Re: Soldering SMT Components

Source: http://sci.tech−archive.net/Archive/sci.electronics.design/2008−04/msg03710.html

- *From*: JosephKK <quiettechblue@xxxxxxxxx>
- *Date*: Tue, 22 Apr 2008 22:51:57 −0700

On Thu, 17 Apr 2008 09:03:30 −0700, Joerg
<notthisjoergsch@xxxxxxxxxxxxxxxxxxxxx> wrote:

> Leon wrote:
>
> > On 17 Apr, 00:47, Joerg <notthisjoerg...@xxxxxxxxxxxxxxxxxxxxx> wrote:
> >
> > > Leon wrote:
> > >
> > > > On 16 Apr, 17:38, Joerg
> > > > <notthisjoerg...@xxxxxxxxxxxxxxxxxxxxx>
> > > > wrote:
> > > >
> > > > > Leon wrote:
> > > > >
> > > > > > On 15 Apr,
> > > > > > 17:47, Joerg
> > > > > > <notthisjoerg...@xxxxxxxxxxxxxxxxxxxxx>
> > > > > > wrote:
> > > > > >
> > > > > > > qrk
> > > > > > > wrote:
> > > > > > >
> > > > > > > > On
> > > > > > > > Mon,
> > > > > > > > 14
> > > > > > > > Apr
> > > > > > > > 2008
> > > > > > > > 17:33:40
> > > > > > > > −0700,
> > > > > > > > Joerg
> > > > > > > > <notthisjoerg...@xxxxxxxxxxxxxxxxxxxxx>
> > > > > > > > wrote:
> > > > > > > >
> > > > > > > > > Leon
> > > > > > > > > wrote:
> > > > > > > > >
> > > > > > > > > > On
```
```

14 Apr, 19:49, jd_l...@xxxxxxxxx wrote:

> I'm looking for Do−it Yourselft articles on soldering surface mount components. I can't afford the IR equipment that commercial board houses use. I'm particularly interested in soldering the new ROHS components that require lead free solder. The lead free solders require higher temperatures. Also, do

board coatings prevent problems with tin whiskers that grow from the lead free solders?

I do surface mount assembly with an ordinary Metcal soldering station. I solder Rs and Cs using a small tip cartridge, and fine−pitch devices by drag−soldering with a mini−hoof cartridge.

Metcal, ordinary? Those are the

Mercedes−Benzes of solder stations. They are great but the ones I have used at clients were well north of $500.

Metcal has a cheap iron for about $180 (PS−800). Tips are about $8 or $9. I use the 650 deg 0.016" tips for most of my work (0402 size and

0.5mm pitch parts). I like the small footprint of the station. http://www.hmcelectronics.com/cgi−bin/scripts/produ pretty good pricing.

Thanks! That seems like a good place to buy tools. They've got good pricing on Hakko as well. So I bookmarked them. But I can't use a fixed temperature iron here in the lab because

> > > as a consultant I have to deal with widely different technology.
>
> > The temperature is determined by the cartridge, you just need different cartridges for different jobs. No calibration is required, which is a big advantage in a production environment.
>
> Ok, for production that is fine but not in my lab. I don't want to switch cartridges or tips all the time. I remember the nasty burns I got when changing between #6, #7 and #8 tips on the old non−adjustable Wellers.

It's very quick and easy, using the heat−resistant pad provided. It takes about 30 seconds to switch off, swap cartridges, and switch on, including the time for the new cartridge to reach its operating temperature.

> I just turn the dial on the Weller a wee bit and it goes from 650F to
> 700F in five seconds. Back down is even faster since you can help it
> along by dipping it into the wet sponge.

How long does it take to change tips?

> I sometimes have to do that when in need of a fine−pitch tip. Ok, full confession, I do not use the proper wrench. To save time I take flat pliers (because that way I can keep holding the tube piece), unscrew, flick the tip into a metal tray and slide the new one in. Maybe five seconds or so.
>
> Care needs to be taken when it's only for one quick solder joint, you want to switch back right away, grab the other tip that was just ejected, and ... *OUCH*. That's where burn gel comes in ;−)

Thus losing maybe a full minute
.