



**PCB
TECHNOLOGY**

CONTENTS

1 WHAT IS PCB

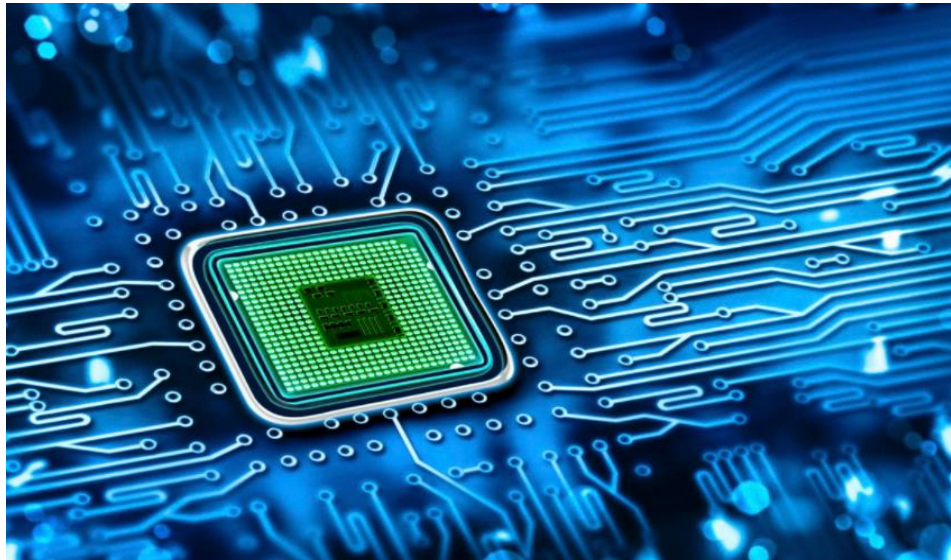
2 PCB CLASSIFICATION

3 PCB MANUFACTURING
PROCESS

01

WHAT IS PCB

01 WHAT IS PCB



A printed circuit board (PCB) mechanically supports and electrically connects electronic components using conductive tracks, pads and other features etched from copper sheets laminated onto a non-conductive substrate. Components are generally soldered on the PCB.-----wiki

02

PCB CLASSIFICATION

02 PCB CLASSIFICATION

01

BY MATERIAL

02

BY LAYER

03

BY VIAS

04

BY SURFACE FINISH

05

BY HARDNEDD

02 PCB CLASSIFICATION



BY MATERIAL

Organic material

Phenolic resin, glass fiber/epoxy, Polyimide, BT/Epoxy, etc.

Inorganic material

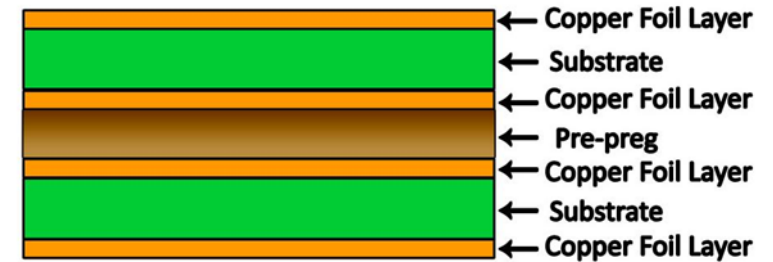
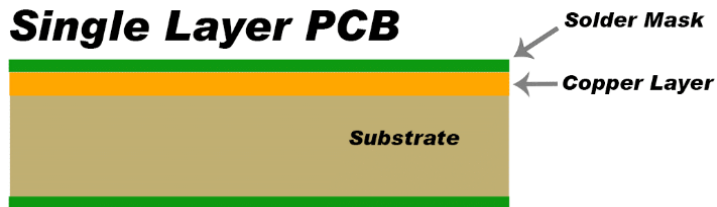
Aluminum, Copper-invar-copper, ceramic, etc.



