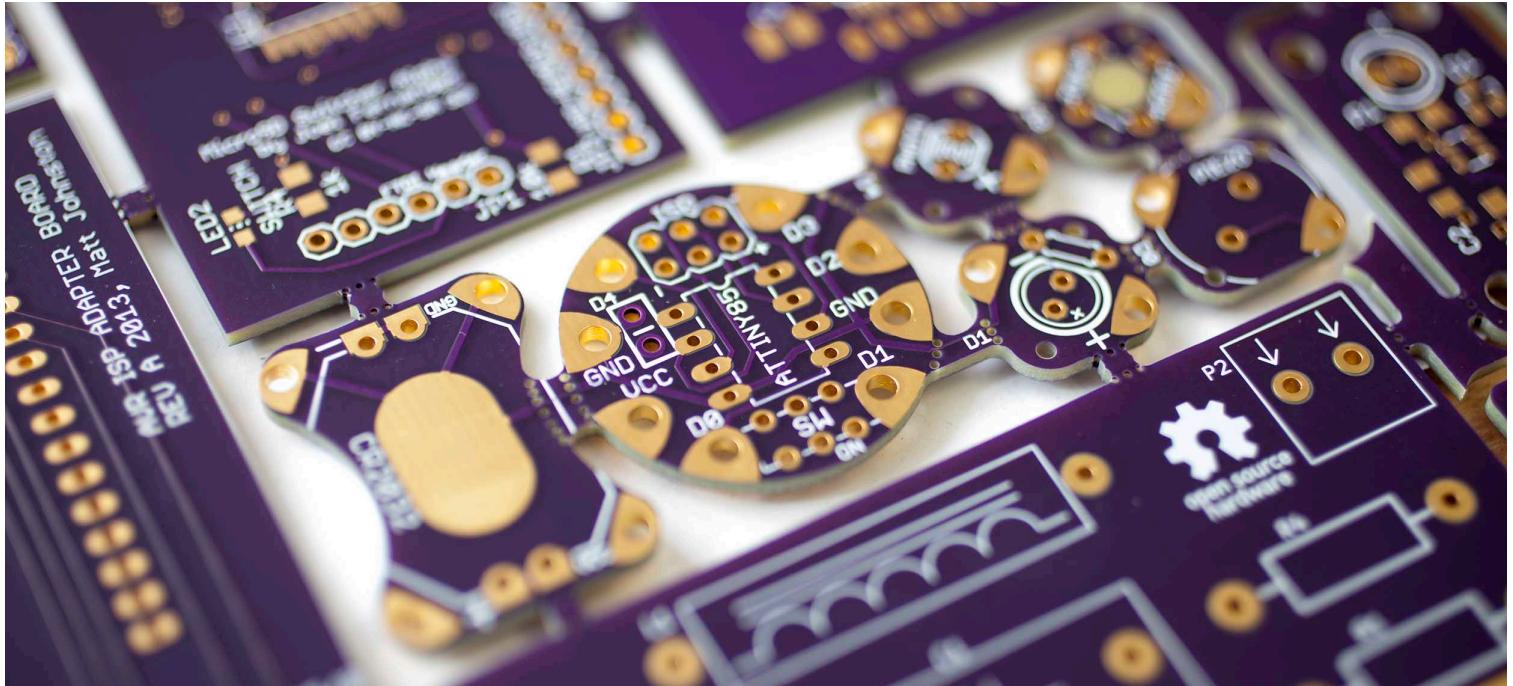


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## 2 Layer Prototype Service

Our famous 2 layer purple prototype production.

### Pricing

\$5 per square inch, which includes three copies of your design. For example, a 2 square inch board would cost \$10 and you'd get three copies of your board. You can order as many copies as you want, as long as they're in multiples of three.

### Turn Times

Orders are sent to fabrication daily, and will ship within 9-12 calendar days. 90% of our 2 layer orders ship in 10 calendar days.

You can get a quote, approve a design, and pay for an order at [OSH Park](#).

For a faster turn time, you may be interested in our [Super Swift Service](#).

For thinner, lighter, or high current boards, you may be interested in our [2oz-0.8mm Service](#).

