

Re: Drilling solder paste stencils

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- *From:* "Christopher Ott" <chrisott *at* ottelectronics *dot* com>
 - *Date:* Fri, 29 Sep 2006 16:39:33 -0700
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Even with really sharp drill bits, I suspect the holes would not have clean enough edges to release the paste consistently. Perhaps if you sandwiched the sheet between two boards while drilling it would help with that.

I just measured one of my thicker stencils and it is 6 mils thick. 10 – 16 mils would lay down way too much paste making the self alignment (during reflow) unpredictable. It does depend on the pitch of the parts you're using too. The smallest parts on most of my boards are 50 mil pitch IC's and 0805 passives, and 4–5 mil stencils work fine.

Success would also depend on the flux in your solderpaste. Water washable flux is somewhat tricky as it burns off quickly preventing the dots from flowing over the pad in time. RMA would flow better with round dots and give a better chance of flowing to the whole pad. While it is preferable to cover the whole pad with paste, dot's do work. I have a paste dispenser on my pick n' place which places dots. Reliability is not as good as stencils, but for low volume runs, it works out alright. The most common problem I see with dots is misaligned parts during reflow.

I use Stencils Unlimited for SS laser cut prototype stencils. At \$145 each, they're not all that expensive. Also, if you're going to try making your own, I would suggest using stainless steel sheets instead of brass. Most types of soldering flux will activate the brass.

Good luck, I'd be interested in knowing how it works out.

—
Chris

"oparr" <oparr@xxxxxxxxxxxx> wrote in message
news:1159569449.073558.86450@xx

For large pads multiple holes could be tried.

Even overlapping to some extent.

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Perhaps slightly thicker deposition could make up for the corners.

Instead of an 8 mils sheet one could use 10 – 16 mils depending on the size of the smallest pads (smallest holes). I suspect at some point the paste would rather stick to the walls of the hole rather than the pad as stencil thickness increases.

Boris Mohar wrote:

On 29 Sep 2006 12:15:08 -0700, "oparr" <oparr@xxxxxxxxxxxx> wrote: