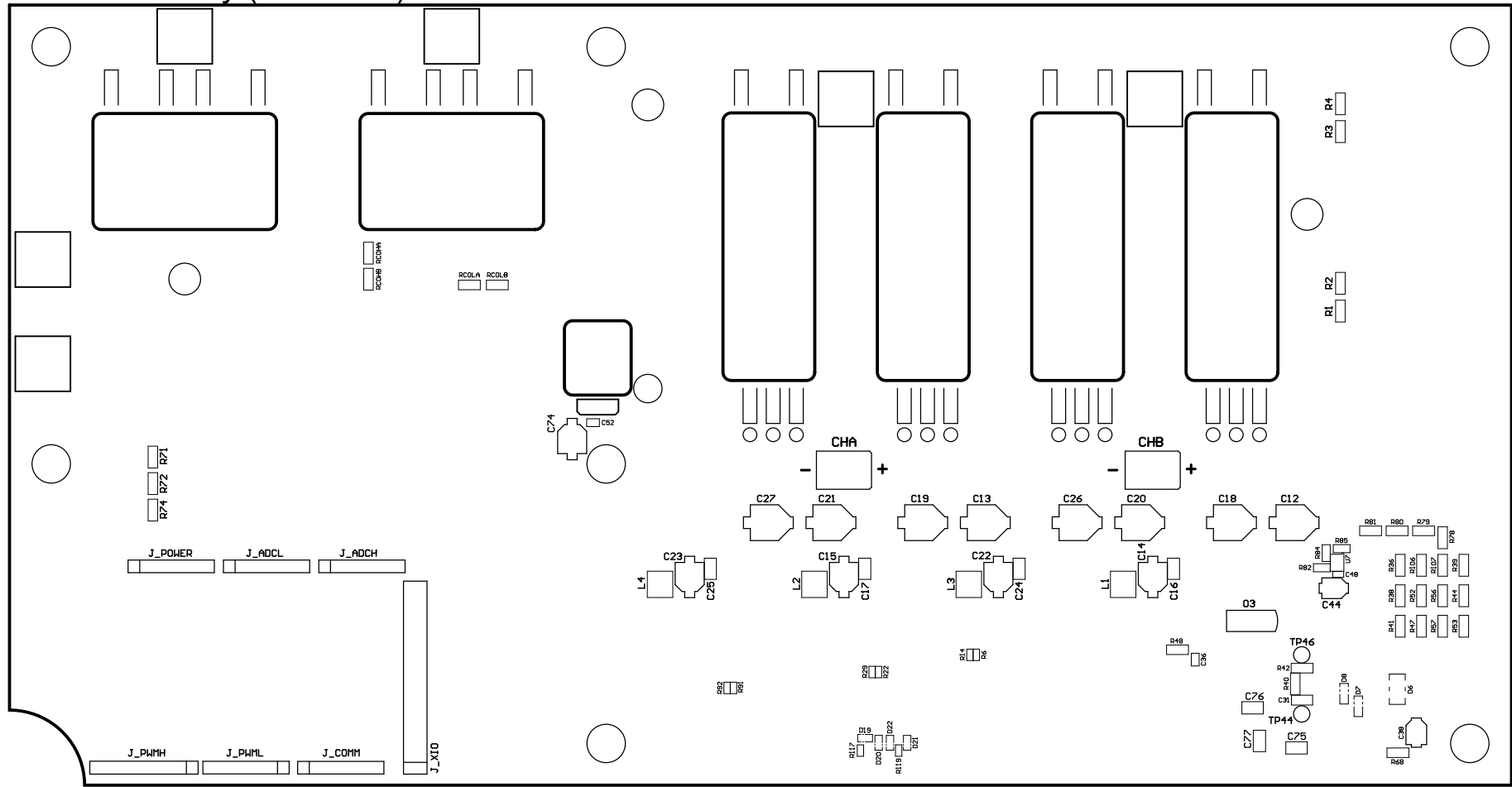
2

3

4

5

Bottom Overlay (Scale 2:3)



