Forum: mechanics, housing, tools

METCAL SP200 soldering station technical documentation

🇬🇧Announcement: there is an **English version** of this forum on EmbDev.net . Posts you create there will be displayed on Mikrocontroller.net *and* EmbDev.net.

METCAL SP200 soldering station technical documentation

by Gerhard O. (gerhard_)   2013-10-16 09:40

Attached files:
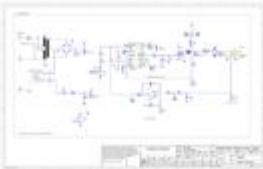
SP200_POWER_SUPPLY_SP-PW1-10.pdf | show
41.3 KB

```
If of interest:

A circuit diagram for the METCAL SP200 SP-PW1-10 soldering station is attached.
Some components still need to be identified and measured values to help
of repairs.
```

Re: METCAL SP200 soldering station technical documentation

by Christian K. (Company: Atelier Klippel) (mamalala)   2013-10-16 12:32

```
Hello Gerhard,

do you also have pictures of the interior of the station? I would
interested.

Regards,

Chris
```

Re: METCAL SP200 soldering station technical documentation

by Gerhard O. (gerhard_)   2013-10-16 12:59

Hi Chris,

Yes! But not here. But can upload it tonight.

Regards,
Gerhard

Christian Klippel wrote:
 > Hello Gerhard,
>>
do you also have pictures of the inside of the station? I would be
interested.
>
> Regards,
>
> Chris

Re: METCAL SP200 soldering station technical documentation

by Gerhard O. (gerhard_)   2013-10-16 19:41

Attached files:

SP200_Top_View_PCB.jpg
218 KB

SP200_Bot_View_PCB.jpg
326 KB

SP200_Cover_View_PCB.jpg
333 KB

Hi Chris,

here are some pictures from the open ward.

Greeting,
Gerhard

Re: METCAL SP200 soldering station technical documentation

by Christian K. (Company: Atelier Klippel) (mamalala)   2013-10-17 04:40

Thanks Gerhard. Yes, there is not much in it;)

Regards,

Chris

Re: METCAL SP200 soldering station technical documentation

by Gerhard O. (gerhard_)   2013-10-17 04:51

Attached files:
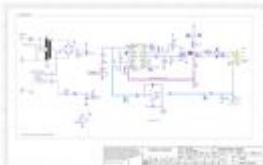
SP200_POWER_SUPPLY_SP-PW1-10_REV2.pdf | show
41.4 KB

```
Here is a revised version of the schematic with the measured
(LARU) inductance values of the coils and a few new ones
Component value entries.

However, I do not understand the purpose of the resistors at the OUTA
(R17 / R18). Any ideas?
```

Re: METCAL SP200 soldering station technical documentation

by Christian K. (Company: Atelier Klippel) (mamalala)   2013-10-17 05:00

```
Gerhard O. wrote:
 > Here is a revised version of the circuit diagram with the measured
> (LARU) inductance
values of
the coils and a few new > component value entries. >
> However, I do not understand the meaning of the resistances at OUTA
> (R17 / R18). Any ideas?

That will be because there is no OUTA and OUTB on the chip,
but only OUT on pin 14. Pin 11 is IlimRef, so for the
Current limitation. Data sheet for the UC3823 :

http://pdf.datasheetcatalog.com/datasheet2/8/0uza3o862dxf0j7k7sxwfg9xag3y.pdf

Regards,

Chris
```

2013-10-17 05:01: Edited by user

Re: METCAL SP200 soldering station technical documentation

by Gerhard O. (gerhard_)   2013-10-17 05:13

Attached files:
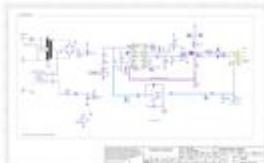
SP200_POWER_SUPPLY_SP-PW1-10_REV3.pdf | show
41.4 KB

Hello Chris,

now I understand. Digi-Key's TI datasheets are different.

http://www.ti.com/lit/ds/symlink/uc3825a.pdf

I got the wrong data sheet. Then there is no need
this question. The UC3823 BN is not the same as the one used. Man
never stops learning ...

Greeting,
Gerhard

Christian Klippel wrote:
 > Gerhard O. wrote:
 >> Here is a revised version of the circuit diagram with the measured
>> (LARU) inductance
values of
the coils and a few new >> component value entries. >>
>> However, I don't understand the purpose of the resistors at OUTA
>> (R17 / R18). Any ideas?
>
> This will be because it is no OUTA and OUTB at the chip,
> but only OUT to pin 14. Pin 11 is IlimRef, so for the
> current limit. Data sheet is the UC3823 :
>
> http://pdf.datasheetcatalog.com/datasheet2/8/0uza3o862dxf0j7k7sxwfg9xag3y.pdf
 >

> Regards,

2013-10-17 05:16: Edited by user

Re: METCAL SP200 soldering station technical documentation

by *PM* (guest)   2018-01-15 02:16

Hi, thank you for this schematic. I built it and got it working very
well. There is a small mistake, pin 4 of UC3823n should not be
connected. In the schematic it is connected to ground.

It is very interesting in how it works - the UC3823n generates a low
frequency in the region of 40 kHz, which excites the RC circuit and it
rings at the desired ~ 450 kHz frequency. When the set current is reached,
the 40kHz is decreased accordingly.