

# SMTpads - surface mount proto PCBs



Square and rectangular “sea-of-pad” grids for 0402, 0603, 0805, 1206, SOICs and other SMT parts.

## Features

A “sea of pads” pattern allows SMT components of various sizes and pitches to be mounted. Larger components can span pads.

Bridge pads or solder wires on pads to create traces wherever they are needed.

### 3 Patterns Available

50x50 = 50 mil (0.050”) square pads

100x100 = 100 mil square pads

100x200 = 200 x 100 mil rectangular pads

### 3 Sizes Available

Size 1 = 50 x 80mm (1.97 x 3.15in)

Size 2 = 100 x 80mm (3.94 x 3.15in)

Size 3 = 100 x 160mm (3.9 x 6.3in)

SOIC (50 mil pitch) can be soldered directly to 50x50 pad pattern without adapters. DIP (100 mil pitch) ICs can be used with all.

Solid ground plane on reverse side provides easy ground connections and help achieve low noise in circuits.

Unplated holes to the ground plane are spaced 4 pads apart for easy connection to the ground plane. Just insert a wire and solder both sides.

Lead free etched copper PCB with an anti-tarnish coating to preserve solderability. RoHS compatible.

## Specifications

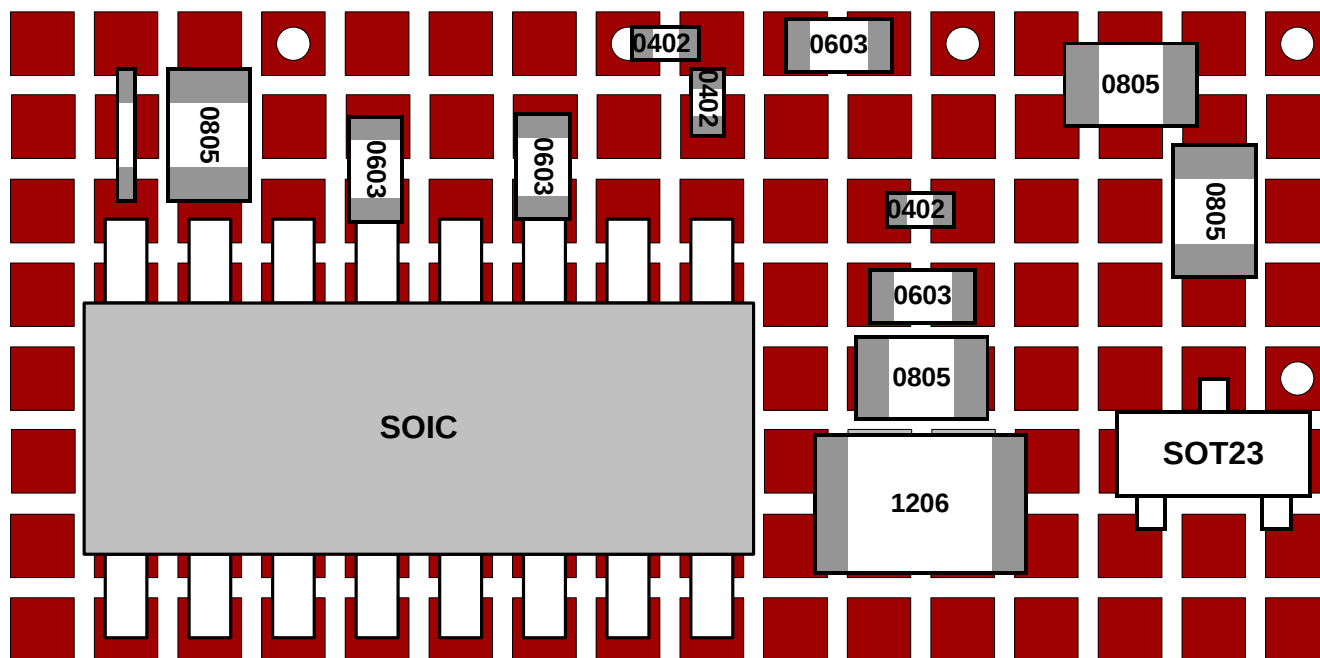
High-quality etched FR4 glass-epoxy circuit board.

