

PCB121-01 specification

Contact info

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Governing standard

IPC 6012 Class 2

PCB summary

Layers: 4
Surface: ENIG gold (Ni/Au)
Solder mask : Wet film, mask color blue, top and bottom
Silkscreen: White, top and bottom
Electrical test: Yes
Total thickness: 1.6 mm
Min trace width: 100 um
Min spacing: 100 um
Blind/buried vias: No
Drilled hole qty: 1600
Min hole size: 0.25mm plated
Tolerance: All holes are +/- 0.1mm
Min annular: 0.15mm
Aspect ratio: 6.4
PCB Size: 141.5*106.9mm, including board assembly break-off rail bottom
Paste mask stencil: No stencil from PCB manufacturer
No of boards in panel: 1 (one main board, three smaller break-off modules, break-off rail)
Material: FR4 Standard

Number of boards wanted and delivery

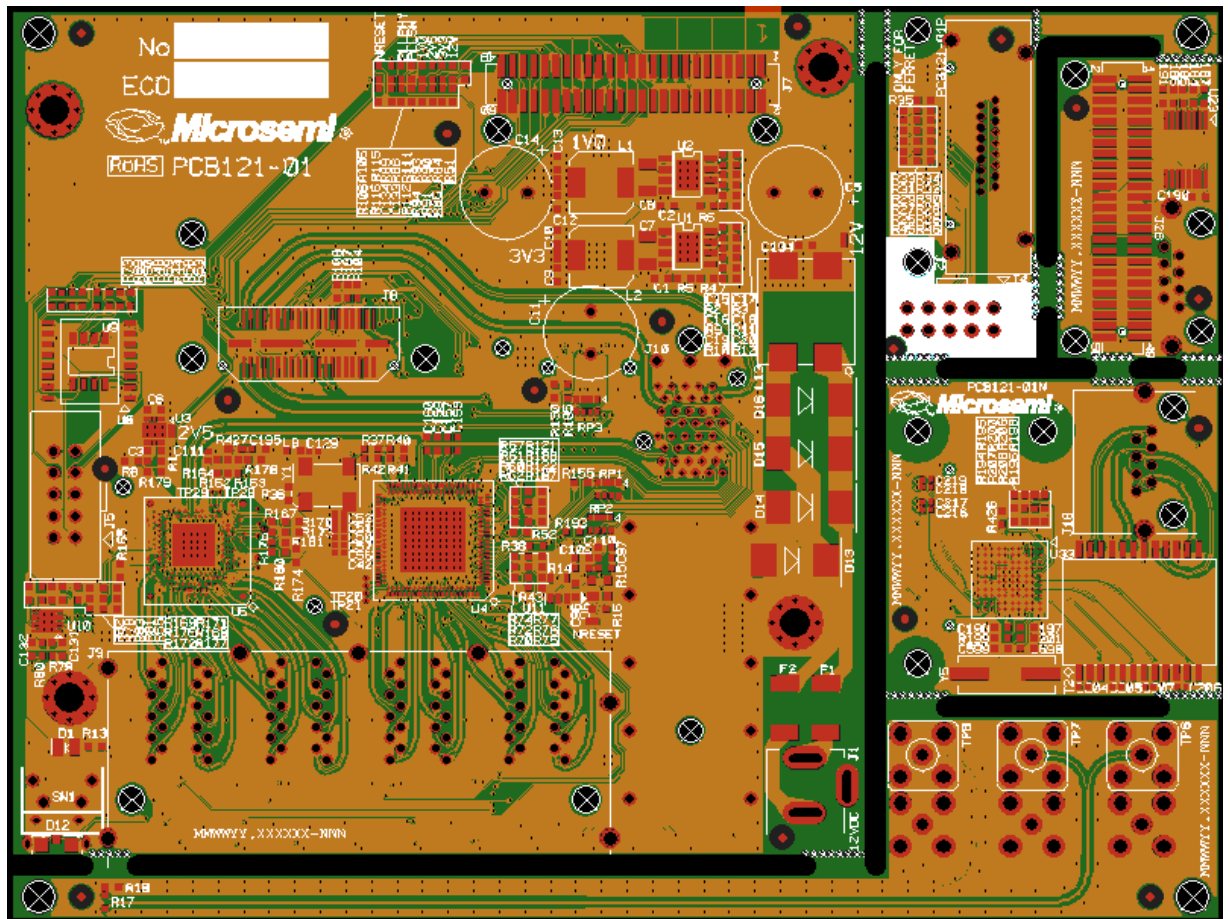
- 42 pcs, with 6 day delivery

Film data

- Extended gerber format
- ODB++ on request

Special

- The design contains a main board as well as three smaller break-off modules, and a board assembly break-off rail on the bottom edge.
- There are nine 2.4mm **non-plated** milled lines specified in the outline layer for board assembly break-off rail and module borders.
- There are three 1.0mm **plated** milled lines specified in the outline layer for a DC power input bottom right of main board.
- There are four 0.5mm **plated** milled lines specified in the outline layer for a micro-USB connector bottom left of main board.