Single layer pcb

Two layer pcb

Multi layer pcb

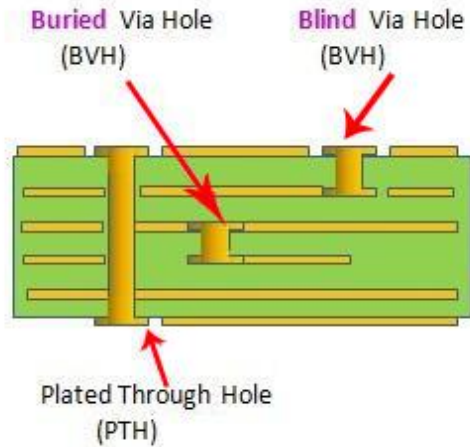


Multilayer PCB

02 PCB CLASSIFICATION

03

BY VIAS



- a. Buried via hole board
- b. Blind via hole board
- c. Plated through hole board

02 PCB CLASSIFICATION



BY SURFACE FINISH

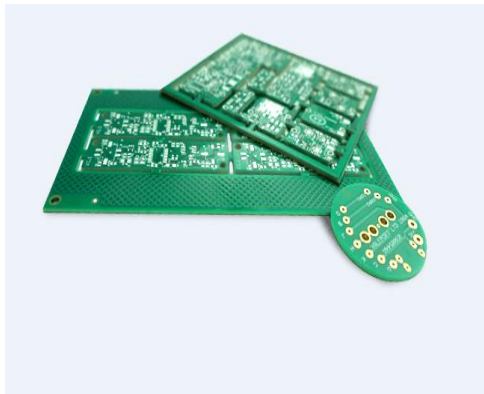
- 1 Hot Air Levelling
- 2 Gold finger board
- 3 Carbon oil board
- 4 Gold plating board
- 5 Entek/OSP
- 6 Immersion gold
- 7 Immersion Tin
- 8 Immersion Silver