1oz/ft<sup>2</sup> copper with an anti-tarnish coating for easy soldering. Lead free and RoHS compatible.

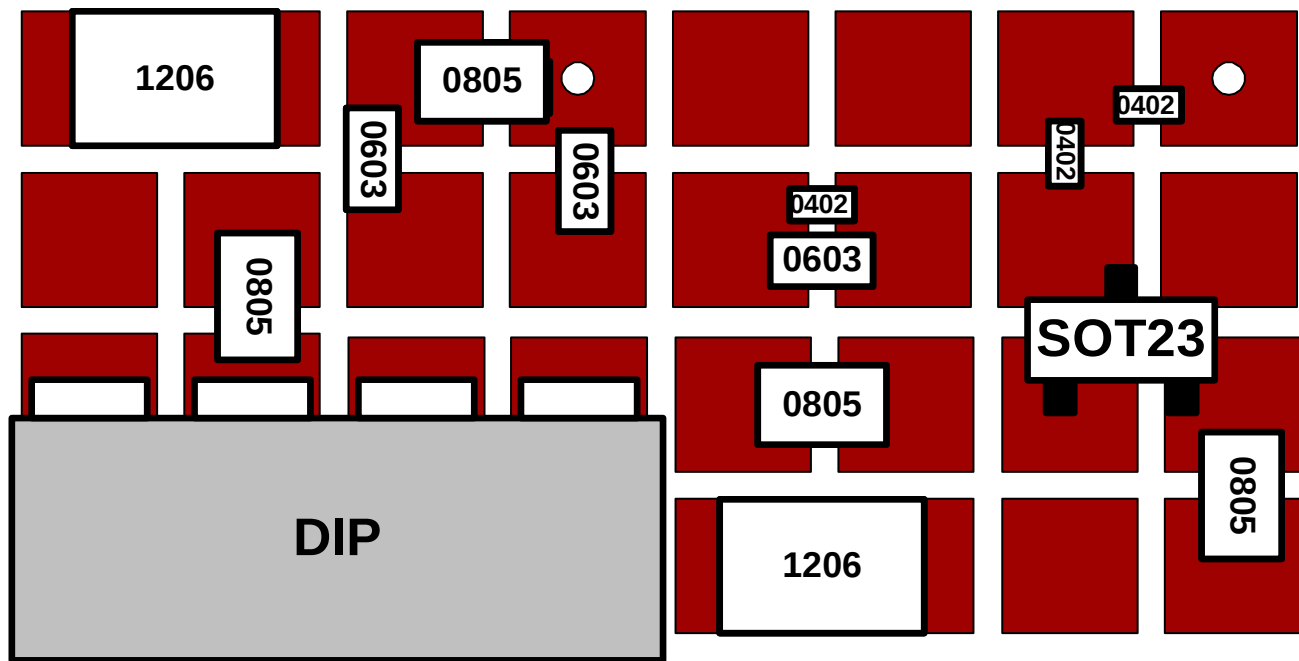
0.031" (0.79mm) holes (unplated) for connections to ground plane or pads on the opposite side (see plated option section).

