

Purbeck Electronics PCB Panelisation Rules

The following rules will give a preferred design for step and repeated PCB panels.

The Maximum preferred panel size for boards that have surface mount devices is 300mm x 230mm.

We can accommodate panel sizes up to 510mm x 460mm if necessary. But due to the complexities involved in assembly with these sizes, authorisation must be received in writing from Purbeck before supplying these larger panels.

Please ensure that as many circuits as possible are included per panel, up to the maximum panel size, without compromising these rules or the panel rigidity.

Panel details

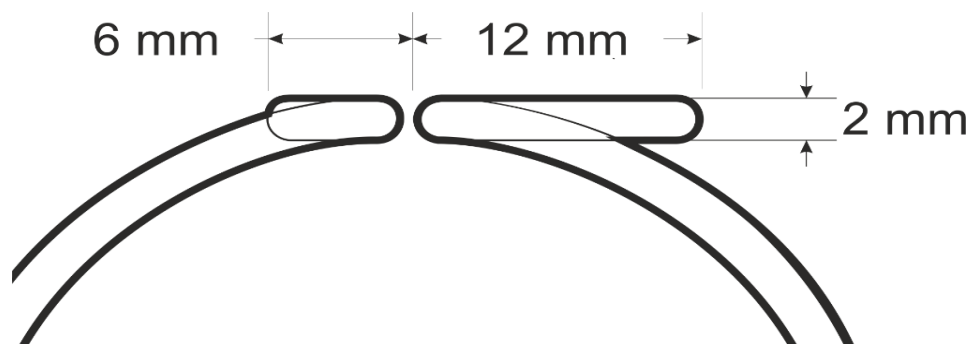
- A handling border must be included on all panels. This border should be on all four sides and should be a minimum of 10mm wide, not including rout width.

The borders should still have copper and solder resist on them, to protect the fiducials. The copper can be patterned such as cross-hatch, strips, dots or any similar pattern.

- For PCBs thinner than 1mm please do not exceed 160mm width where possible, and include hatched copper area in the salvage edge.
- Where viable, panels should be v-scored rather than routed.
- Where routed, the positions of breakout points are at the discretion of the supplier unless otherwise specified.

Sub-flush breakouts incorporating “rat bites” that break out within the board profile thus eliminating the need to finish are preferred, but their positions need to be approved by Purbeck and their customer. Standard breakouts that leave material outside the board profile and must be finished flush are acceptable if the board is not suitable for the “sub-flush” option. Both must be sufficient such that the panel is rigid enough for manufacture.

Breakouts on curved edges should be avoided if possible, but if they are necessary a straight section of rout is needed to allow for breaking them out. Please see the sketch below:



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- Fiducial Marks are required on all panels along the longest length of the handling border.

Preferred fiducials are 1mm diameter within a 4mm diameter resist clearance, these are to be positioned at all four corners of the panel. Centred 15mm x 5mm from the corner on the left-hand side of the panel, and 20mm x 5mm from the right-hand side of the panel. For double-sided PCBs, this applies to both sides of the panel. See Fig 1 at the end of this document.

- Tooling holes are required on all panels. 4mm diameter holes are to be positioned 5mm in from all four corners of the panel, in the handling border. See Fig 2 at the end of this document.
- *Note for PCB designers:* Where possible at the design stage place fiducials in opposite corners of QFP's & BGA's. This is not a requirement but can help in the manufacturing process.
- *Panel designs are to be approved by Purbeck before manufacture commences.*
- Gerber files with all layers should be included in the step and repeat data, which must also include panel fiducials. These should be returned to Purbeck as soon as possible to allow for stencil manufacture concurrent with PCB manufacture.
Please supply fully generated gerber files for the panel, not a single image with placeholders, this file is used in the manufacturing process.
- Purbeck will accept crossed-out circuits within panels but prior written or verbal notice should be confirmed because this can slow the assembly time down, depending of quantities of crossed circuits.
- Omissions in the quote or manufacture of the PCB's from this document are the responsibility of the supplier and shall, if necessary be rectified at their expense.
- If you are unable to comply with any elements of this specification then please advise Purbeck as soon as possible.