Need more than 100 square inches of boards? Our [2 Layer Medium Run Service](#) is a less expensive option for larger orders.

## Common Specs

These specs apply to all our PCB services.

| Spec                              | Value   |
|-----------------------------------|---|
| Manufactured in the United States | Yes   |
| Lead Free compatible              | Yes   |
| RoHS Compliant                    | Yes   |
| High Temp                         | Yes, 175 Tg or higher (see Material Specs)      |
| PCB Finish                        | ENIG (Gold), compliant with IPC-4552            |
| Soldermask Type                   | SMOBC (Soldermask Over Bare Copper), both sides |
| Silkscreen Type                   | High Res DLP, both sides                        |

## Stackup

| Thickness          | Layer         | Tolerance             |
|--------------------|---------------|-----------------------|
| 1mil (0.0254mm)    | silkscreen    | +/-0.2mil (0.00508mm) |
| 1mil (0.0254mm)    | solder resist | +/-0.2mil (0.00508mm) |
| 1.4 mil (0.0356mm) | 1 oz copper   |                       |
| 60 mil (1.5240mm)  | core          | +/-6mil (0.1524mm)    |
| 1.4 mil (0.0356mm) | 1 oz copper   |                       |
| 1mil (0.0254mm)    | solder resist | +/-0.2mil (0.00508mm) |
| 1mil (0.0254mm)    | silkscreen    | +/-0.2mil (0.00508mm) |

## Material Specs

| Spec | Value |
|------|-------|
|------|-------|

|                               |   |   |
|-------------------------------|---|---|
| Substrate                     | 175Tg FR4   | <a href="#">Kingboard KB6167F Datasheet</a> |
| Board Thickness               | 63mil (1.6mm) nominal   |   |
| Dielectric                    | 4.5 at 10Mhz  |   |
| Soldermask Color              | Purple  | <a href="#">Mask Datasheet</a>              |
| Minimum soldermask web        | 4 mil (0.1016mm)  |   |
| Maximum soldermask alignment  | 3mil (0.0762mm)   | Covers retraction, expansion, and shift     |
| Silkscreen minimum line width | 5 mil (0.127mm) (recommended minimum)<br>3 mil (0.0762mm) (short lines, text, graphics) | <a href="#">Silkscreen Datasheet</a>        |
| Maximum board size            | 16in (406.4mm) by 22in (558.8mm)  |   |
| Minimum board size            | 0.25in (6.35mm) by 0.25in (6.35mm)  |   |

## Copper Specifications

| Spec                  | Value                                 |
|-----------------------|---------------------------------------|
| Copper Layers         | 2                                     |
| Copper Weight         | 1oz                                   |
| Trace Spacing         | 6mil (0.1524mm)                       |
| Trace Width           | 6mil (0.1524mm)                       |
| Annular Ring          | 5mil (0.127mm)                        |
| Board Edge Keepout    | 15mil (0.381) from nominal board edge |
| Via Plating Thickness | 1mil (0.0254mm)                       |

## Drill Specifications

| Spec                       | Value  |
|----------------------------|--|
| Minimum Annular Ring       | 5mil (0.127mm)   |
| Minumum Drill Size         | 10mil (0.254mm)  |
| Minimum Slot Size          | 20mil (0.508mm) (drill slot only)                          |
| Drill Size tolerance       | Max: +/- 2.5mil (0.0635mm)<br>Typical: +/- 1.0mil (0.0254) |
| Drill Positional Tolerance | Max: 2mil (0.0508mm)<br>Typical: <1mil (0.0254mm)          |
| Via Tenting                | Yes (filled hole and flat surface not guaranteed)          |

|                                 |   |   |
|---------------------------------|---|---|
| Buried Via                      | No  |   |
| Blind Via                       | No  |   |
| Filled+Plated Vias (via-in-pad) | No  |   |
| Overlapping drills              | Allowed, but not guaranteed. May result in missing or slotted holes.<br>5 mil (0.127mm) clearance is recommended between holes. |   |
| Castellations                   | Allowed, but not guaranteed   | <a href="#"><u>Details and recommendations</u></a>                                    |
| Maximum Drill Size              | None  | Drill sizes above 250mil (6.35mm) will be fabbed, but with larger milling tolerances. |

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