**Please see table on page 3 for BPS part #'s.**

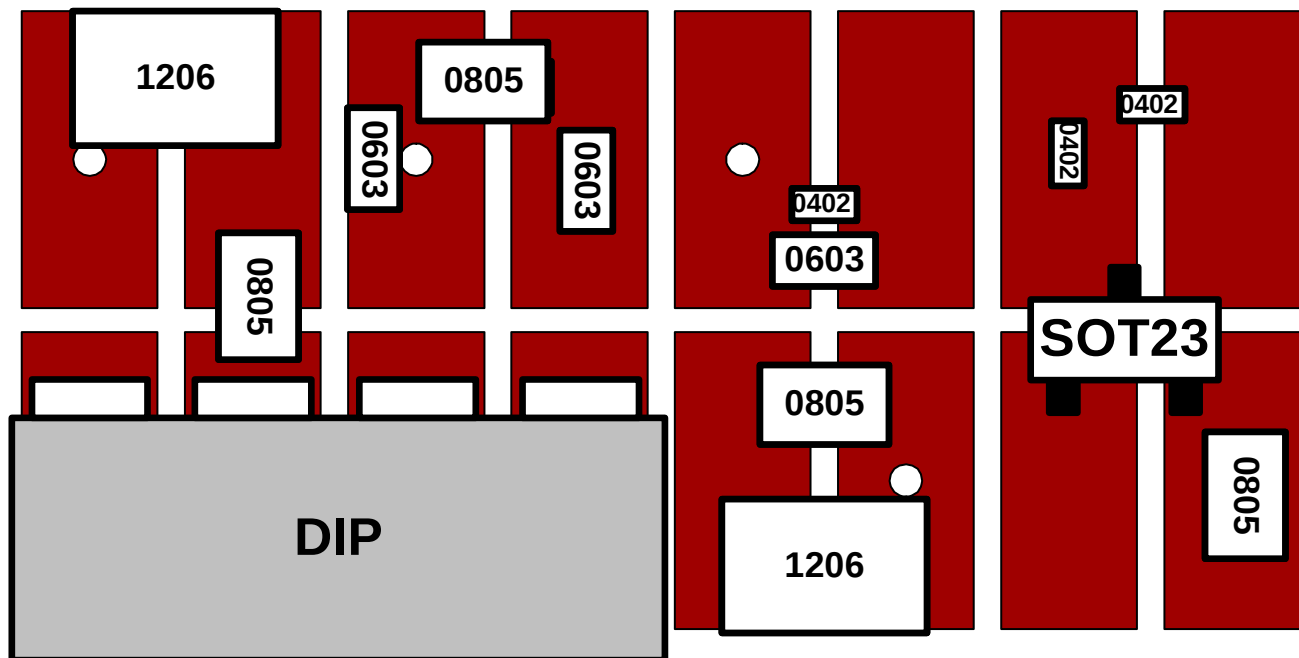
## 50x50 Board Pattern – Grid of 42 mil square pads on 50 mil centers



**100x100 Board Pattern** – Grid of 92 mil square pads on 100 mil centers



**200x100 Board Pattern** – Grid of 180 x 80 mil rectangular pads on 100 mil centers



## **BPS SMT Board Part Numbers**

| Part#            | Size  | Description                                                                                 | Thick |
|------------------|-------|---------------------------------------------------------------------------------------------|-------|
| SP1-50x50-G      | Size1 | SMTpads-Size1, 50x50mil Pads, Unplated Holes, 1/16" Thick                                   | 1/16" |
| SP2-50x50-G      | Size2 | SMTpads-Size2, 50x50mil Pads, Unplated Holes, 1/16" Thick                                   | 1/16" |
| SP2-50x50-2S     | Size2 | SMTpads-Size2-2sided, 50x50mil Pads on 2 Sides, Unplated Holes, 1/16" Thick                 | 1/16" |
| SP3T-50x50-G     | Size3 | SMTpads-Size3U-Thin, 50x50mil Pads, Unplated, <b>1/32" Thin (formerly SP3UT)</b>            | 1/32" |
| SP3T-50x50-G-PTH | Size3 | SMTpads-Size3U-Thin, 50x50mil Pads, <b>Plated Holes, 1/32" Thin</b>                         | 1/32" |
| SP1-100x100-G    | Size1 | SMTpads-Size1, 100x100mil Pads, Unplated Holes, 1/16" Thick                                 | 1/16" |
| SP2-100x100-G    | Size2 | SMTpads-Size2, 100x100mil Pads, Unplated Holes, 1/16" Thick                                 | 1/16" |
| SP3-100x100-G    | Size3 | SMTpads-Size3U, 100x100mil Pads, Unplated Holes, 1/16" Thick                                | 1/16" |
| SP1-200x100-G    | Size1 | SMTpads-Size1, 200x100mil Pads, Unplated Holes, 1/16" Thick                                 | 1/16" |
| SP2-200x100-G    | Size2 | SMTpads-Size2, 200x100mil Pads, Unplated Holes, 1/16" Thick                                 | 1/16" |
| SP3-200x100-G    | Size3 | SMTpads-Size3U, 200x100mil Pads, Unplated Holes, 1/16" Thick                                | 1/16" |
| SMT3U            | Size3 | SMTboard-Size3, <b>SOIC Footprints</b> , 200x100mil Pads, Unplated Holes, 1/16" Thick       | 1/16" |
| SMT3U-PTH        | Size3 | SMTboard-Size3, <b>SOIC Footprints</b> , 200x100mil Pads, <b>Plated Holes</b> , 1/16" Thick | 1/16" |
| SMT3UT           | Size3 | SMTboard-Size3-Thin, <b>SOIC Footprints</b> , 200x100mil Pads, Unplated, <b>1/32" Thin</b>  | 1/32" |