02 PCB CLASSIFICATION

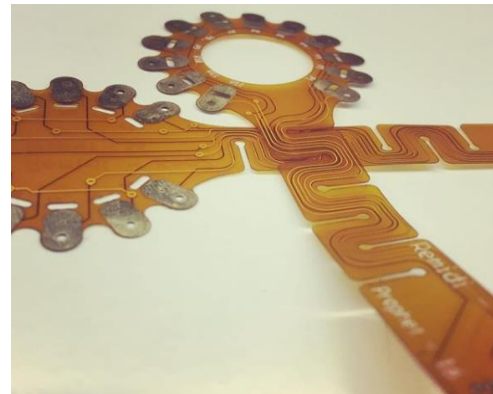
05

BY HARDNEDD

Rigid pcb



Flexible pcb



Rigid-Flex pcb

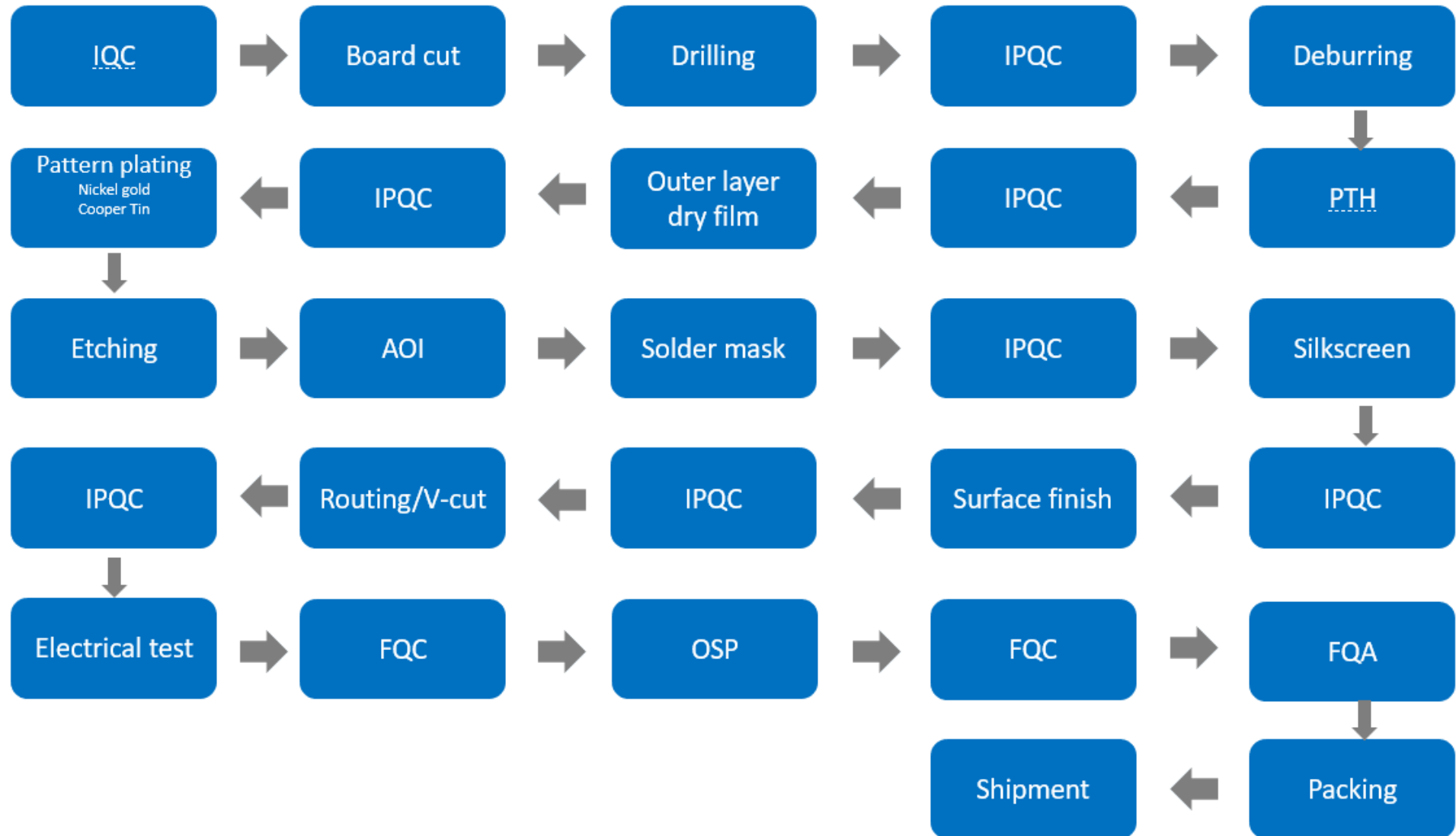


03

**PCB
MANUFACTURING
PROCESS**

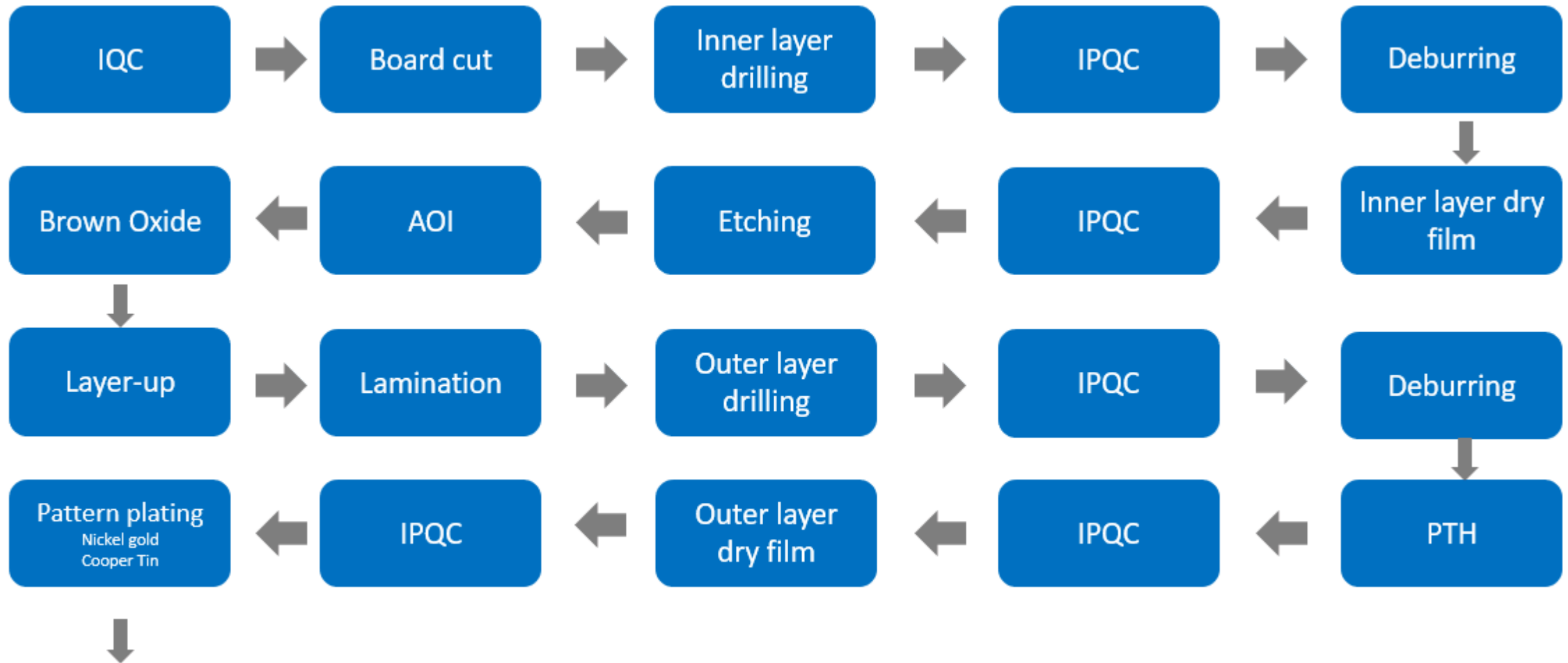
03 PCB manufacturing process

Double sided PCB manufacturing process

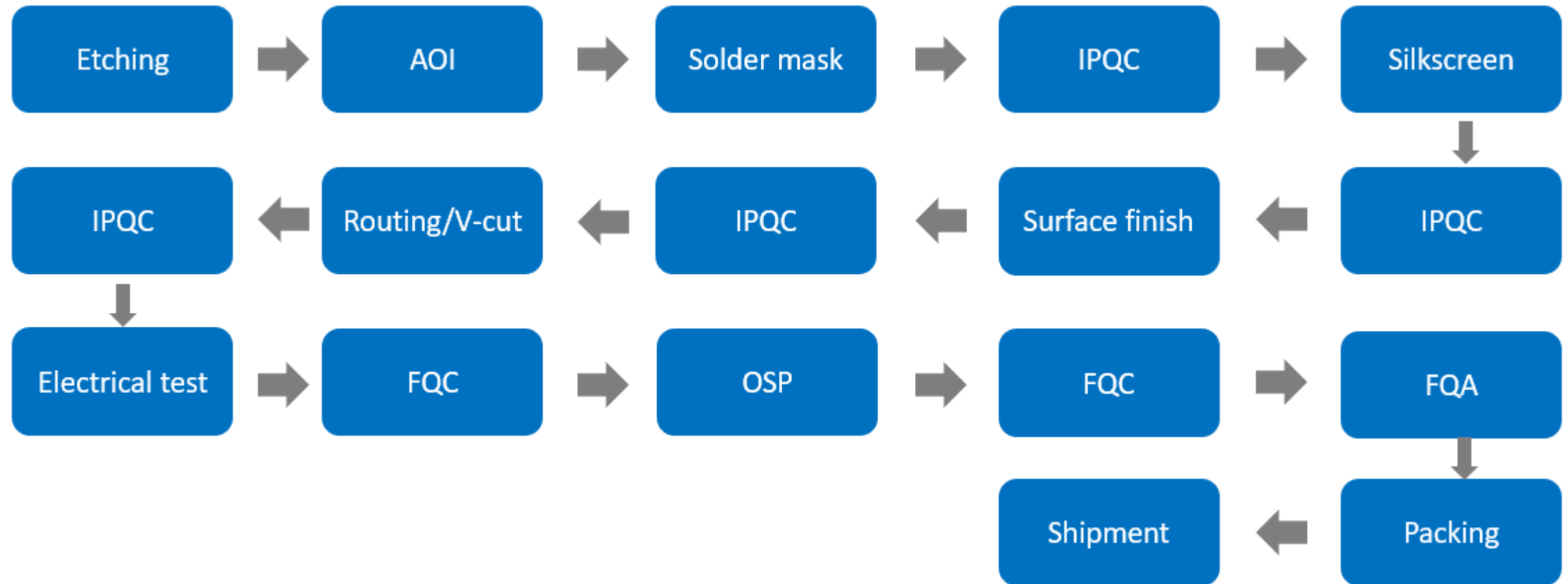


03 PCB manufacturing process

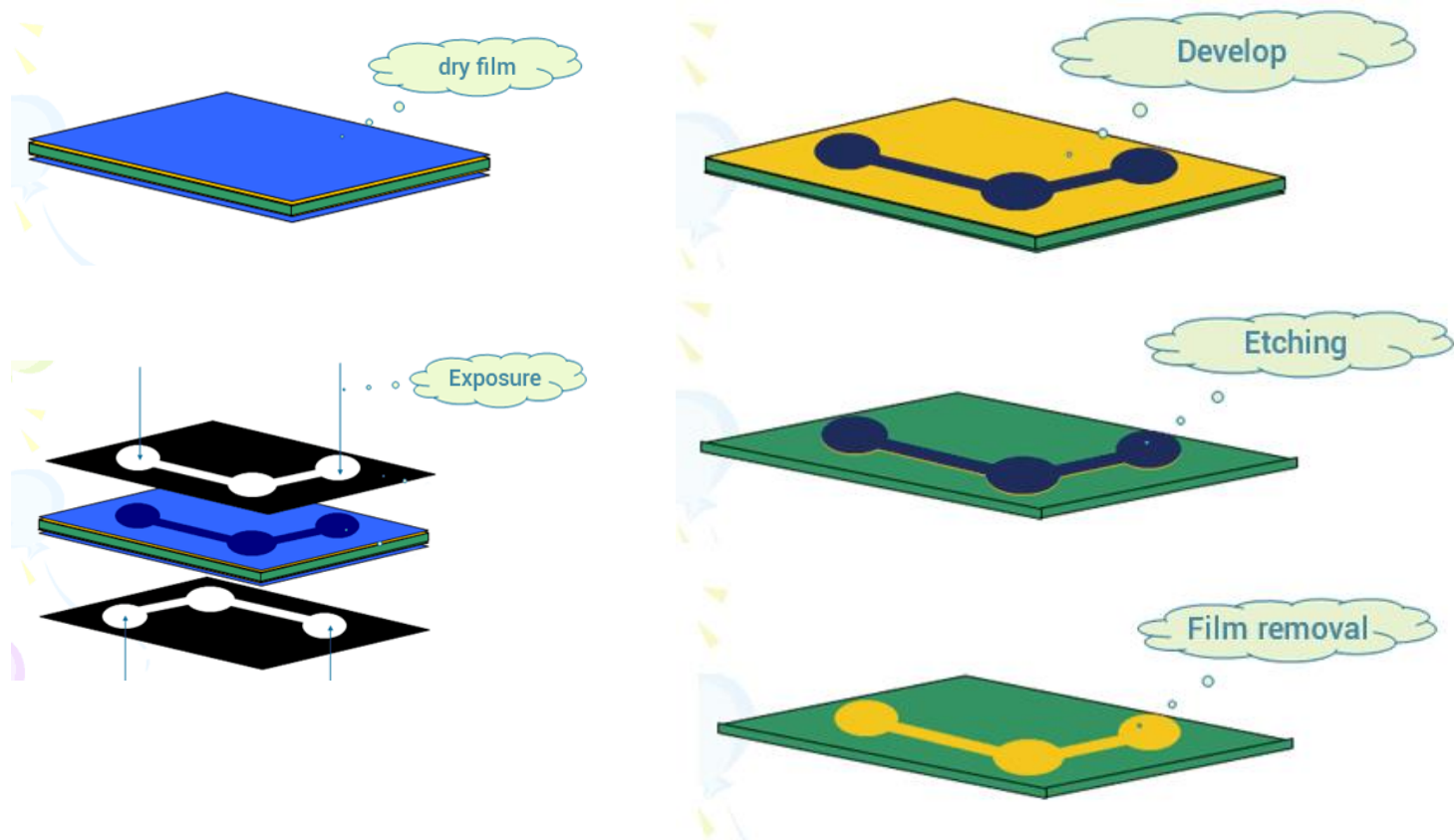
Multilayer PCB manufacturing process



03 PCB manufacturing process

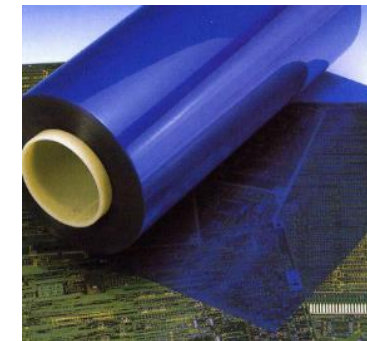


03 PCB manufacturing process



Dry film/ image transfer

