

*** PCB SPECIFICATION FOR BARE BOARD MANUFACTURING ***

PRODUCT OWNER : Silicon Labs
 DOCUMENT/BOARD : PCB5100 Rev A01
 DATE : 2014-12-01
 REVISION : A01

PREPARED BY : Ole Jacob Bryhni Frostad
 BOARDS pr PANEL: 4 (1 x 4)
 PANEL SIZE : 136.0 x 280.0 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 140 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 Lables)

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.
 If applicable, the following requirements are valid:
 - Copper balancing may be applied on break-away-tabs,
 or otherwise outside board outline(s), but must have
 a minimum 1.5 mm clearance to possible fiducials.
 - 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 (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
 UNLESS OPTIONALLY: EXPLICIT OTHER VIA TREATMENT REQUESTED

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 SPACING : Minimum conductor spacing: 0.0889 mm (3.5 mils)
 MINIMUM VIA : Minimum via pad diameter : 0.51 mm (20 mils)
 Min via hole (SEE HOLE INFORMATION FURTHER DOWN)
 Min via hole may have more than one pad diameter.

(SPECIFICATION CONTINUED ON NEXT PAGE)

BUILD UP :

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L1 ===== 35 um Cu (After plating)
  ////////// C O R E ////////// 100 um
L2 ===== 18 um Cu (0.5 Oz)
  - - - P R E P R E G - - - 128 um
L3 ===== 18 um Cu
- - ////////// C O R E ////////// 1000 um - - CENTER - -
L4 ===== 18 um Cu
  - - - P R E P R E G - - - 128 um
L5 ===== 18 um Cu
  ////////// C O R E ////////// 100 um
L6 ===== 35 um Cu

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(Approximate Prepreg thicknesses)

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 (.exc) file(s).
 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 file may contain slots. See drill information below.
 The Gerber file mb5100.gex may also contain slot information.
 Dimensions for the finished board (after plating).
 Tolerances +/- 0.1 mm, unless specified otherwise below.
 Via Holes +0.05 mm/-Via Size, unless specified otherwise below.

PLATED HOLES:

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T01 VH  DIA = 0.25 mm  QTY = 1660 (VIA-HOLES)
T02 VH  DIA = 0.3 mm   QTY = 1680 (VIA-HOLES)
T03 PTH DIA = 0.9 mm   QTY = 8
T04 PTH DIA = 1.0 mm   QTY = 152
T05 PTH DIA = 1.2 mm   QTY = 16
T06 PTH DIA = 3.0 mm   QTY = 4

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NON-PLATED HOLES:

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T07 NP  DIA = 0.9 mm  QTY = 8
T08 NP  DIA = 1.6 mm  QTY = 8
T09 NP  DIA = 3.0 mm  QTY = 8

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