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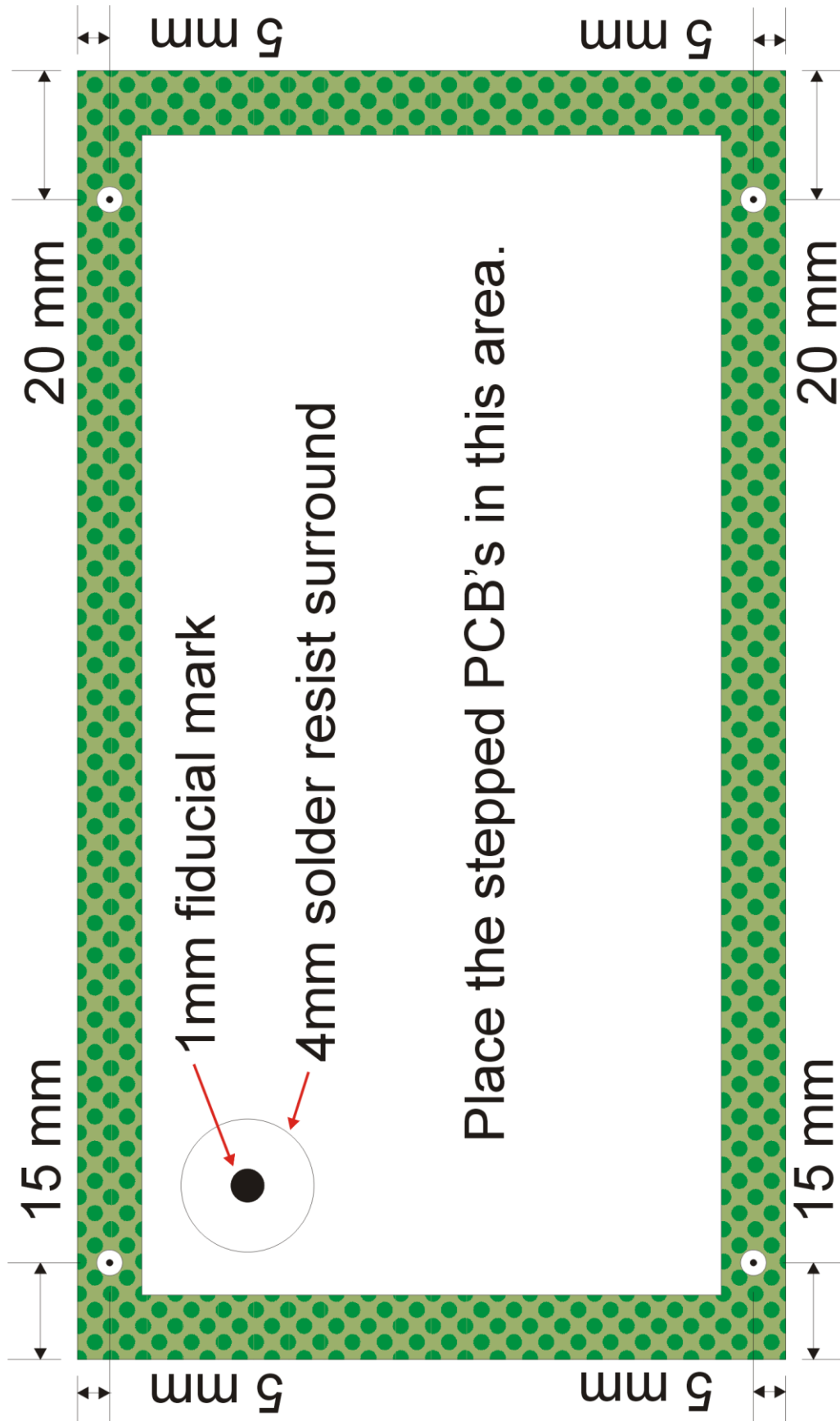