See the SMT3U datasheets for more information on those boards.

### **2-Sided Pads (2S Option)**

Most boards have a solid ground plane on the bottom side. This makes it easy to make ground connections and it helps to achieve low noise in circuits.

The **SP2-50x50-2S** board has square pads on both sides to allow components to be mounted on both sides.

### **Thin PCB (T option)**

Most SMT Pads boards are 1/16" thick (1.6mm).

Some boards are available in a 1/32" thin (0.8mm) version. See the part# table for thicknesses.

### **Plated Holes (PTH Option)**

Most SMT Pads boards have unplated holes so that the top pad can be used for any purpose. The pad can then be connected to ground only when a ground connection is needed by inserting a wire and soldering both sides.

Some designers prefer to have all of the vias connected to the ground plane, and the Plated option boards were created for this purpose. The **SMT3U-PTH** and the **SP3T-50x50-G-PTH** boards have plated holes connecting top side pads to the ground plane.

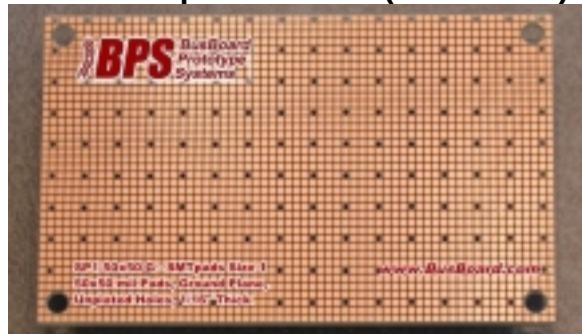
Note: **SP3UT-PTH** was the previous name of the **SP3T-50x50-G-PTH** board. They are the same board.

The plating can be drilled out with a small bit to disconnect the pad from ground plane if required.

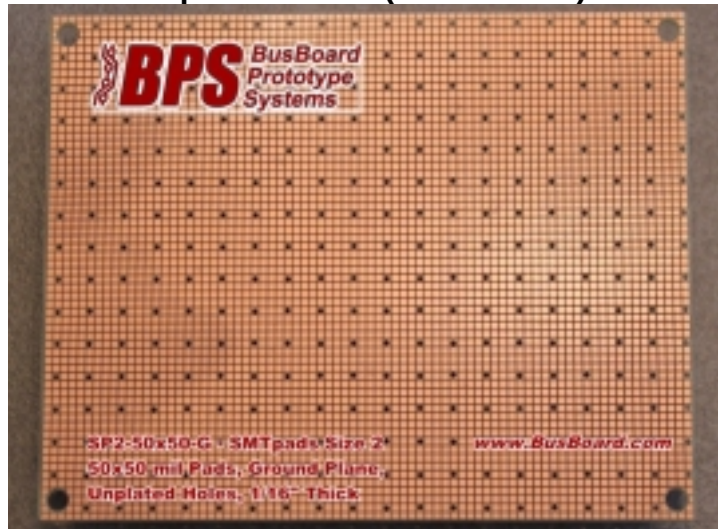
**Tip:** It is easier to use a larger bit to remove the plating around the edge of the hole than to drill all the way through with a small bit.

