

PCB Manufacturing Notes

General Info

Board dimensions – 100mm x 60mm
Number of layers – 4
Smallest hole – 0.3mm
Number of holes – Approx 340
Minimum track & gap – 0.15mm
RoHS/Lead free – Yes
Material – FR4 (for lead free soldering)

Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
Layer 01 (Top)	0.5oz 1.0oz 1.0oz
Layer 04 (Bottom)	0.5oz

Finished board thickness to be 1.6mm 0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

Copper Thieving/Balancing

The supplier may add copper thieving/balancing if required.

Finish

A.) Conductive finish

Plating to be immersion silver or electroless nickel immersion gold (ENIG).

B.) Soldermask

Liquid photo imageable soldermask (green). Pads have not been oversized.
Supplier should oversize soldermask on pads to suit process.

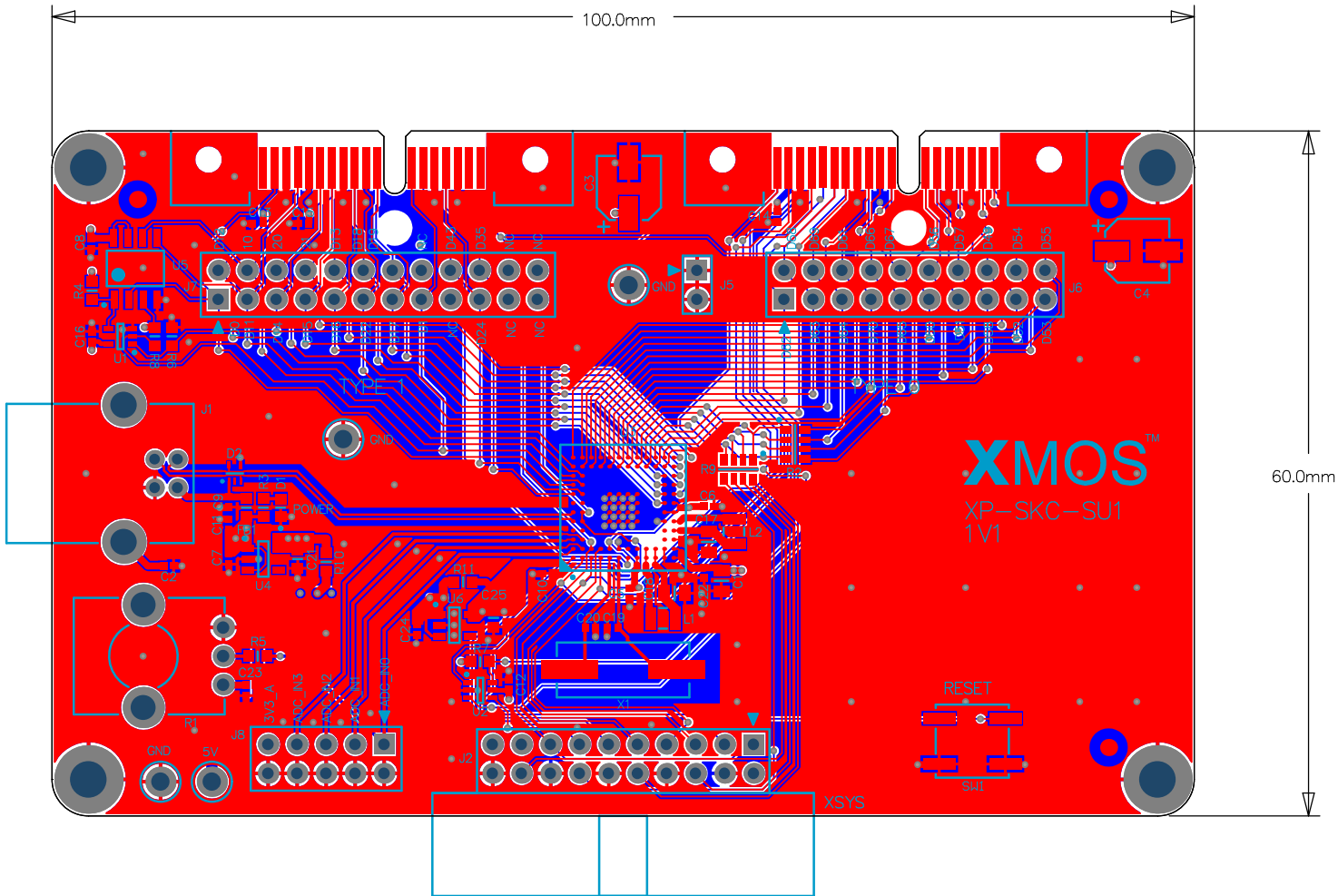
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

Drill data is in Excellon format, metric (000.000), no zero suppression, absolute coordinates.

Hole size is finished size.



XMOS LTD = XPCB-059 = 1V1 = 17 OCT 2012
LAYER – FABRICATION INSTRUCTIONS
PCB COPPER LAYER 1 (TOP) SILKSCREEN TOP
PCB COPPER LAYER 4 (BOTTOM)

X MOS®

Project Name
XPCB-059 (XP-SKC-SU1)

Sheet	Date	Revision
A4	17 OCTOBER 2012	1V1

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Material – FR4 (for lead free soldering)

Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
Layer 01 (Top)	0.5oz
	1.0oz
	1.0oz
	0.5oz

Finished board thickness to be 1.6mm 0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

Copper Thieving/Balancing

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Finish

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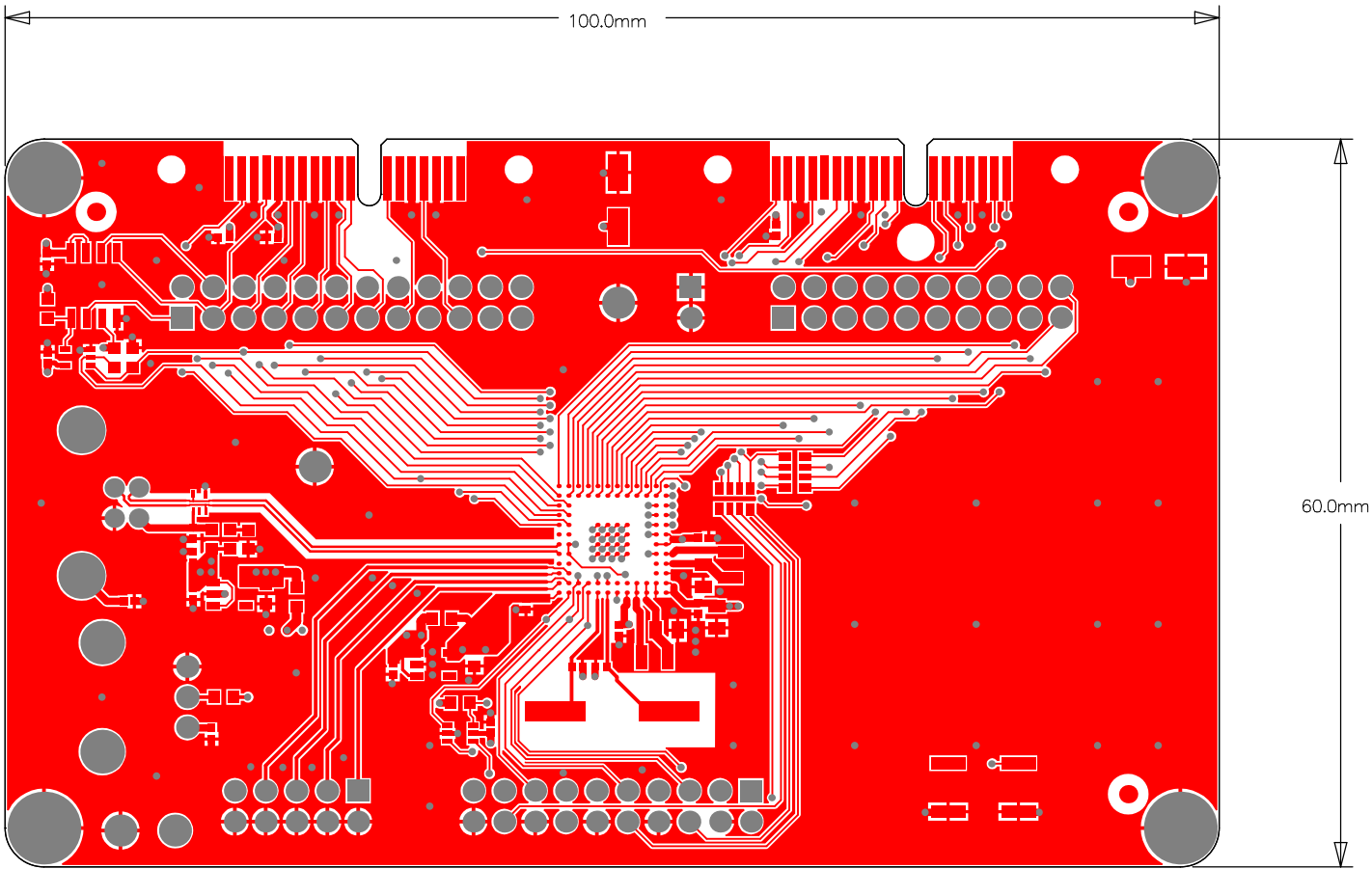
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

