

Design for Test Guidelines

Testpoint Types and Sizes

Testpoint Types

Testpoints should preferably be square or circular pads.

Vias can be used as testpoints, as long as the hole is not greater than 20mil (0.5mm).

Through-hole pads can also be used. If the component is populated, the leads should be trimmed to a uniform height, preferably less than 60mil (1.5mm).

Testpoint Sizes

Testpoints should have a diameter of 40mil (1mm).

- Preferred Diameter: $\geq 40\text{mil}$ (1mm)
- Minimum Diameter: 32mil (0.8mm)

Larger diameter testpoints increase the reliability of the fixture, so use the largest size pads that the PCB design can accommodate.

PCB Alignment

Tooling Holes

2 or more tooling holes of $\geq 2\text{mm}$ diameter are preferred to accurately locate the board. These holes should not be plated.

Mounting Holes

Mounting holes can also be used to locate the DUT, it's preferred for these holes to not be plated.

Board Outline

Dowel pins can be placed around the outside of the board to help with alignment. This method is not preferred but can be used if tooling or mounting holes are not available.

Testpoint Placement

Testpoint Spacing

Testpoints should preferably be placed at least 1.91mm away from each other.

- Preferred Spacing: $\geq 75\text{mil}$ (1.91mm)
- Minimum Spacing: 50mil (1.27mm)

Testpoints must be placed at least 125mil (3.175mm) from the edge of the PCB.

Single-Sided and Double-Sided Probing

All testpoints should be placed on the same side of the PCB. If all testpoints cannot be placed on the same side, dual-sided probing is an option, however, this will increase the complexity and cost of the fixture.

Testpoint Distribution

Testpoints should be distributed evenly across the entire PCB. Areas of high probe density should be avoided as this may cause flexing of the PCB.

Pressure Pins

Space must be left on the top side of the DUT for pressure pin.

Tip Diameter

Typical tip diameter is 2.5mm, 6mm tips can also be used.

Placement

Pressure pins need to be placed evenly across the PCB. They cannot be placed near any components that are taller than 125mil (3.175mm).