OBC LLC switch board		Revision: 0.2	State: released
<i>Bottom side silkscreen - bottom view</i>		Fabrication document	Sheet 13 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LLC_switch_board.PcbDoc		ON Semiconductor Solution Engineering Center Piestany	
Repository revision: 1409			



1

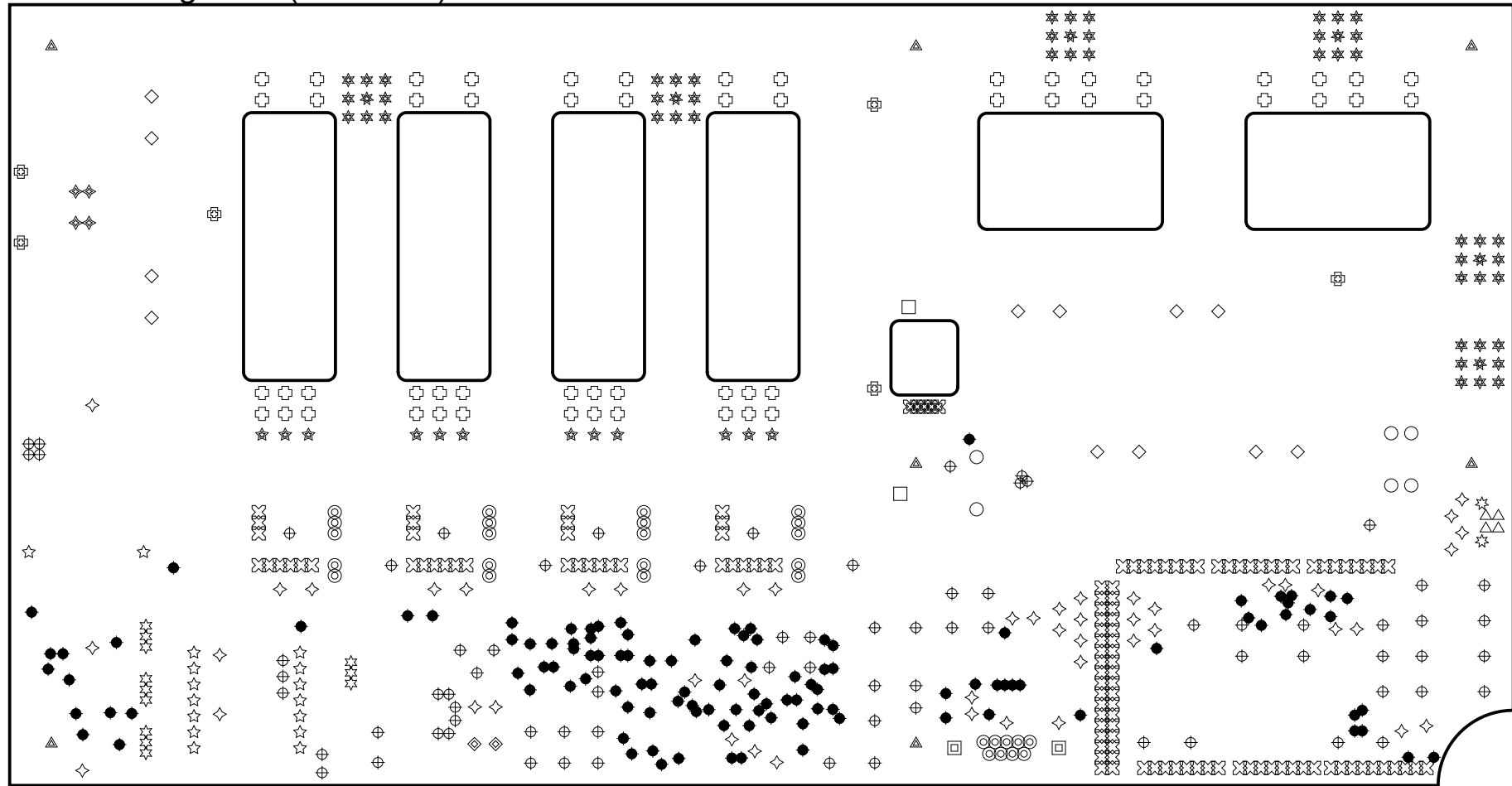
2

3

4

5

Drill Drawing View (Scale 2:3)