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FABRICATION INSTRUCTIONS
PCB COPPER LAYER 1 (TOP)



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Number of layers – 4
Smallest hole – 0.3mm
Number of holes – Approx 340
Minimum track & gap – 0.15mm
RoHS/Lead free – Yes
Material – FR4 (for lead free soldering)

Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
	0.5oz
Layer 02 (Gnd)	1.0oz
	1.0oz
	0.5oz

Finished board thickness to be 1.6mm 0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

Copper Thieving/Balancing

The supplier may add copper thieving/balancing if required.

Finish

A.) Conductive finish

Plating to be immersion silver or electroless nickel immersion gold (ENIG).

B.) Soldermask

Liquid photo imageable soldermask (green). Pads have not been oversized.
Supplier should oversize soldermask on pads to suit process.

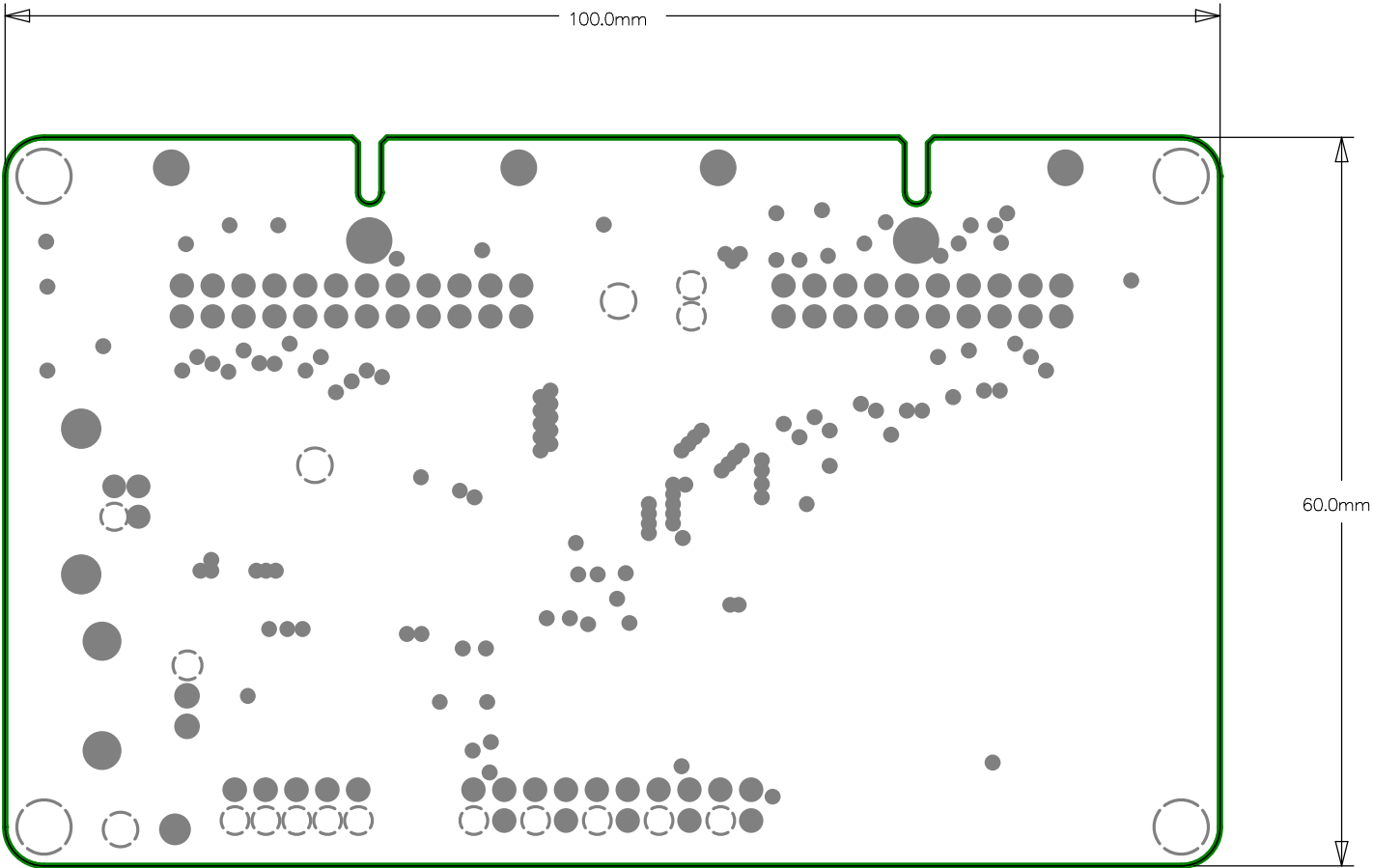
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

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Hole size is finished size.



FABRICATION INSTRUCTIONS

PCB COPPER LAYER 2 (INNER 1)



Project Name
XPCB-059 (XP-SKC-SU1)

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A4	17 OCTOBER 2012	1V1

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PCB Manufacturing Notes

General Info

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Number of layers – 4
Smallest hole – 0.3mm
Number of holes – Approx 340
Minimum track & gap – 0.15mm
RoHS/Lead free – Yes
Material – FR4 (for lead free soldering)

Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
	0.5oz
	1.0oz
Layer 03 (Power)	1.0oz
	0.5oz

Finished board thickness to be 1.6mm 0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

Copper Thieving/Balancing

The supplier may add copper thieving/balancing if required.

Finish

A.) Conductive finish

Plating to be immersion silver or electroless nickel immersion gold (ENIG).

B.) Soldermask

Liquid photo imageable soldermask (green). Pads have not been oversized.
Supplier should oversize soldermask on pads to suit process.

