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Simulación y fabricación de PCBS José Vanegas #19125

Sección no. 10

**Proyecto Multicapa**

**Restricciones del fabricante.**

1. **JLCPCB**

|  |  |  |
| --- | --- | --- |
| PCB Specifications | | |
| Features | Capabilities |  |
| Layer count | 1,2,4,6 layers |  |
| Controlled Impedance | 4/6 layer, default layer stack-up |  |
| Material | FR-4 |  |
| Dielectric constant | 4.5(double-side PCB) |  |
| Max. Dimension | 400x500mm |  |
| Dimension Tolerance | ±0.2mm |  |
| Board Thickness | 0.4/0.6/0.8/1.0/1.2/1.6/2.0mm |  |
| Thickness Tolerance  (Thickness≥1.0mm) | ± 10% |  |
| Thickness Tolerance  (Thickness<1.0mm) | ± 0.1mm |  |
| Finished Outer Layer Copper | 1 oz/2 oz (35um/75um) |  |
| Finished Inner Layer Copper | 0.5 oz (17um) |  |
| Drill/Hole Size | | |
| Drill Hole Size (Mechanical) | 0.20mm- 6.30mm |  |
| Drill Hole Size Tolerance | +0.13/-0.08mm |  |
| Blind/Buried Vias | Don’t support |  |
| Min. Via hole size | 0.2mm |  |
| Min. Via diameter | 0.4mm |  |
| PTH hole Size | 0.20mm - 6.35mm |  |
| Pad Size | 0.70mm- 6.35mm |  |
| Min. Non-plated holes | 0.50mm |  |
| Min. Plated Slots | 0.65mm |  |
| Min. Non-Plated Slots | 1.0mm |  |
| Min. Castellated Holes | 0.60mm |  |
| Hole size Tolerance (Plated) | +0.13mm/-0.08mm |  |
| Hole size Tolerance (Non-Plated) | ±0.2mm |  |
| Rectangle Hole/Slot | Don’t support |  |
| Minimum Clearance | | |
| Hole to hole clearance (Different nets) | 0.5mm |  |
| Via to Via clearance (Same nets) | 0.254mm |  |
| Pad to Pad clearance (Pad without hole, Different nets) | 0.127mm |  |
| Pad to Pad clearance (Pad with hole, Different nets) | 0.5mm |  |
| Via to Track | 0.254mm |  |
| PTH to Track | 0.33mm |  |
| NPTH to Track | 0.254mm |  |
| Pad to Track | 0.2mm |  |
| Solder Mask | | |
| Solder mask opening/ expansion | 0.05mm |  |
| Solder bridge | 0.2mm(green)  0.254mm(other colors) |  |
| Solder mask color | green, red, yellow, blue, white, and black. |  |
| Solder mask dielectric constant | 3.8 |  |
| Solder mask thickness | 10-15UM |  |
| Legend | | |
| Minimum Line Width | 6 mil (0.153mm) |  |
| Minimum text height | 32 mil (0.8mm) |  |
| Character width to height ratio | 1:6 |  |
| Pad To Silkscreen | 0.15mm |  |
| Board outlines | | |
| Trace to Outline | 0.2mm |  |
| Trace to V-cut line | 0.4mm |  |
| Panelization | | |
| Panelization without space | 0mm |  |
| Panelization with space | 2mm |  |
| Panelized Round board | ≥20mmx20mm |  |
| Panelized castellated holes board | Panelize with stamp holes and add tooling strips on four board edges |  |
| Min. Width of Breakaway Tab | 4mm |  |
| Min. Edge Rails | 4mm |  |
| Minimum Annular Ring | | |
|  | Minimum annular ring | PTH |
| 1oz Copper | 0.13mm | 0.3mm |
| 2oz Copper | 0.2mm | 0.3mm |
| Minimum trace width and spacing | | |
| Copper weight | Min. Trace width | Min. Spacing |
| H/HOZ (Inner layer) | 5mil (0.127mm) | 5mil (0.127mm) |
| 1oz (Outer layer) | 1/2 layers: 5mil (0.127mm)  4/6 layers: 3.5mil(0.09mm) | 1/2 layers: 5mil (0.127mm)  4/6 layers: 3.5mil(0.09mm) |
| 2oz (Outer layer) | 8mil (0.2mm) | 8mil (0.2mm) |
| BGA | | |
| Layer count | Min. BGA pad dimensions | Min. distance between BGA |
| 1/2 layers | 0.4 mm | 0.127mm |
| 4/6 layers | 0.25mm | 0.127mm |