Dry film is a kind of polymer compound, which can produce polymerization after irradiation of ultraviolet rays. Then will form a stable substance attached to the board surface, so as to achieve the function of blocking plating and etching.



03 PCB manufacturing process

Etching

Etching is using chemical way to remove unwanted copper from pcb. Then the circuit is appeared, usually acid is used to etch .

Brown Oxide

Making chemical oxidation of copper surfaces to generate oxides on the surface to increase roughness. It will improve adhesion.

03 PCB manufacturing process

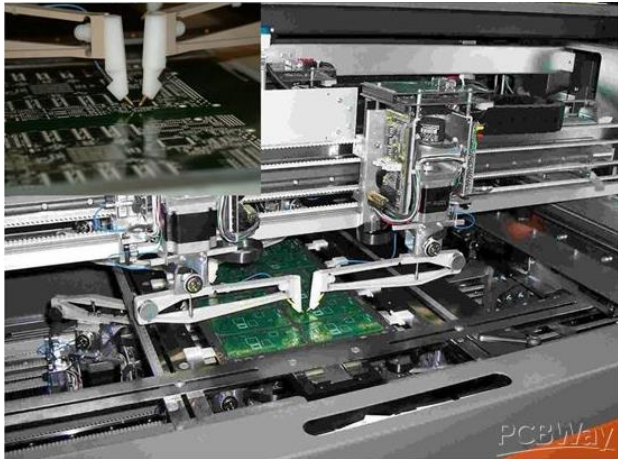


AOI

Automated optical inspection (AOI) is an automated visual inspection of printed circuit board manufacture where a camera autonomously scans the device under test for both catastrophic failure (such as missing component) and quality defects.

It is commonly used in the manufacturing process because it is a non-contact test method. This guarantees the high reliability of Multi-CB multilayer circuit boards.

03 PCB manufacturing process



Electronic test/probe test

Combine Automatic optical alignment system and the traditional flying needle machine together , with the help of image-processing software and flying-pin-only cameras, flying probe test is easier and more accurate.

The layout is analysed according to the pcb file for short circuits and interruptions. This is important because only the E-test detects incorrect and broken conductors. And the detected defective circuit board will be marked.

Check <https://www.youtube.com/watch?v=3wtkQx66mxk>

03 PCB manufacturing process

Note: This flow is based on the most common pcb manufacturing process . Sometimes the manufacturing process will be adjusted accordingly to your pcb design requirement .

PCBWay

The logo for PCBWay features the text "PCBWay" in a bold, green, sans-serif font. A thick, orange, curved underline is positioned beneath the text, starting under the 'P' and ending under the 'y'.

PCB prototype easy way