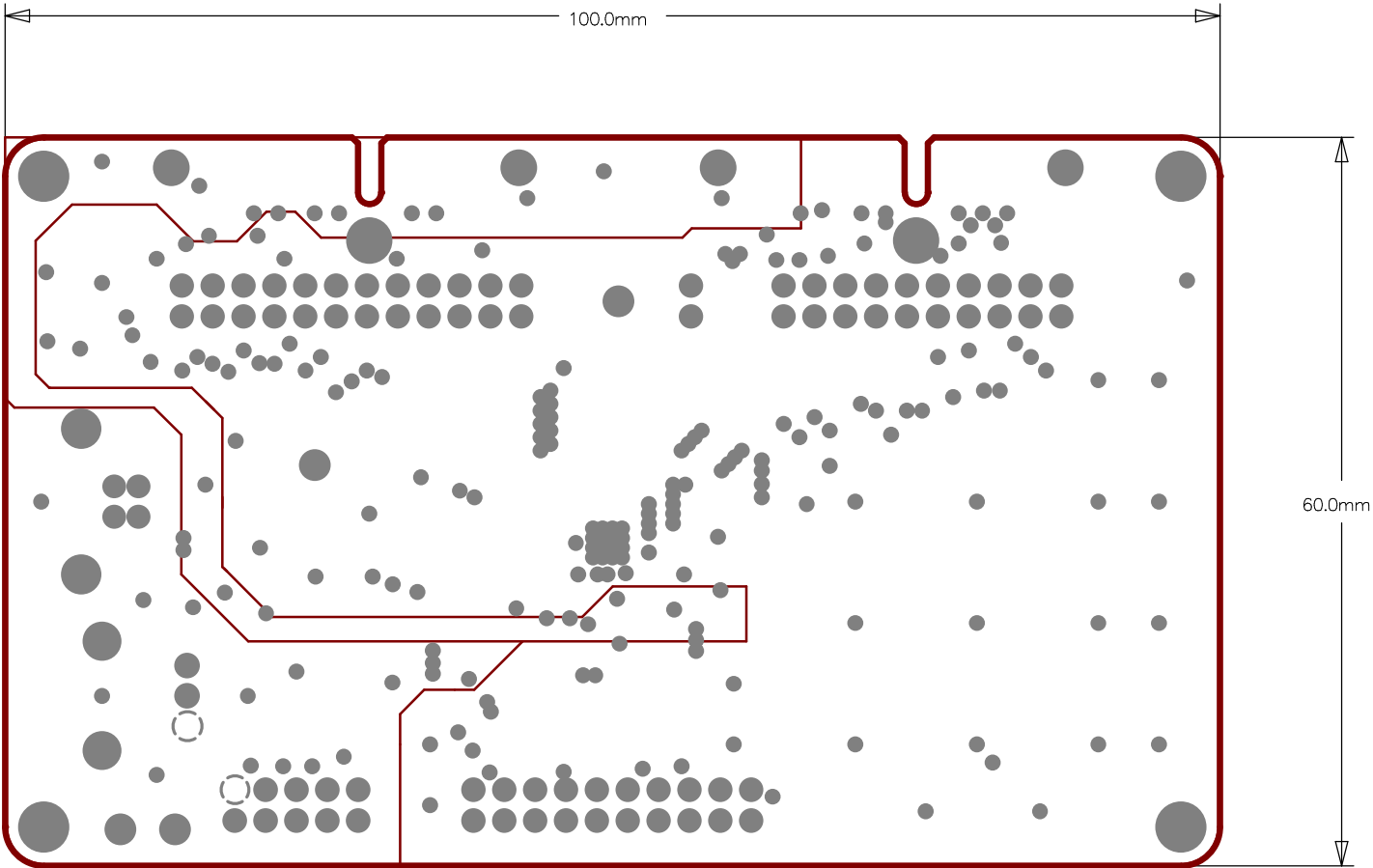
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

Drill data is in Excellon format, metric (000.000), no zero suppression, absolute coordinates.

Hole size is finished size.



FABRICATION INSTRUCTIONS

PCB COPPER LAYER 3 (INNER 2)



Project Name
XPCB-059 (XP-SKC-SU1)

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PCB Manufacturing Notes

General Info

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Number of layers – 4
Smallest hole – 0.3mm
Number of holes – Approx 340
Minimum track & gap – 0.15mm
RoHS/Lead free – Yes
Material – FR4 (for lead free soldering)

Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
	0.5oz
	1.0oz
	1.0oz
Layer 04 (Bottom)	0.5oz

Finished board thickness to be 1.6mm 0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

Copper Thieving/Balancing

The supplier may add copper thieving/balancing if required.

Finish

A.) Conductive finish

Plating to be immersion silver or electroless nickel immersion gold (ENIG).

B.) Soldermask

Liquid photo imageable soldermask (green). Pads have not been oversized.
Supplier should oversize soldermask on pads to suit process.

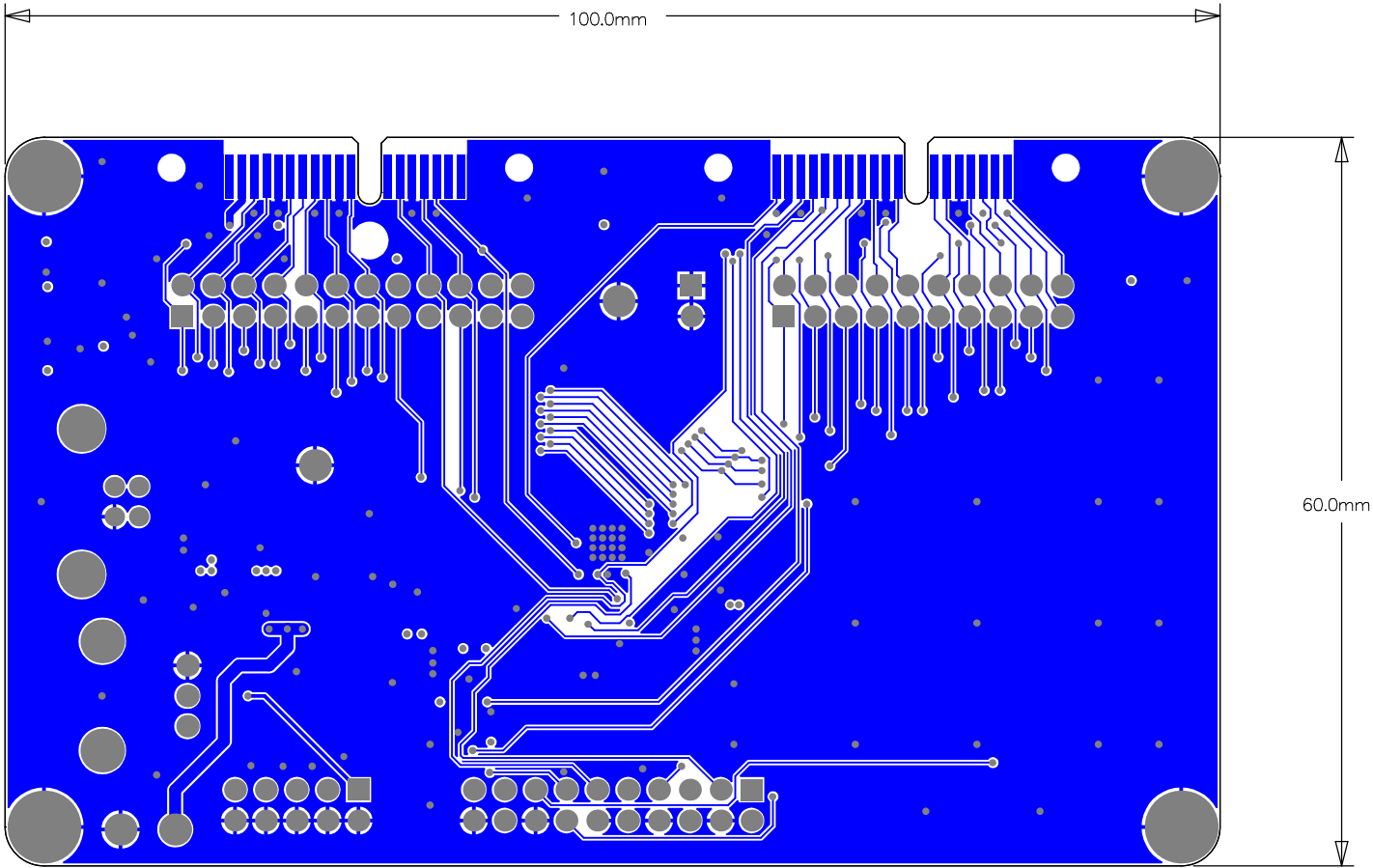
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

Drill data is in Excellon format, metric (000.000), no zero suppression, absolute coordinates.

Hole size is finished size.



FABRICATION INSTRUCTIONS

PCB COPPER LAYER 4 (BOTTOM)



Project Name
XPCB-059 (XP-SKC-SU1)

Sheet	Date	Revision
A4	17 OCTOBER 2012	1V1

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PCB Manufacturing Notes

General Info

Board dimensions – 100mm x 60mm
Number of layers – 4
Smallest hole – 0.3mm
Number of holes – Approx 340
Minimum track & gap – 0.15mm
RoHS/Lead free – Yes
Material – FR4 (for lead free soldering)

Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
	0.5oz
	1.0oz
	1.0oz
	0.5oz

Finished board thickness to be 1.6mm 0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

Copper Thieving/Balancing

The supplier may add copper thieving/balancing if required.

