PCBs

Materials, types, and sizes :

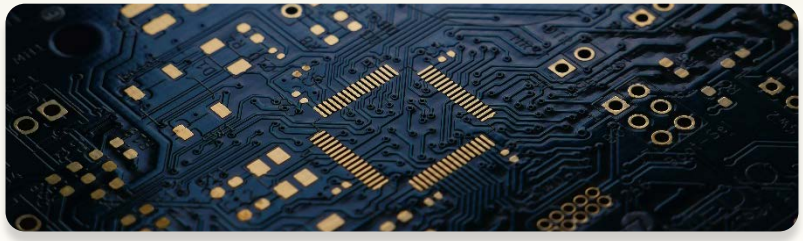
Types:
- Rigid
- Flex
- Flex-rigid
- Semi-flex
- HDI
- HF PCB
- IML/IMS

Layers:
- 0 → 20

Max. manufacturing size:
- 640 mm x 1100 mm

Materials:
- FR4 TG130 → 180
- Shengyi
- KB
- ITEQ
- Nanya
- Rogers
- Arlon
- Taconic
- Aluminum
- Hybrid multilayers

Copper foil thickness:
- 0.5 OZ → 6.0 OZ

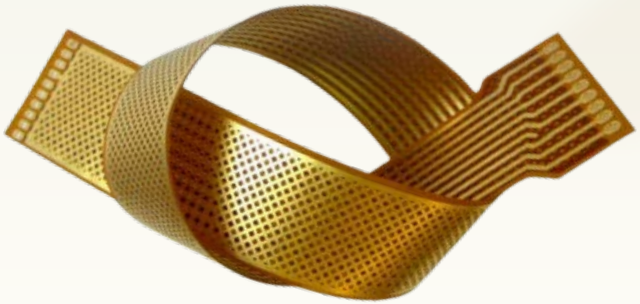


PCBs

Treatments and Techniques:

Surface treatment:
- HASL (1 → 40 µm)
- LF HASL (1 → 40 µm)
- ENIG (Ni 3 → 6 µm, Au min. 0.05 µm)
- Immersion Tin (≥ 0,8 µm)
- Immersion Silver (0,15 µm → 0,5 µm)
- Gold Fingers (0,08 µm → 1,2 µm)
- Flash Gold (0,04 µm → 0,075 µm)
- OSP (0,2 µm → 0,5 µm)
- ENEPIG (Ni 3 → 6 µm, Pd 0,05 → 0,15 µm, Au min. 0,025 µm)

Special techniques:
- Blind and buried holes
- Any layer via
- Via in pad
- Half plated holes
- Plated edges
- Countersink
- Peelable mask
- Fully electrolytic gold
- Partial electrolytic gold
- Press-fit
- Beveling



PCBs

Holes, Soldermask, and Silkscreen:

Min. finished Hole size:
- 0.15 mm

Hole diameter tolerances:
- PTH: ± 0.076 mm
- NPTH: ± 0.05 mm
- Slot: ± 0.1 mm

Hole location tolerance:
- ± 0.076 mm

Silkscreen height - width:
- 0.76 mm → 0.15 mm

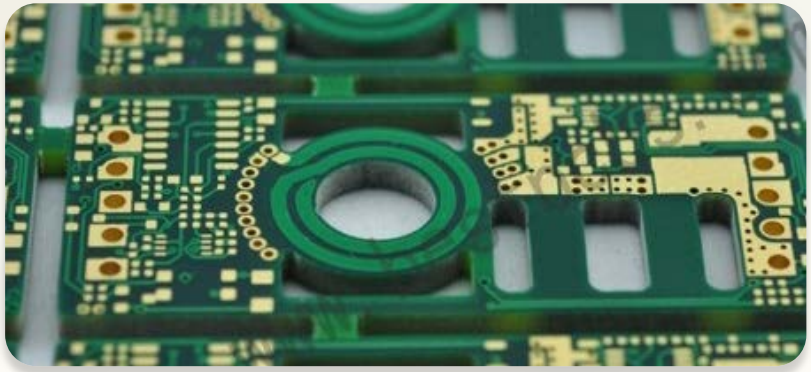
Silkscreen min. contraposition tolerance:
- ± 0.15 mm

Soldermask thickness:
- 5 → 25 µm

Soldermask bridge:
- 0.1 mm

Soldermask alignment:
- ± 0,05 mm for sample
- ± 0,075 mm for mass production

Plug hole diameter (with soldermask):
- 0.25 mm → 0.5 mm



PCBs

Separation techniques | Routing:

Dimension tolerance:
- ± 0.1 mm

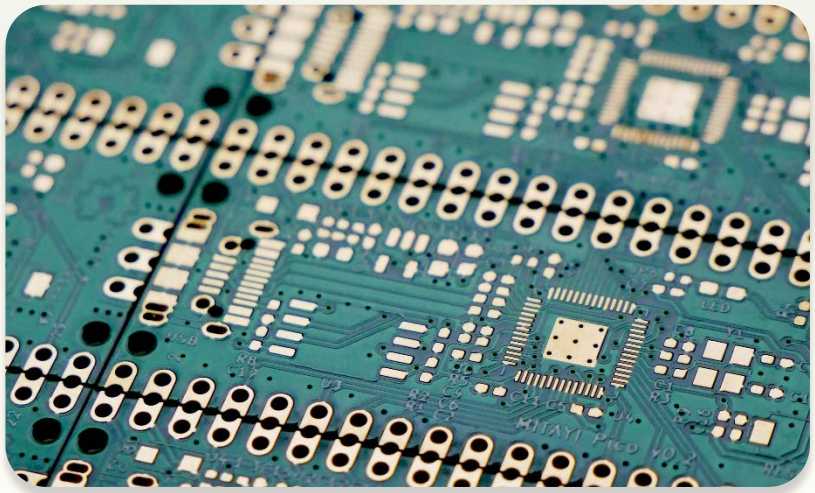
Min. slot size:
- 0.6 mm

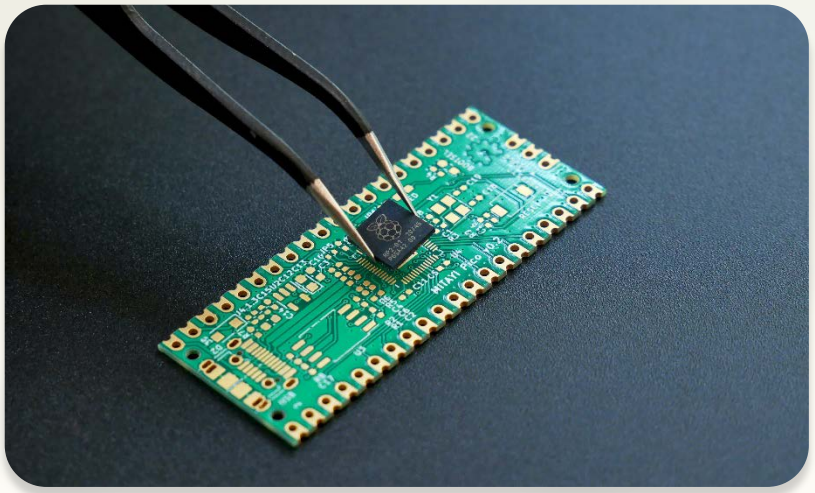
Min. distance from conductor to routing edge:
- ≥ 0.254 mm

