Copper Pours and Via Stitching

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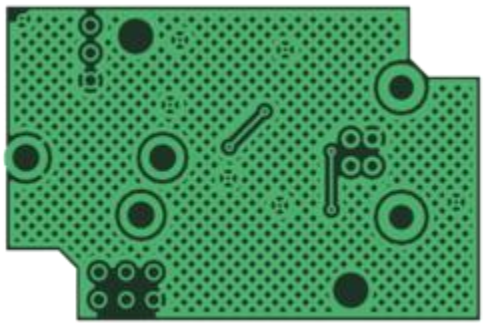
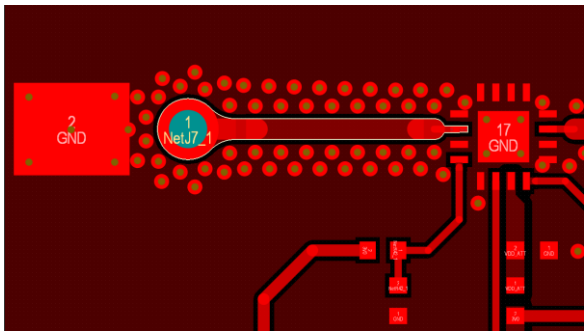
Copper pours



Copper pours are regions where copper is placed which help in grounding, saving etching fluid, carrying large amounts of current and dissipating heat. Nevertheless, they must be well grounded to avoid electromagnetic interference issues which they actually do help to reduce as they provide a shielding effect. Resonant cavities may form as well.

Via stitching



Via stitching is done by placing several vias between copper planes to connect ground nets on different layers. They are used for power connections from layer to layer and for RF design. Moreover, they also provide a path to ground, minimize EMI and help decrease temperature difference. However, resonances may still occur as a result of improper placement of vias.

How are they used together?

Copper pours are used in creating ground planes and power planes then via stitching is applied by inserting vias around or inside the copper pours. This forms a ground path or a power path and includes the benefits mentioned previously like reducing EMI. Together they can also supress resonances formed in larger regions of copper and they both allow heat to spread away from components that may be affected by the heat. In addition, they decrease signal identity issues as using them with each other decreases impedance between layers.