Finish

A.) Conductive finish

Plating to be immersion silver or electroless nickel immersion gold (ENIG).

B.) Soldermask

Liquid photo imageable soldermask (green). Pads have not been oversized.
Supplier should oversize soldermask on pads to suit process.

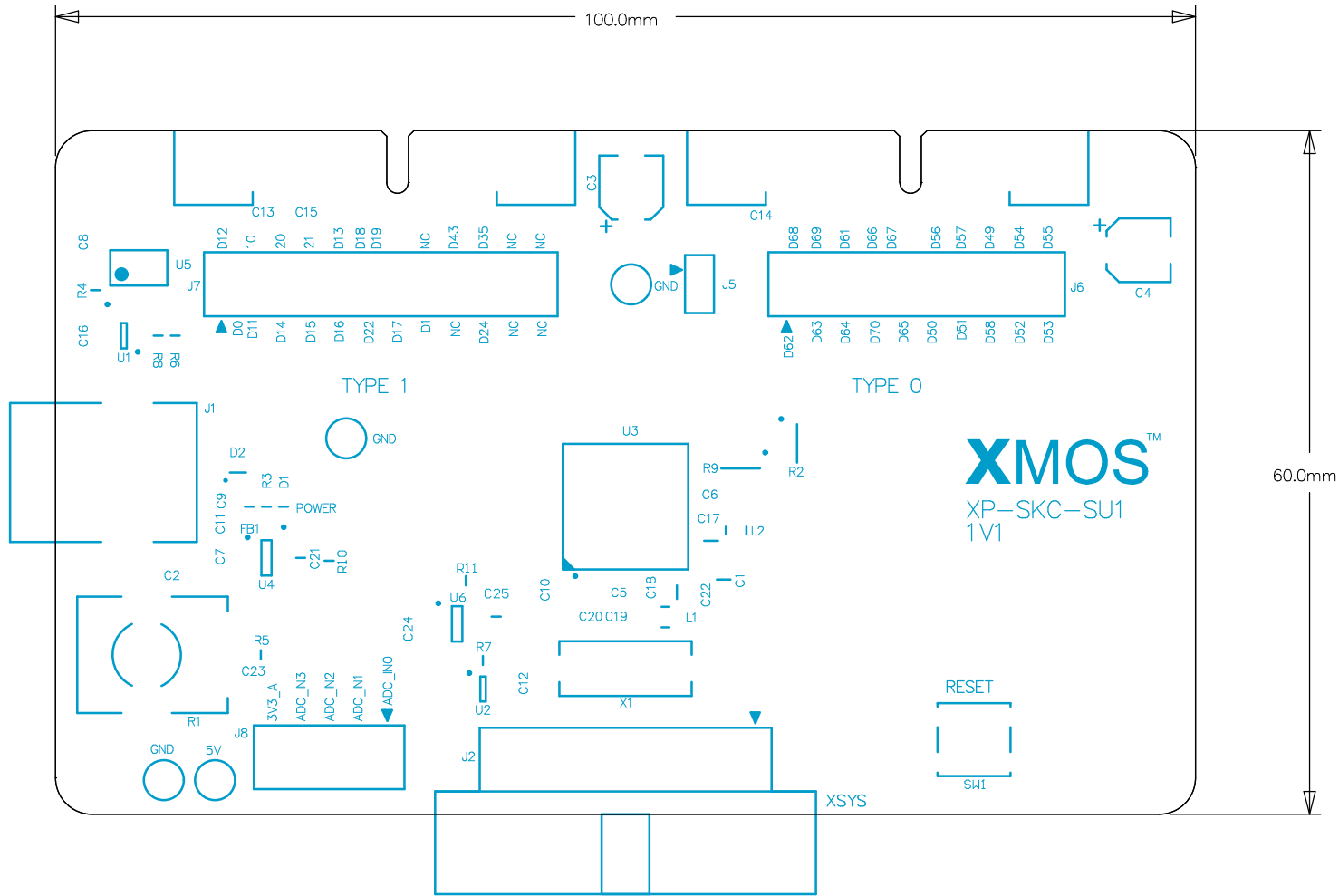
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

Drill data is in Excellon format, metric (000.000), no zero suppression, absolute coordinates.

Hole size is finished size.



FABRICATION INSTRUCTIONS

SILKSCREEN TOP



Project Name
XPCB-059 (XP-SKC-SU1)

Sheet	Date	Revision
A4	17 OCTOBER 2012	1V1

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PCB Manufacturing Notes

General Info

Board dimensions – 100mm x 60mm
Number of layers – 4
Smallest hole – 0.3mm
Number of holes – Approx 340
Minimum track & gap – 0.15mm
RoHS/Lead free – Yes
Material – FR4 (for lead free soldering)

Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
	0.5oz
	1.0oz
	1.0oz
	0.5oz

Finished board thickness to be 1.6mm ±0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

Copper Thieving/Balancing

The supplier may add copper thieving/balancing if required.

Finish

A.) Conductive finish

Plating to be immersion silver or electroless nickel immersion gold (ENIG).

B.) Soldermask

Liquid photo imageable soldermask (green). Pads have not been oversized.
Supplier should oversize soldermask on pads to suit process.

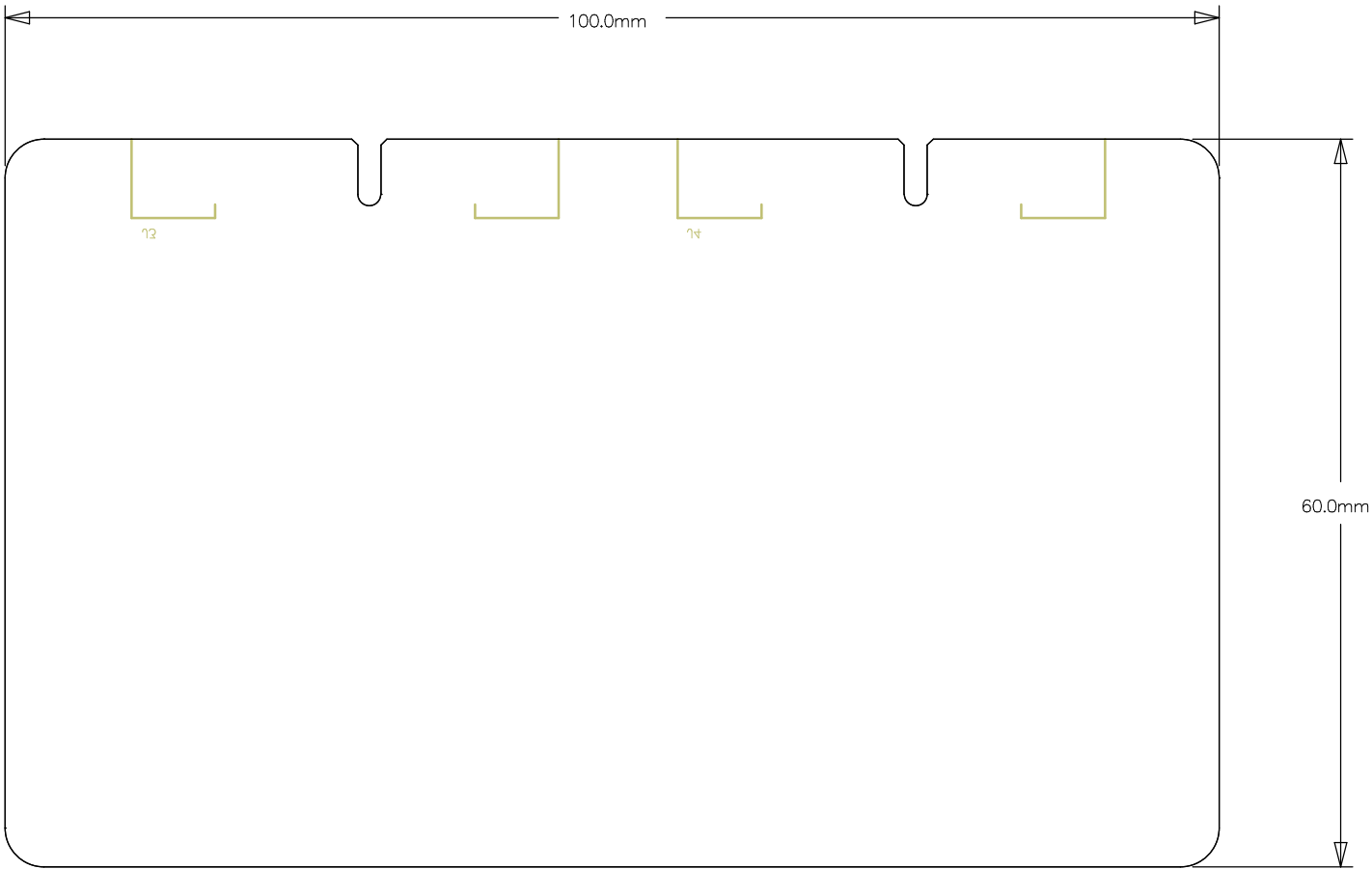
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

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Hole size is finished size.