## SMT Pads Photos

50 x 50 mil pads - Size 1 (50 x 80mm)



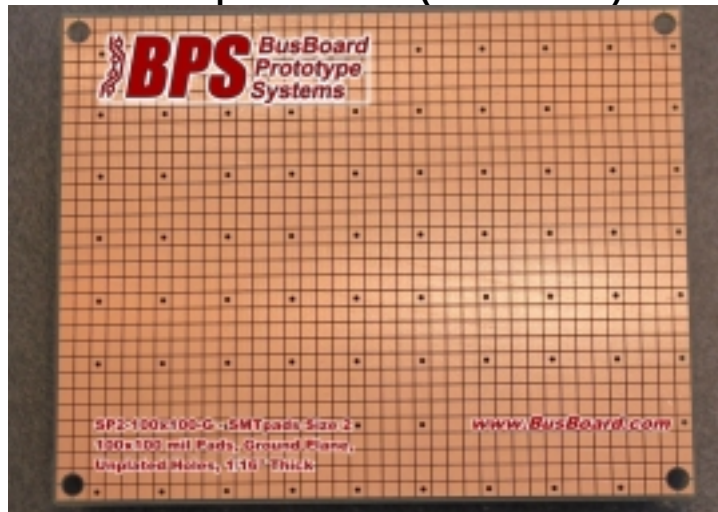
50 x 50 mil pads - Size 2 (100 x 80mm)



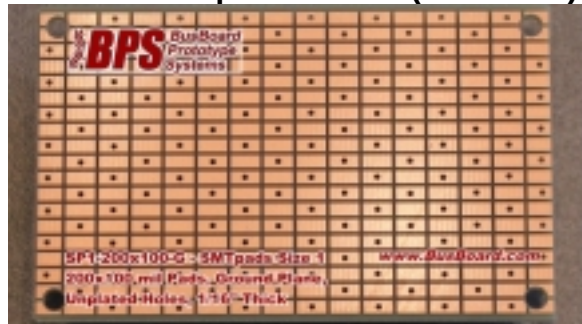
100 x 100 mil pads -Size 1 (50x80mm)



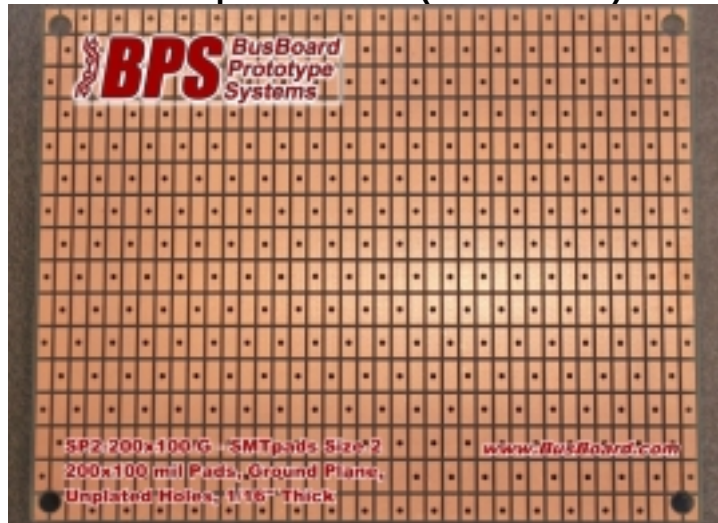
100 x 100 mil pads - Size 2 (100 x 80mm)