Stackup

Product layer build

Free builds | Constrained builds | Custom build

Thickness	1oz/1oz	1oz/...	1oz/...	2oz/...	2oz/...
0.5 mm	4042 4142 Hi-Tg				
0.8 mm	4017 4067 blind 4117 Hi-Tg				
1.0 mm	4041 4044 blind 4051				
1.2 mm	4013				
1.4 mm	4046				
1.6 mm	4018 4019 4026 4031 4036 4039 4045 4050 4052 4136	4058	4023	4048 4056 4065	
1.8 mm	4027 4043 blind 4127	4047		4049 4038	
2.0 mm	4061				
2.4 mm	4030				
2.7 mm	4028				
3.2 mm	4059			4054	

*Std indicates a build which is usually the least expensive alternative
* indicates stackup not visible to customers

4 Layers

OK Cancel

4018: 1.6mm 1oz

Total thickness: 1.51 mm $\pm 10\%$ (excluding outer copper)
Material: FR-4 -- IPC-4101C /21
* Copper foil thickness (excluding copper plating)
Copper plating: minimum 20µm for IPC Class 2
Note: Finished prepreg thickness may be less than specified (depending on inner layer copper coverage), leading to a corresponding reduction of finished total thickness

Impedance calculations – informative, boards are *not* impedance controlled in manufacturing

- Differential 100 ohms pairs, outer layers 1 & 4, nominal trace width 125µ (over-etch adjustment -0µ (top-of-trace) +10µ (bottom-of-trace)), nominal separation 125µ (over-etch adjustment -10µ). Our experience is that Polar calculates approx 10 ohms more than our TDR measures, or in other words this geometry results in a measured differential impedance close to 100 ohms.

Example.Zo - CIT525 Differential Controlled Impedance Calculator

File Structure Help

Edge-coupled Coated Microstrip

Notes:
Add your comments here

Height (H): 0.18
Height1 (H1): 0.015
Width (W): 0.125
Width1 (W1): 0.135
Separation (S): 0.115
Thickness (T): 0.048
Dielectric Constant (Er): 4.2

Impedance Calculated

Differential Impedance (Zo): 89.23
Delay (ps/in): 153.61

Polar World Leaders in PCB Faultfinding and Controlled Impedance Measurement

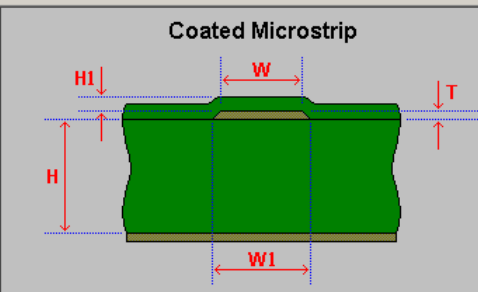
Ready

- Regular traces, outer layers 1 & 4, no plane on same layer. Nominal trace width 125μ (over-etch adjustment -0μ (top-of-trace) $+10\mu$ (bottom-of-trace)).

Example.Zo - CITS25 Differential Controlled Impedance Calculator

File Structure Help

Coated Microstrip



Height (H): 0.18
 Height1 (H1): 0.015
 Width (W): 0.125
 Width1 (W1): 0.135
 Thickness (T): 0.048
 Dielectric Constant (Er): 4.2

Notes:
 Add your comments here

Polar *World Leaders in PCB Faultfinding and Controlled Impedance Measurement*

Impedance Calculated

Impedance (Zo): 67.49
 Delay (ps/in):

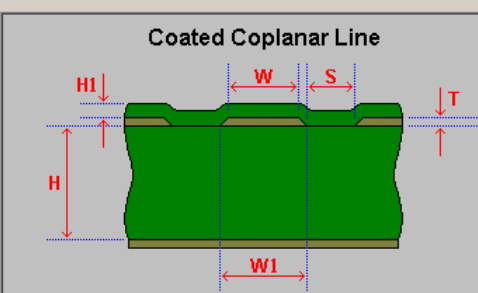
Ready

- Regular traces, outer layers 1 & 4, surrounded by plane on same layer. Nominal trace width 125μ (over-etch adjustment -0μ (top-of-trace) $+10\mu$ (bottom-of-trace)), nominal separation 125μ (over-etch adjustment -10μ).

Example.Zo - CITS25 Differential Controlled Impedance Calculator

File Structure Help

Coated Coplanar Line



Height (H): 0.18
 Height1 (H1): 0.015
 Track (W): 0.125
 Width1 (W1): 0.135
 Ground (W2):
☒ Plane (W3):
 Thickness (T): 0.048
 Separation (S): 0.115
 Dielectric (Er): 4.2

Notes:
☒ Lower Ground Plane

Polar *World Leaders in PCB Faultfinding and Controlled Impedance Measurement*

Impedance Calculated

Impedance (Zo): 52.56
 Delay (ps/in): 154.61

Ready