Notes:

- ⑨ Related drill table can be found on page 15

OBC LLC switch board		Revision: 0.2	State: released
<i>Drill drawing</i>		Fabrication document	Sheet 14 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LLC_switch_board.PcbDoc		ON Semiconductor Solution Engineering Center Piestany	
Repository revision: 1409			



1

2

3

4

5

Drill Table

Symbol	Count	Hole Size	Plated	Drill Layer Pair	Via / Pad	Template
●	114	0.457mm(18.0mil)	Plated	L1_TOP - L4_BOTTOM	Via	v102h46
⊕	77	0.813mm(32.0mil)	Plated	L1_TOP - L4_BOTTOM	Via	v165h81
○	6	0.965mm(38.0mil)	Plated	L1_TOP - L4_BOTTOM	Pad	c254h97
◎	29	1.000mm(39.4mil)	Plated	L1_TOP - L4_BOTTOM	Pad	(Mixed)
⊗	5	1.016mm(40.0mil)	Plated	L1_TOP - L4_BOTTOM	Pad	(Mixed)
☆	2	1.020mm(40.2mil)	Non-Plated	L1_TOP - L4_BOTTOM	Pad	c80hn102
△	4	1.020mm(40.2mil)	Plated	L1_TOP - L4_BOTTOM	Pad	(Mixed)
☆	16	1.100mm(43.3mil)	Plated	L1_TOP - L4_BOTTOM	Pad	(Mixed)
⊗	122	1.118mm(44.0mil)	Plated	L1_TOP - L4_BOTTOM	Pad	(Mixed)
☆	12	1.200mm(47.2mil)	Plated	L1_TOP - L4_BOTTOM	Pad	r200_400h120r100
☆	12	1.400mm(55.1mil)	Plated	L1_TOP - L4_BOTTOM	Pad	c254h140
◇	2	1.422mm(56.0mil)	Plated	L1_TOP - L4_BOTTOM	Pad	(Mixed)
□	2	1.500mm(59.1mil)	Plated	L1_TOP - L4_BOTTOM	Pad	c400h150
⊕	56	1.524mm(60.0mil)	Plated	L1_TOP - L4_BOTTOM	Pad	(Mixed)
◇	48	1.600mm(63.0mil)	Plated	L1_TOP - L4_BOTTOM	Pad	c320h160
◇	4	1.780mm(70.1mil)	Plated	L1_TOP - L4_BOTTOM	(Mixed)	(Mixed)
☆	48	1.850mm(72.8mil)	Plated	L1_TOP - L4_BOTTOM	Pad	c320h185
◇	12	2.000mm(78.7mil)	Plated	L1_TOP - L4_BOTTOM	Pad	(Mixed)
⊕	6	3.000mm(118.1mil)	Non-Plated	L1_TOP - L4_BOTTOM	Pad	(Mixed)
⊕	2	3.200mm(126.0mil)	Plated	L1_TOP - L4_BOTTOM	Pad	c600h320
△	7	4.000mm(157.5mil)	Non-Plated	L1_TOP - L4_BOTTOM	Pad	c300hn400
☆	6	5.000mm(196.9mil)	Non-Plated	L1_TOP - L4_BOTTOM	Pad	c254hn500
592 Total						

Notes:

⑩ Related drill drawing can be found on page 14

OBC LLC switch board		Revision: 0.2	State: released
<i>Drill table</i>		Fabrication document	Sheet 15 / 15
Engineer: Stefan Kosterec	Date: 07.Mar 2019 19:20		
PCB File: OBC_LL_C_switch_board.PcbDoc		ON Semiconductor	
Repository revision: 1409		Solution Engineering Center Piestany	

