

PCBA DFM Checklist — 15 Things to Check Before Production

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☐ **01 Trace / space within capability**

Pass: Every net $\geq 4/4$ mil (0.10 mm) or confirmed with your assembler first.

☐ **02 Board-edge clearance**

Pass: No copper or components within 3 mm of any edge (5 mm if V-scored).

☐ **03 Fiducials placed**

Pass: 3 global fiducials (1 mm bare copper, mask-free) + local fiducials for < 0.5 mm pitch parts.

☐ **04 Panel rails / tooling holes**

Pass: Boards < 50 mm wide panelized with 5 mm rails and tooling holes for the SMT line.

☐ **05 Copper balance**

Pass: Pour distribution roughly symmetric across layers — prevents reflow warpage.

☐ **06 Symmetric pads on small passives**

Pass: 0201/0402 pads identical geometry and thermal relief both ends — no tombstoning.

☐ **07 Solder mask slivers**

Pass: ≥ 3 mil (0.075 mm) mask web between pads; thinner slivers lift and bridge.

☐ **08 Via-in-pad on BGA / QFN thermal pads**

Pass: Vias filled and capped (or tented) — never open vias in a solder pad.

☐ **09 Fine-pitch pads are mask-defined or NSMD by design**

Pass: Pads < 0.5 mm pitch: consistent NSMD strategy, mask expansion per fab spec.

☐ **10 Polarity and pin-1 marking**

Pass: Silk pin-1 / polarity marks outside the pad area, visible after assembly.