FABRICATION INSTRUCTIONS

SILKSCREEN BOTTOM



Project Name
XPCB-059 (XP-SKC-SU1)

Sheet	Date	Revision
A4	17 OCTOBER 2012	1V1

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PCB Manufacturing Notes

General Info

Board dimensions – 100mm x 60mm
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Smallest hole – 0.3mm
Number of holes – Approx 340
Minimum track & gap – 0.15mm
RoHS/Lead free – Yes
Material – FR4 (for lead free soldering)

Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
	0.5oz
	1.0oz
	1.0oz
	0.5oz

Finished board thickness to be 1.6mm ±0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

Copper Thieving/Balancing

The supplier may add copper thieving/balancing if required.

Finish

A.) Conductive finish

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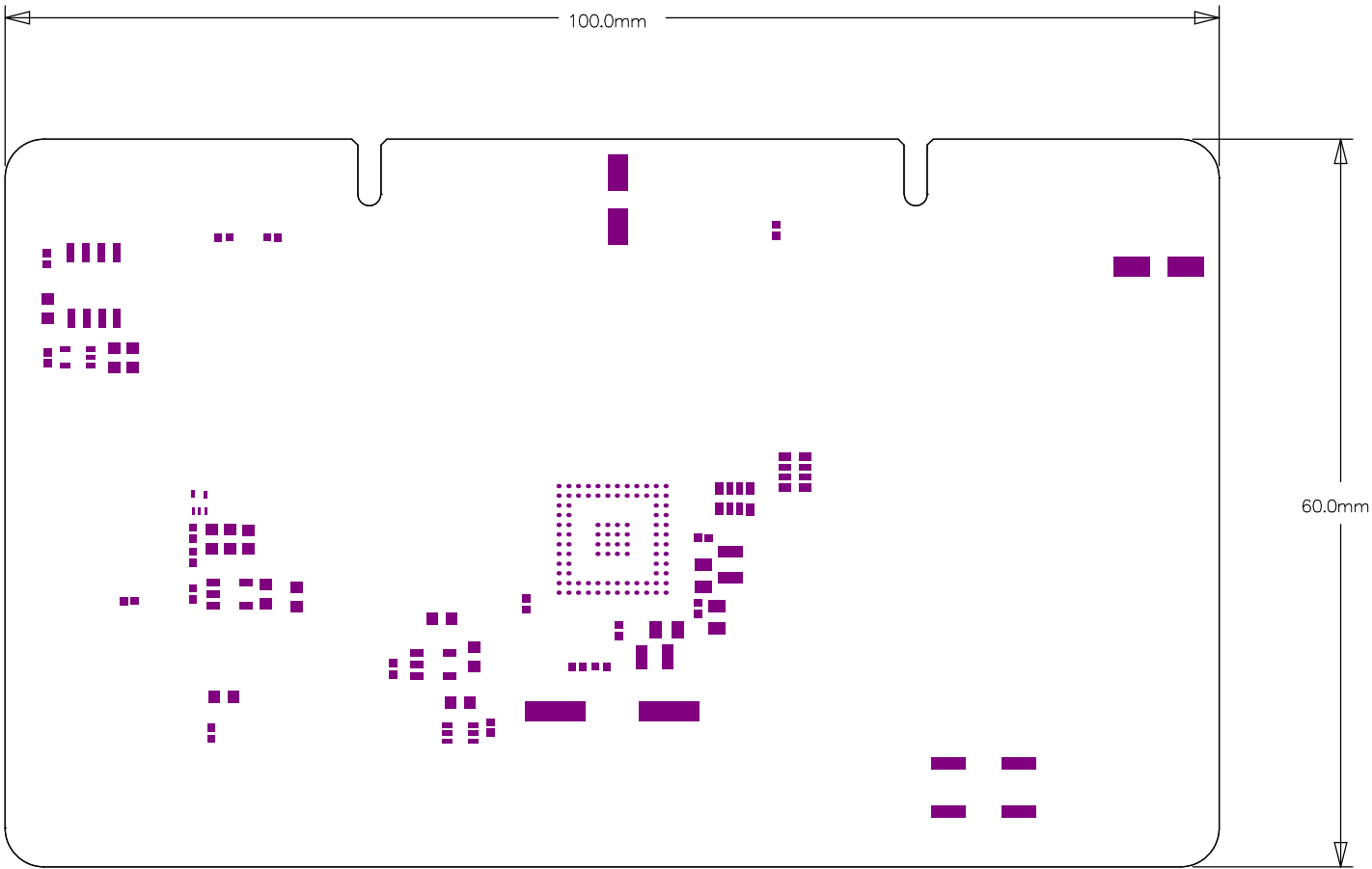
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

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FABRICATION INSTRUCTIONS

PASTE MASK TOP

XMOS®

Project Name
XPCB-059 (XP-SKC-SU1)

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A4	17 OCTOBER 2012	1V1

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Minimum track & gap – 0.15mm
RoHS/Lead free – Yes
Material – FR4 (for lead free soldering)

Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
	0.5oz
	1.0oz
	1.0oz
	0.5oz

Finished board thickness to be 1.6mm 0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

Copper Thieving/Balancing

The supplier may add copper thieving/balancing if required.