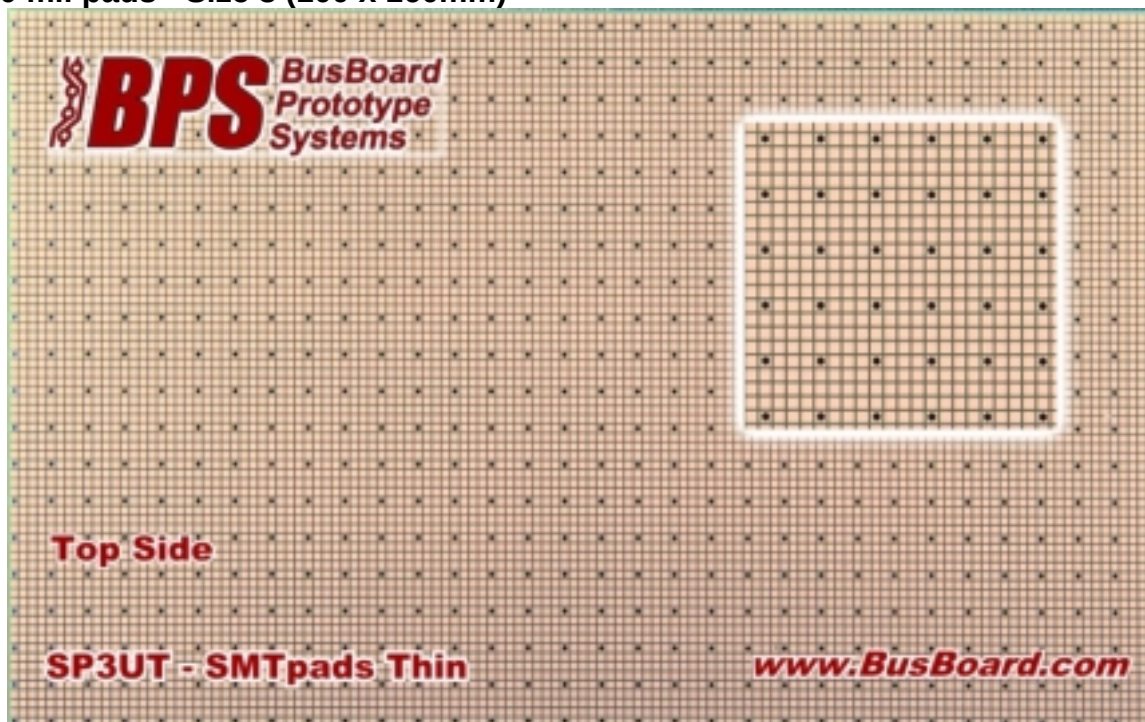
200 x 100 mil pads -Size 1 (50x80mm)



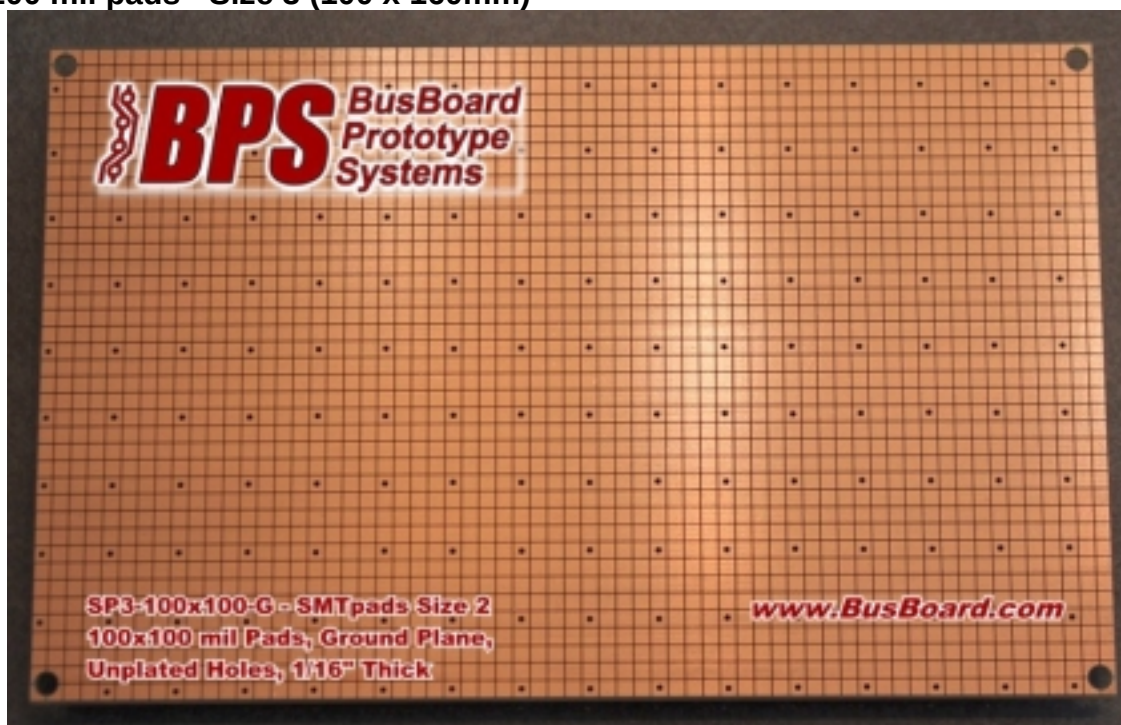
200 x 100 mil pads - Size 2 (100 x 80mm)



