**Checklist – Printed Circuit Board Assembly**

This checklist covers the items that should be confirmed when preparing to release a drawing for a custom Printed Circuit Board Assembly. Engineers reviewing a drawing should inspect the document for appropriate notations covering the items in the checklist. This list is not exhaustive, and care should be taken to make sure that special features of the part designed are appropriately noted.

The drawing covered by this checklist is a design record for engineering used to communicate the requirements of the part to suppliers for their process control and to your company incoming inspection processes.

Note that a complete drawing package includes many electronic files (see Attachments), but the top level documents are the Assembly Drawing and the PCB Fabrication Drawing.

## Common Drawing Format Requirements

| Item | Description | Check |
| --- | --- | --- |
| 1.1 | Company Name, Address, Contact Information |  |
| 1.2 | Proprietary Information Statement |  |
| 1.3 | Drawing Title |  |
| 1.4 | Drawing Number |  |
| 1.5 | Revision |  |
| 1.6 | Default Dimensional System (inches / mm) and Tolerances |  |
| 1.7 | Sheet Number and Total Number of Sheets |  |
| 1.8 | Method of Approval |  |

## Attachments

| Item | Description | Check |
| --- | --- | --- |
| 2.1 | The documents are typically bundled in a compressed folder (zip file). |  |
| 2.2 | Fabrication Artwork (e.g., Gerber Photo-plots) or Database (e.g., ODB++)  Silkscreen layers, Solder Mask Layers, Copper Layers, Drill File  Pick and Place File |  |
| 2.3 | Fabrication Drawing |  |
| 2.4 | Assembly Drawing |  |

## Fabrication Drawing Items and Notes

| Item | Description | Check |
| --- | --- | --- |
| 3.1 | Dimensioned drawing of board with tolerances, including palletizing details if important |  |
| 3.2 | Material Specification (e.g., FR4) and |  |
| 3.3 | Flammability rating (e.g., UL 94-V0) |  |
| 3.4 | Finished Board Thickness and Tolerance |  |
| 3.5 | Board Stack-up (core thicknesses, inner layer thickness) |  |
| 3.6 | Copper Weights for each layer |  |
| 3.7 | Hole sizes, tolerance, and plating requirements |  |
| 3.8 | Board Warp and Twist tolerances |  |
| 3.9 | Solder Mask type, color, and tolerance (e.g., SMOBC, Green, 20 mils etch to mask registration) |  |
| 3.10 | Silkscreen type and color (e.g., Non-conductive Ink, white) |  |
| 3.11 | Board plating requirements (e.g., ENIG, Lead-Free HASL) |  |
| 3.12 | RoHS compliance requirements |  |
| 3.13 | Board Fabrication Standards (e.g., IPC-A-600 Class 1,2,3) |  |
| 3.14 | Fab Test Requirements (e.g., Netlist connectivity) |  |

## Assembly Documentation

| Item | Description | Check |
| --- | --- | --- |
| 4.1 | Bill of Materials – see below |  |
| 4.2 | Drawing of Finished Board with overall dimensions |  |
| 4.3 | Notes for any special processes (e.g., swage nut location, heatsink installation, wires soldered to board, conformal coating, etc.) |  |
| 4.4 | RoHS compliance process requirements |  |
| 4.5 | Assembly Standards (e.g., IPC-A-610 Class 1,2,3) |  |
| 4.6 | Reference to Pick-and-Place file |  |
| 4.7 | Test Requirements |  |

## Bill of Materials

| Item | Description | Check |
| --- | --- | --- |
| 5.1 | Part Description (e.g., Capacitor 0.1uF 35v 0805) |  |
| 5.2 | Quantity |  |
| 5.3 | Reference Designator – position on the board |  |
| 5.4 | Part Manufacturer |  |
| 5.5 | Manufacturers Part Number |  |
| 5.6 | Alternate Mfg and Mfg P/N |  |