

## \*\*\* PCB SPECIFICATION FOR BARE BOARD MANUFACTURING \*\*\*

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PRODUCT OWNER : Silicon Labs  
DOCUMENT/BOARD : PCB2201A

DATE : 2017. 08. 18.  
REVISION : C01

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PREPARED BY : Attila Konfar  
BOARDS pr PANEL : 4 (1 x 4)  
PANEL SIZE : 141.0 x 278.0 mm  
BOARD SIZE : 115.0 x 60.0 mm  
BOARD THICKNESS : 1.6 mm +/-10%  
NO OF LAYERS : 6  
MATERIAL(S) : Glass Epoxy FR-4, NEMA Class 2, UL 94V-0, Tg min 150 C  
Materials in compliance with the RoHS and WEEE directives

MARKINGS : Logo, Week/Year, UL (ON SECONDARY SIDE (BOT))  
(Avoid areas reserved for DataMatrix, Barcodes or Labels)  
All PCB manufacturer's markings (Logo, Week/Year, UL)  
shall be put in the PCB frame. No marking on the boards  
is allowed

QUALITY REQ. : IPC-A-600 (current revisions) Class 2, and IPC specifications  
referred to by IPC-A-600

GENERAL REQ. : - Copper must not be added or removed from inside the board  
outline(s), without written consent/approval.  
Use the balancing of the panel that comes with the  
Gerber files (without alterations)  
If applicable, the following requirements are valid:  
- If Build-Up (Stack-Up) is specified, follow Build-Up,  
otherwise use (board manufacturer) standard Build-Up.  
- Break-away areas may be used for patterns, holes etc.  
by manufacturer for QA purposes.  
- If V-CUT, use angle 30 +/- 5 degrees.  
V-CUT minimum remaining thickness 0.5 +/- 0.1 mm.  
Use of V-CUT test pads is allowed.  
- Inner radius (contour/outline) 1.2 mm, unless stated  
otherwise.

COPPER THK. : SEE BUILD-UP  
COPPER PASSIV. : ENIG to meet IPC-4552 requirements (current revision)  
(Electroless Nickel/Immersion Gold)

RESIST MASK : Solder Mask Color: BLACK (NB! NON-STANDARD)  
Photo Polymer Wet film  
to IPC-SM-840 Class T requirements (current revision)  
Thickness minimum 8 um, maximum 20 um

VIA HOLES : PLUGGED/FILLED, IPC-4761 (current revision) Type IV-b  
Plugged and Covered Both Sides, Low CTE Plugging Paste  
If Type IV-b is not available as a process, then Type IV-a  
for the Top Side, and Overprinted (Tented) Bot Side is OK

LEGEND/SILKSCR. : WHITE, BOTH SIDES (TOP + BOT)  
CONTROLLED IMP : Design has Controlled impedances. FOLLOW BUILD-UP STRICTLY!  
Unless explicitly stated otherwise, controlled impedance  
has been designed into the board. Use of test strip is  
hence normally not required.

NOMINAL VALUES for Width, Spacing and VIA Diameter:

Cu TRACK(TRACE) : Minimum conductor width : 0.10 mm (4 mils)  
Cu TRACK(TRACE) : Minimum conductor spacing : 0.10 mm (4 mils)  
MINIMUM VIA : Minimum via pad diameter : 0.5 mm (20 mils)  
Minimum via hole diameter : 0.25 mm (9.8 mils)  
Min via hole may have more than one pad diameter.

&lt;SPECIFICATION CONTINUED ON NEXT PAGE&gt;

BUILD UP :

TOP ==== | |===== 38 um Cu (ca) After plating  
 ///// | |// PREPREG or CORE ///// 300um

L1 ===== | |===== 18 um Cu (0.5 Oz)  
 ///// | |// PREPREG or CORE /////

L2 ===== | |===== 18 um Cu (0.5 Oz)  
 ///// | |// PREPREG or CORE /////

L3 ===== | |===== 18 um Cu (0.5 Oz)  
 ///// | |// PREPREG or CORE /////

L4 ===== | |===== 18 um Cu (0.5 Oz)  
 - - - | |// PREPREG or CORE ///// 300um

BOT ==== | |===== 38 um Cu (ca) After plating

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The distance between Top-L1 and Bottom-L4 should be as close to 300 um as possible!

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Select Center Prepreg thickness in order to reach specified board thickness

TEST : 100% Electrical Test  
 Optical test, AOI (with automatic scanner)  
 Visual inspection  
 (Generate netlist from Gerber and Drill files)

Avoid use of 2125 Prepreg

If NB! is used in this specification, it means:  
 abbreviation for nota bene!, a Latin expression meaning  
 note well!

#### ----- NC DRILL - HOLE INFORMATION:

WARNING : Drill dimensions must be taken from the Excellon (.DRL) file(s), and the drill report file(s) (.DRR).  
 NON-PLATED holes may have a small center marker in the Gerber files.  
 Under no circumstance must these Gerber flashes be mistaken for the hole drill dimensions!

The drill data may contain slots (in a separate file).  
 Dimensions for the finished board (after plating).  
 Tolerances +/- 0.1 mm, unless specified differently.  
 Via Holes +0.05 mm/-Via Size, unless specified differently.

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