

Breakaway Tabs

Occasionally, you'll want to use breakaway tabs in your PCB to combine a few PCBs into a single physical board that breaks apart.

This guide explains how to use them to your advantage.

1. Obtaining the footprint

Grab the [random-keyboard-parts.pretty](#) library, either adding it to the project or adding it as a submodule (for git users).

Inside, there is a breakaway-mousebites footprint.

2. Placing the footprint

Simply place the footprint where you want the breakaway to be.

For the PCB holistic outline, simply draw on the edge.cuts layer.

For examples, see the [Soyuz](#) and [Orbit](#) PCBs.

3. Considerations

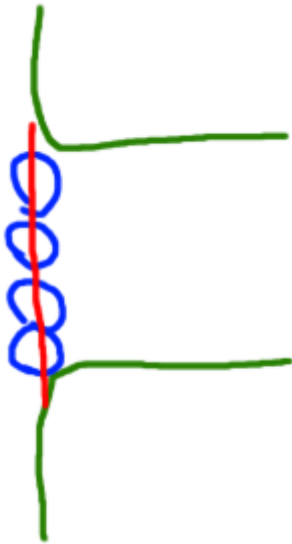
There is no guarantee that every single PCB is manufactured the same.

Leave some space between the breakaway bites and traces/components, for an un-clean snap could tear into such nearby components.

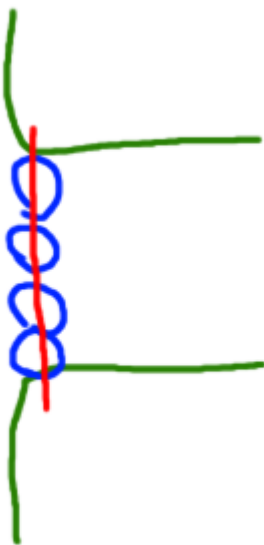
When having multiple breakaway tabs, take care to make it easy to break; for example, have a few "break lines", or lined up tabs so that things break smoothly instead of having to apply strange force and torque to the tabs.

The break usually occurs through the center of the mousebite drills. This means the placement of the mousebites determines how the board breaks apart.

Placing the footprint so the guide line matches up with the break line means that you will have small indents at the break tab, but protrusions will not extend beyond the expected outline. This is the ideal setup for internal things, such as regular PCBs. For example, see the [Orbit repository](#).



On the other hand, placing the footprint so the drills are tangent to the break line means that you will have small protrusions at the cut, but no indents. This may be more ideal for exterior use parts such as plates, since the protrusions can be filed off whereas indents are much more difficult to deal with. For example, see the [Soyuz repository](#).



4. Further reading

<https://www.electronicdesign.com/boards/pcb-designers-need-know-these-panelization-guidelines>

Revision #3

Created 31 March 2019 07:50:02 by ai03

Updated 29 June 2020 01:53:41 by ai03