Finish

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Liquid photo imageable soldermask (green). Pads have not been oversized.
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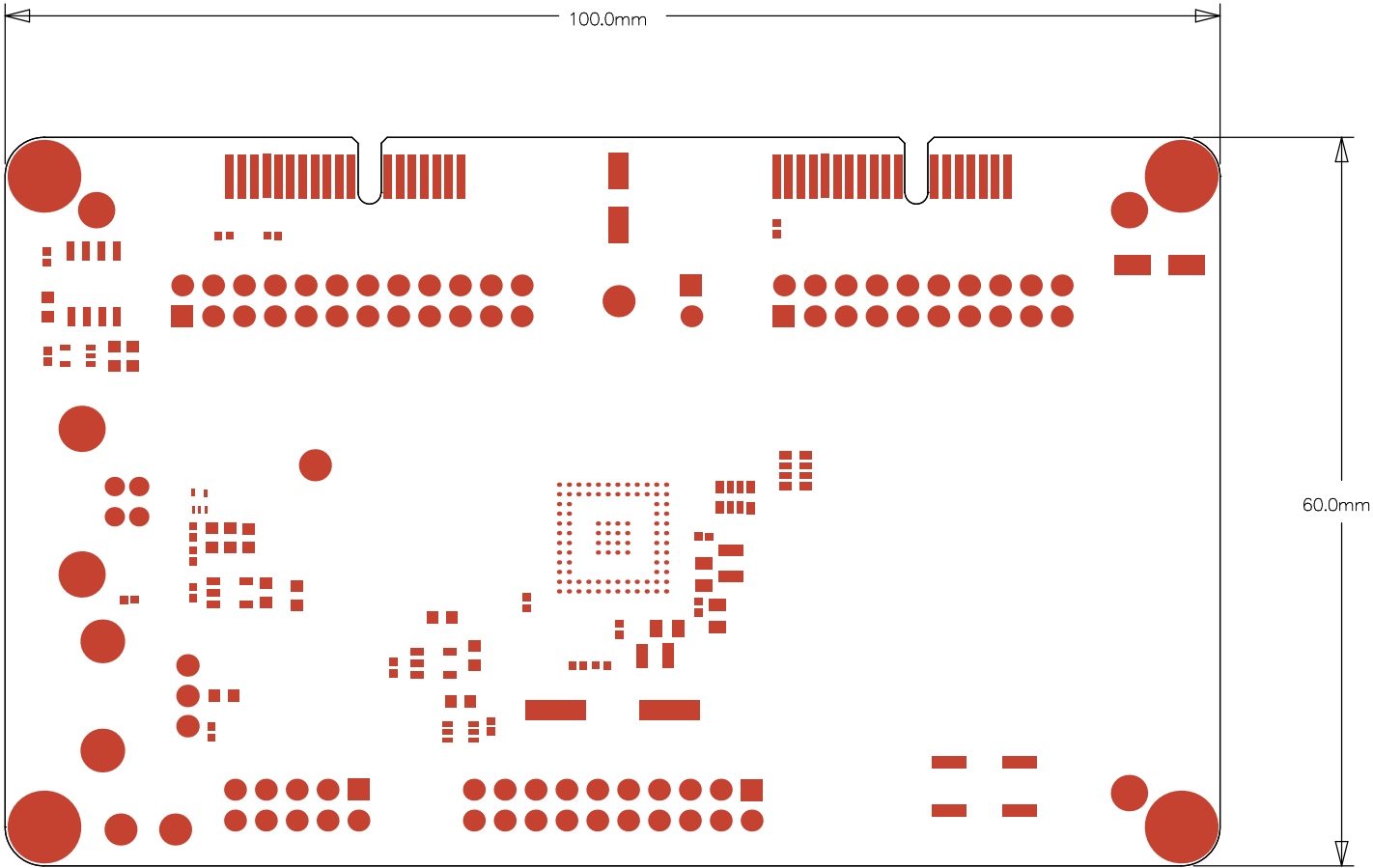
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

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Hole size is finished size.



FABRICATION INSTRUCTIONS

SOLDER MASK TOP

XMOS®

Project Name
XPCB-059 (XP-SKC-SU1)

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A4	17 OCTOBER 2012	1V1

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Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
	0.5oz
	1.0oz
	1.0oz
	0.5oz

Finished board thickness to be 1.6mm 0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

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Finish

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Liquid photo imageable soldermask (green). Pads have not been oversized.
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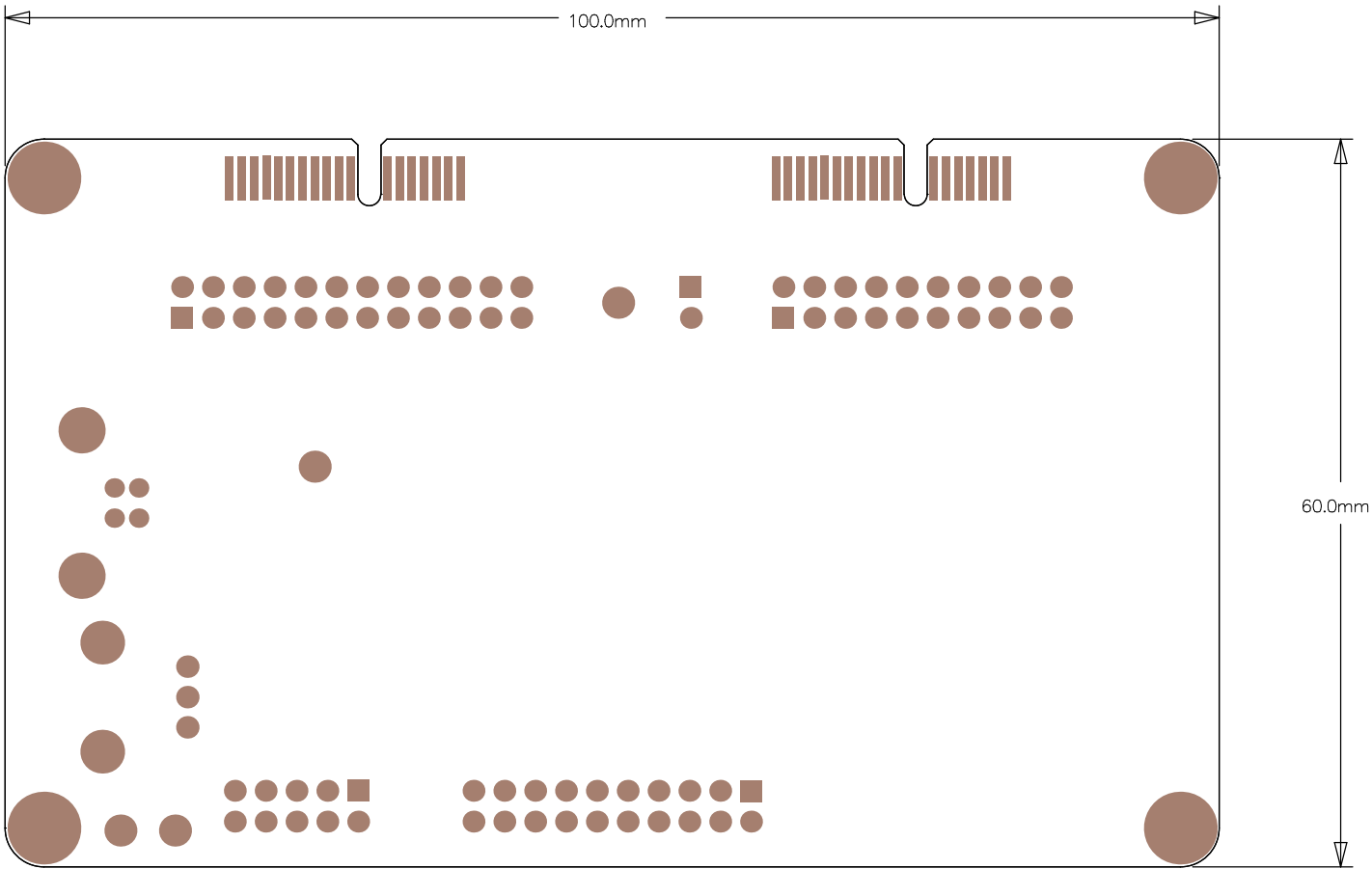
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

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Hole size is finished size.



FABRICATION INSTRUCTIONS

SOLDER MASK BOTTOM



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XPCB-059 (XP-SKC-SU1)