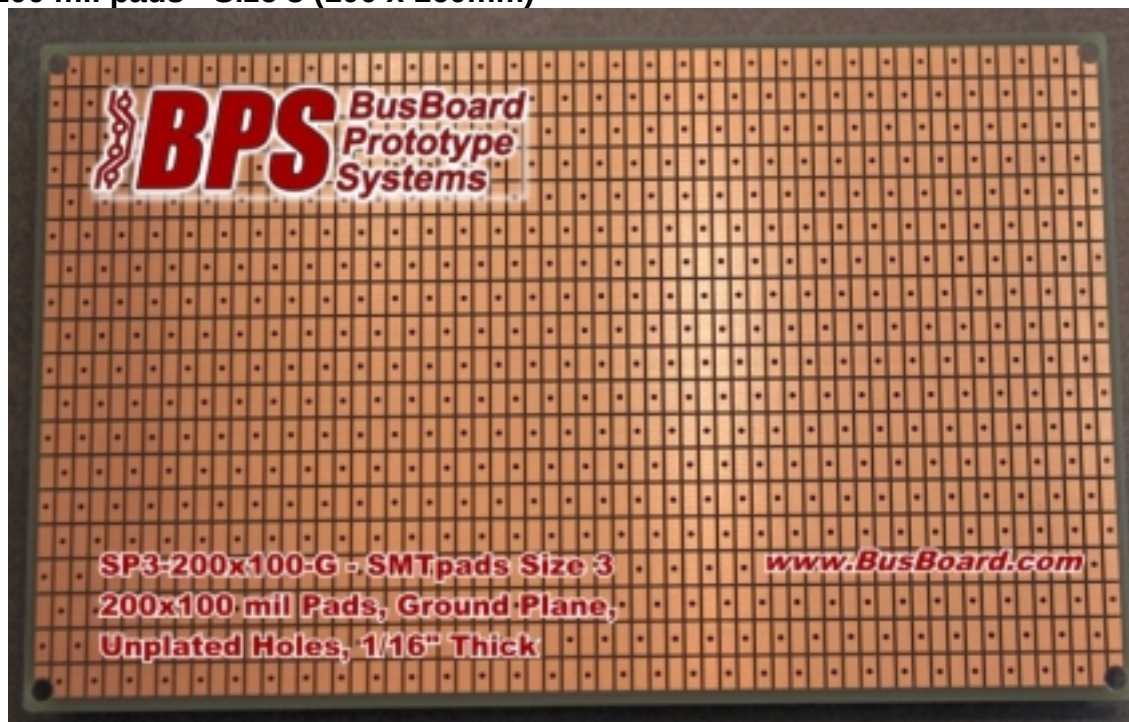
50 x 50 mil pads - Size 3 (100 x 160mm)



100 x 100 mil pads - Size 3 (100 x 160mm)



200 x 100 mil pads - Size 3 (100 x 160mm)



Bottom Ground Plane Example (SP3T-50x50-G Shown, Formerly SP3UT)



## **SMT Board Construction Tips**

1. Insert 22AWG solid wire in a hole and solder both sides to make a connection from the top side to the bottom.
2. Solder down one strand of 22 AWG stranded wire to make tracks where you need them. Use solid 22 AWG wire for higher current power and ground tracks.
3. **Cutting PCBs** – Thin 1/32” boards can be cut with ordinary scissors.

Standard thickness 1/16” FR4 can be cut with good metal shears.

Standard thickness 1/16” FR4 can also be scored deeply on both sides with an X-actco knife and snapped. Score it 3 or 4 times on both sides to get a deep cut. Use a good quality knife for safety reasons and to get good results. A metal ruler can help to score accurately.

For thru-hole PCBs, scoring along a row of holes makes it much easier to snap the scored PCB.

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