Fig 1. Preferred Panel Fiducial Layout

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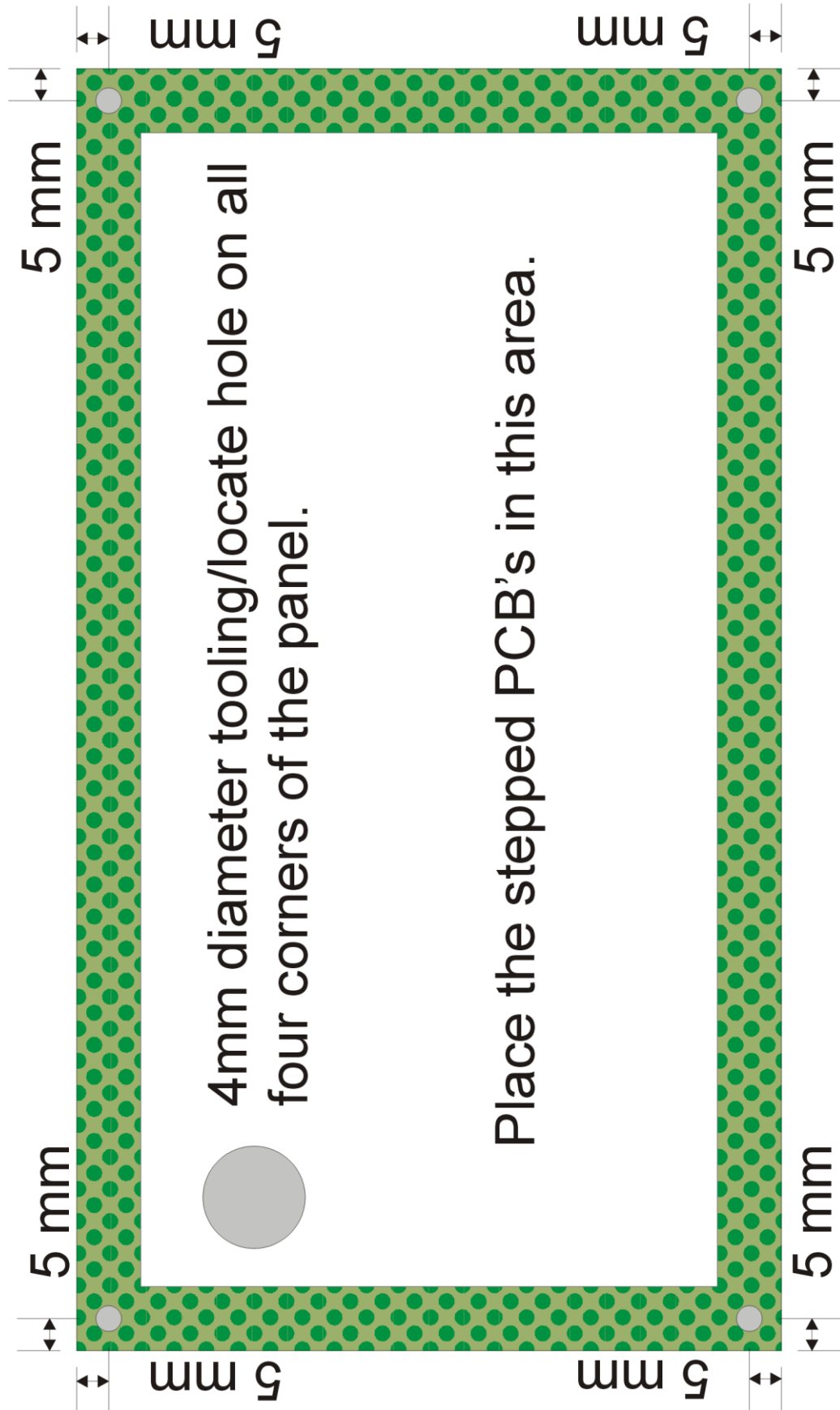


Fig 2. Preferred Panel Tooling Layout