Sheet	Date	Revision
A4	17 OCTOBER 2012	1V1

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PCB Manufacturing Notes

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	0.5oz
	1.0oz
	1.0oz
	0.5oz

Finished board thickness to be 1.6mm 0.1mm

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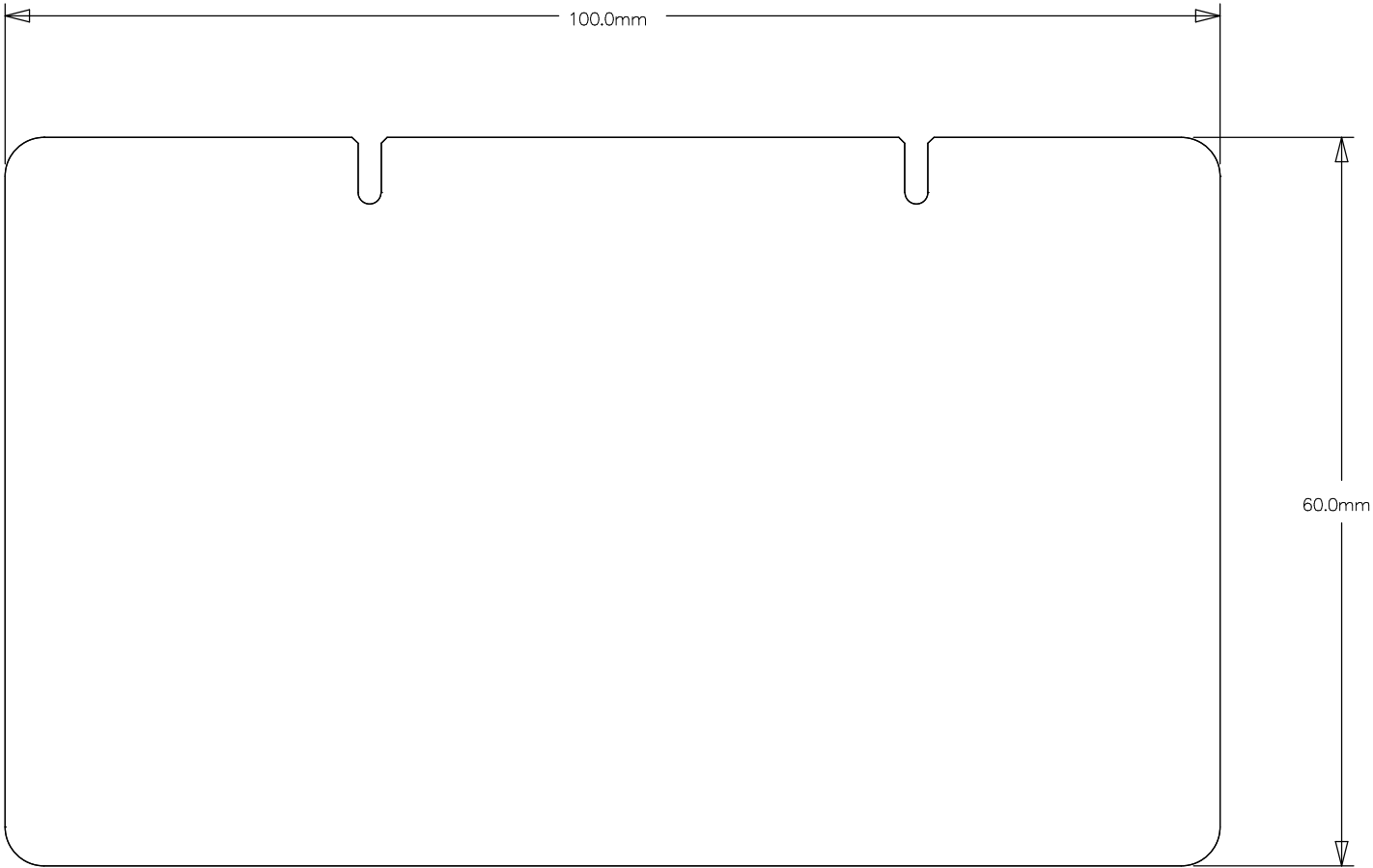
C.) Silkscreen

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Layer	Copper Weight (Pre-Plating)
	0.5oz
	1.0oz
	1.0oz
	0.5oz

Finished board thickness to be 1.6mm 0.1mm

Impedance Control

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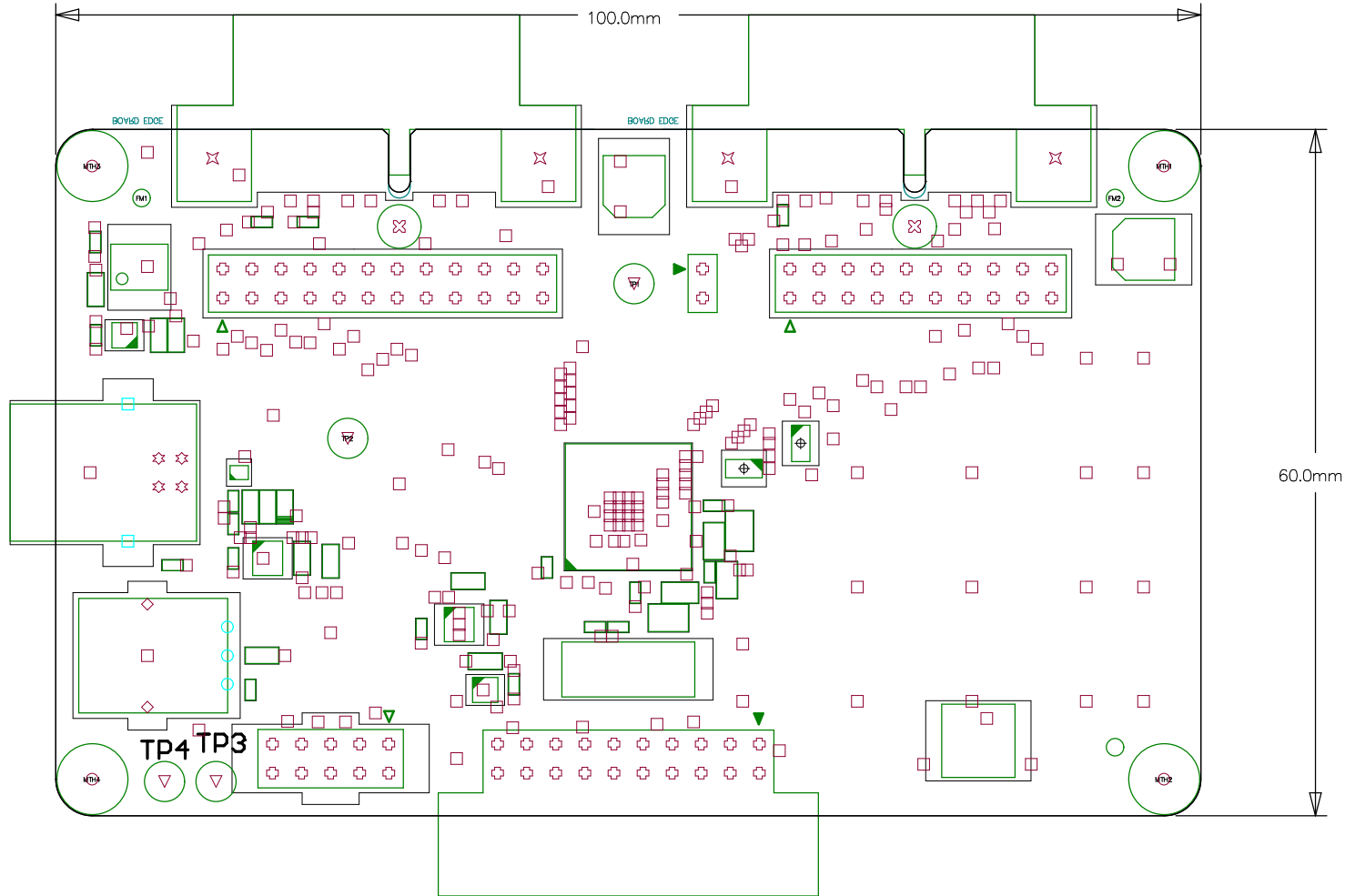
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FABRICATION INSTRUCTIONS

DRILL DRAWING

ASSEMBLY DRAWING TOP
ASSEMBLY DRAWING BOTTOM

Symbol	Hit Count	Tool Size	Plated	Hole Type
□	239	0.3mm (11.811mil)	PTH	Round
✱	4	0.95mm (37.402mil)	PTH	Round
◇	76	1mm (39.37mil)	PTH	Round
○	3	1.1mm (43.307mil)	PTH	Round
▽	4	1.6mm (62.992mil)	PTH	Round
✕	4	2mm (78.74mil)	NPTH	Round
◇	2	2.2mm (86.614mil)	PTH	Round
□	2	2.3mm (90.551mil)	PTH	Round
✕	2	2.8mm (110.236mil)	NPTH	Round
○	4	3.2mm (125.984mil)	PTH	Round
340 Total				

Drill Drawing



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Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
	0.5oz
	1.0oz
	1.0oz
	0.5oz

Finished board thickness to be 1.6mm 0.1mm

Impedance Control

Differential Pair on Top Layer, 0.2mm trace/0.2mm gap, 90R target impedance.