Min. distance from hole edge to routing edge:
- ≥ 0.254 mm

Countersink depth tolerance:
- ± 0.18 mm

Routing tool sizes:
- 0.8 mm → 3.0 mm





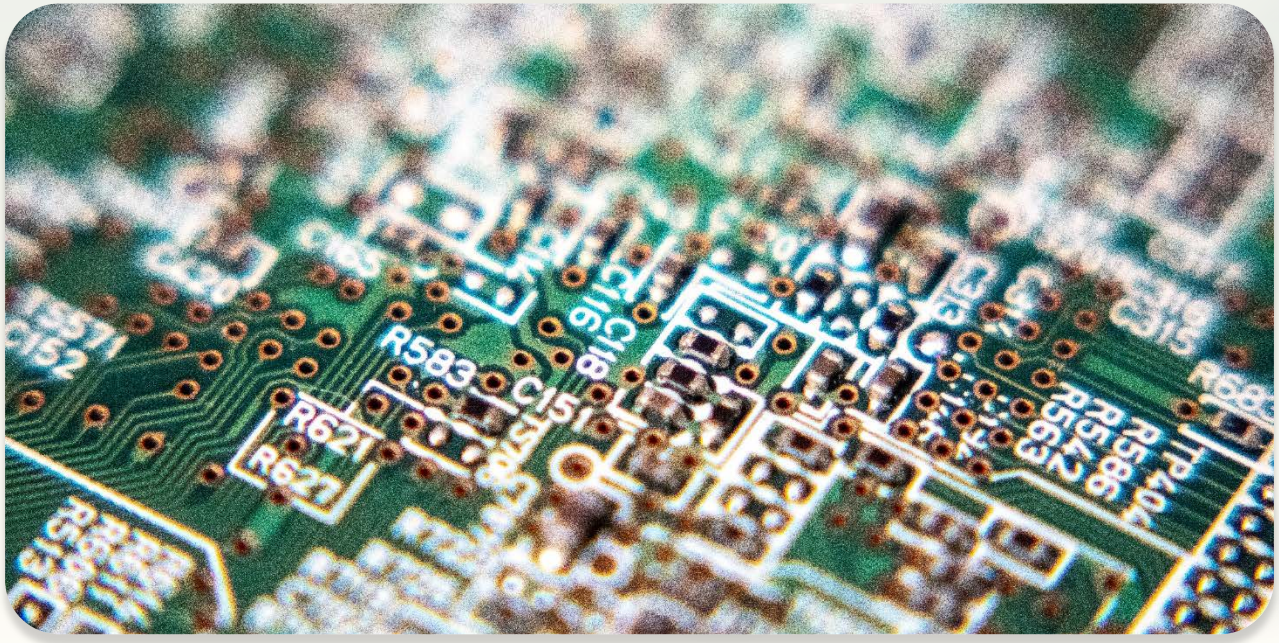
PCBs

Separation technique | V-Cut:

Angle:
- 20°30°45°: ± 5°

Remaining Thickness Tolerance:
- ±0.1 mm

Maximum scoring alignment tolerance on both sides:
- ±0.1 mm



PCBs

Separation technique | Punching:

Dimension tolerance:
- ±0.1 mm min

Min. punching size:
- 1.0*1.5 mm

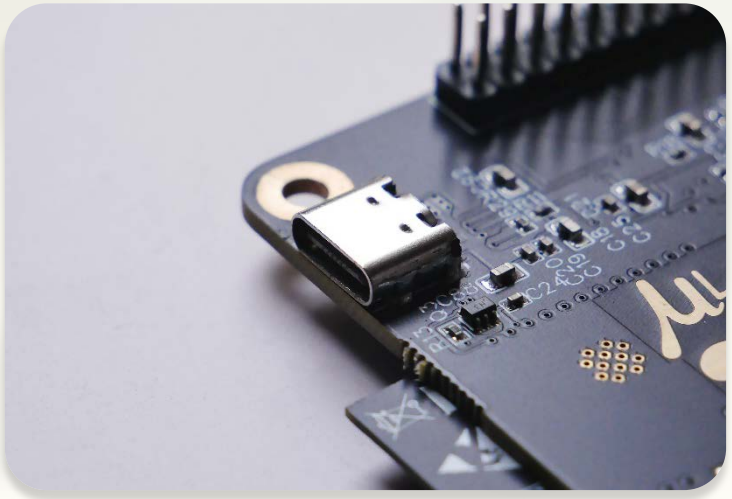
Min. distance from punching edge to board edge:
- 0.4 mm

Min. distance between adjacent punching cuts:
- 2.0 mm

Min. distance from punching hole to board edge:
- Same as board thickness

Max. thickness of punching boards:
- 2.0 mm

Min. distance from conductor to punching edge:
- 0.5 mm



PCBs

Board Thickness:

Double sided:
- 0.2 mm → 6.0 mm

4 Layers:
- 0.4 mm → 6.0 mm

6 Layers:
- 0.8 mm → 6.0 mm

8 Layers:
- 1.0 mm → 6.0 mm

10 Layers:
- 1.2 mm → 6.0 mm

12 Layers:
- 1.5 mm → 6.0 mm

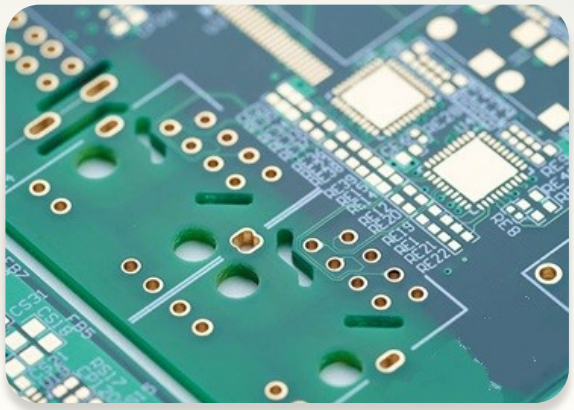
14 Layers:
- 1.5 mm → 6.0 mm

16 Layers:
- 1.6 mm → 6.0 mm

18 Layers:
- 2.2 mm → 6.0 mm

20 Layers:
- 2.4 mm → 6.0 mm

Board thickness tolerance:
- ≥ 1.0 mm ⇒ ±10%
- ≤ 1.0 mm ⇒ ±0.1 mm



PCBs

Miscellaneous:

Markings:
- UL
- RoHs
- Date code
- Barcode
- QR code

Peelable mask plug hole:
- 0,8 mm ➞ 6,0 mm

Aspect ratio:
- 12:1

Impedance control:
- ±10%

Min. line width / space:
- 3 mil (75µm)

Min. Space for carbon:
- ≥ 0.4mm