Copper Thieving/Balancing

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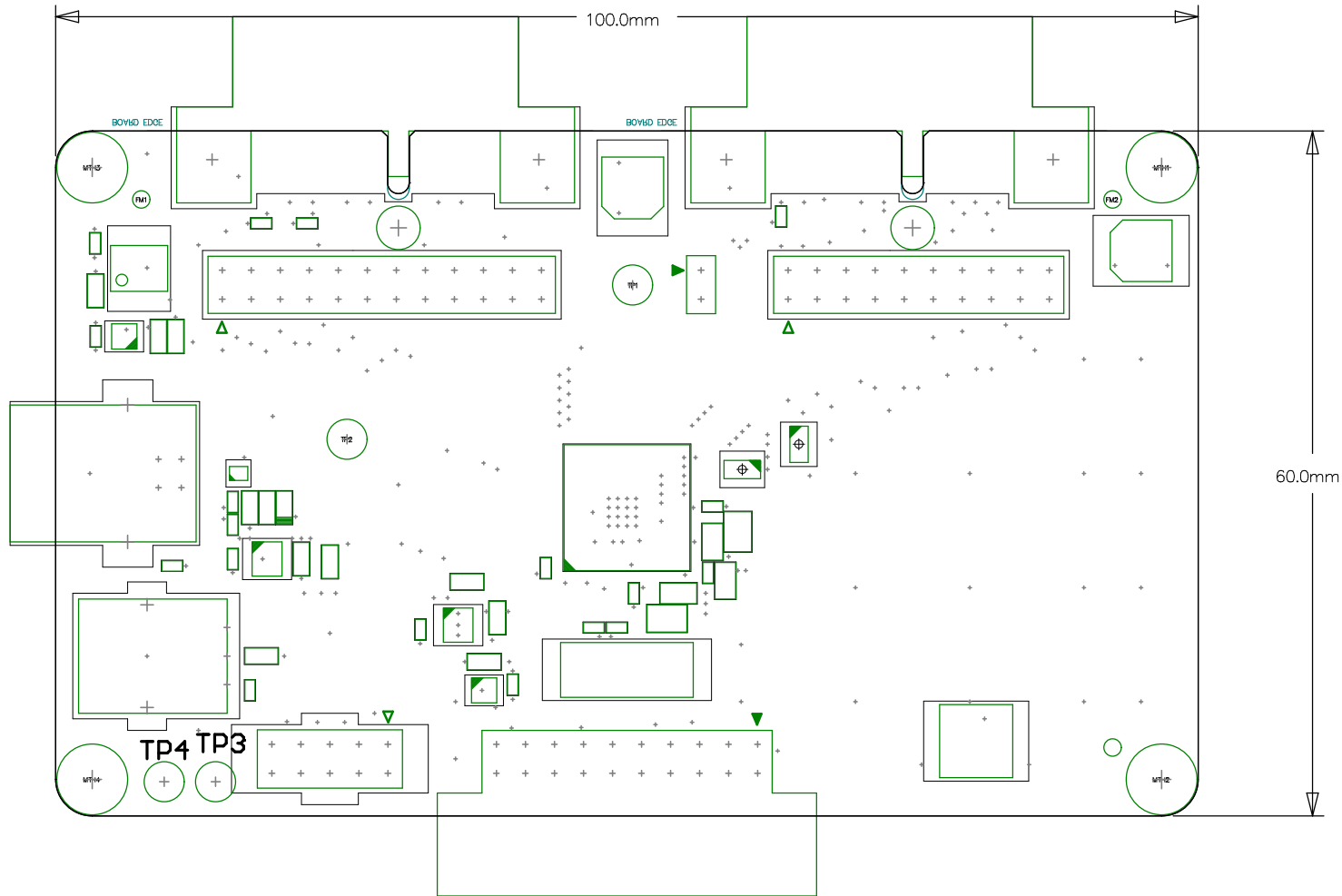
C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

Drill Data

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Hole size is finished size.



FABRICATION INSTRUCTIONS

ASSEMBLY DRAWING TOP
ASSEMBLY DRAWING BOTTOM



Project Name
XPCB-059 (XP-SKC-SU1)

Sheet	Date	Revision
A4	17 OCTOBER 2012	1V1

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BOM

SliceKit SU1 Core Board

Source Data From:

Project:

Variant:

SLICEKIT CORE SU1.SchDoc

XPCB059.PrjPCB

None



Report Date: 14/01/2013

17:29:01

Print Date: 14-Jan-13

5:29:07 PM

#	LibRef	Designator	Description	Quantity
1	E-01-0001	R3	RES 1k 0603 1%	1
2	E-01-0002	R4, R6, R7, R8	RES 10k 0603 1%	4
3	E-01-0004	R9	RNET 33R 0603x4 5%	1
4	E-01-0012	R5	RES 0R 0603 1%	1
5	E-01-0013	R10, R11	RES 0603 No Fit	2
6	E-01-0266	R1	Rotary Potentiometer, 10k, Vertical, Sleeve, No Detent	1
7	E-01-0267	R2	RNET 0603x4 NO FIT	1
8	E-02-0002	C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C22, C23, C24	MLCC 100nF 0402 X7R 16V	15
9	E-02-0004	C17, C18	MLCC 22uF 0805 X5R 6.3V	2
10	E-02-0008	C19, C20	MLCC 33pF 0402 COG 50V	2
11	E-02-0019	C21, C25	MLCC 2.2uF 0603 X5R 10V	2
12	E-02-0021	C1	MLCC 4.7uF 0805 X5R 10V	1
13	E-02-0031	C3, C4	Al Elec 47uF 16V CaseC SMD	2
14	E-02-0061	C2	MLCC 1nF 0402 X7R 50V	1
15	E-03-0013	U5	Memory, Flash, SPI, 4Mb (2Kx256), SOIC-8	1
16	E-04-0018	J1	USB Series B Receptacle, Through Hole	1
17	E-04-0022	J2	IDC Boxed Header, Right Angle, PCB Mount, Polarised, 20 Way, 2x10, 0.1" Pitch	1
18	E-04-0067	J3, J4	PCIe End Fire Socket, x1, 36 Pin, SMD	2
19	E-05-0006	U4, U6	Voltage regulator, LDO, Fixed, 3.3V, 150mA	2
20	E-07-0030	X1	Crystal, 24MHz, HC49/US SMD, Fundamental, 18pF, Tol. ±30ppm, Stab. ±50ppm	1
21	E-08-0002	FB1	Ferrite Bead, 330R AT 100MHz, 0603, 1.7A	1
22	E-09-0011	L1, L2	Power Inductor, 4.7uH, 0.7A, 260mR DCR	2
23	E-10-0027	D2	2-Channel ESD Protection Diode, 1.5pF, SOT-533	1
24	E-11-0012	U3	XMOS XS1-SU1 Processor, 96BGA, 500MHz	1
25	E-12-0001	D1	LED, GREEN, 0603	1
26	E-13-0006	U1	Logic Buffer, Tri-State, UHS Series, SC70	1
27	E-13-0009	U2	2-Input Multiplexer, UHS Series, SC70	1
28	E-14-0002	MTH1, MTH2, MTH3, MTH4	Mounting Hole, Plated, for M3 Screw, 6mm Dia	4
29	E-14-0014	MECH1, MECH2	Mounting Hole, Non Plated, 2.8mm Dia	2
30	E-15-0002	J5	Single Row Male Pin Header, 2 Pin, 0.1" Pitch, THT	1
31	E-15-0004	FM1, FM2, FM3	Fiducial, 1.5mm dot, 3mm keepout	3
32	E-15-0028	J8	Dual Row Male Pin Header, 10 Pin, 0.1" Pitch, THT	1
33	E-15-0033	TP1, TP2	Through Hole Testpoint, Compact, 1.8mm Loop, Black	2
34	E-15-0042	J6	Dual Row Male Pin Header, 20 Pin, 0.1" Pitch, THT	1
35	E-15-0043	J7	Dual Row Male Pin Header, 24 Pin, 0.1" Pitch, THT	1
36	E-15-0045	TP3, TP4	Through Hole Testpoint, Compact, 1.8mm Loop, DNP	2
37	E-16-0003	SW1	Tactile Switch, Momentary, SMD, J Bend	1
38	P-01-0011	PROD1, PROD2, PROD3, PROD4	Feet, Nylon, M3, 6mm Standoff	4
Approved			Notes	74