
Subject: Burnt PC900

Posted by [dacflyer](#) on Sun, 05 Jul 2015 23:56:16 GMT

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i am working on a K100-5 Pa AMP

the PC900 board has burnt resistors and i am unable to ID them and the PC900 schematic i have does not seem to match up with the board i am using. can anyone give me any help?

i do have a lot of electronics experience. so far i have found that someone has worked on this before and they did horrible work on it.

the output transistors are shorted, and a few other parts are also blown.

i do not see how to post any fotos here.

thanks for anyone that can help...

Subject: Re: Burnt PC900

Posted by [chicagobill](#) on Mon, 06 Jul 2015 03:05:45 GMT

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Welcome to the place.

I'm not sure about the photo question, but I will try and help you with the resistor questions. The PC900 board contains the main power amp circuit and the low voltage regulator circuits for the preamp circuits.

Often when the output transistors short, they will take out the driver transistors and a few others as well. The basic circuit is the same for a lot of the amps, so you should be able figure out the values that you need. Try and figure out what the burned resistors connect to and that will help to figure out the values.

Subject: Re: Burnt PC900

Posted by [dacflyer](#) on Mon, 06 Jul 2015 22:59:21 GMT

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if someone had a close up foto of the board that would help me a lot..

on my board Q903 has a glass diode connected directly to one leg then it goes over to the diode string (900,901?)

i was going to try to add in a link,.but the forum here says i cannot add links til i have posted 10x (sigh)

so i'll ty to describe things.. or if you want to do email. i can send fotos thru there.

on the board Q903 goes to the glass diode.then it goes over to the 2 metal diodes on the board and then to the bottom of the 3900 ohm resistor. the glass diode is shorted, and i am unable to read anything off of it.. but on the schematic there is no diodes that come off any leg of the Q903.. also noted on the board this glass diode, there is a jumper wire next to it..and it is located next to Q904.

Subject: Re: Burnt PC900

Posted by [chicagobill](#) on Tue, 07 Jul 2015 00:58:52 GMT

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I think that you are describing Q906, one of the limiter transistors. Q903 is the voltage amp and is normally a metal cased TO-39 transistor. Is there a 95 ohm and a 510 ohm resistor connected to this transistor?

Subject: Re: Burnt PC900

Posted by [dacflyer](#) on Tue, 07 Jul 2015 23:13:42 GMT

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well i just wasted 40 min typing out a reply..then hit submit reply..it took me right away to log in AGAIN..and all that i typed was lost. i am sooo pissed right now...let me see if i can remember all that i wanted to say.. hopefully i am not kicked out again, will try to condense it this time for my sake.

1st of all to let you know, i down loaded the PC900 schematic & transistor diagram. i start to think that the transistor diagram may have errors, for 1 Q906 is not listed. Q907 has the glass diode and i see the 510 Ohm resistor, but i do not see a 95 Ohm resistor anywhere on the board unless it is burned up , but the burnt resistors are located between the heat sinks (listed as Q904 & Q905)

and the transistor located between the heat sinks is listed as a Q903.

so either the "transistor diagram" or the schematic is not correct. in my logic i'd think that the drivers are the ones with heat sinks

(on schematic Q906-Q907) but on the transistor diagram they are listed as Q904 & Q905
am i missing something here or did i find a error ?

Subject: Re: Burnt PC900

Posted by [stevem](#) on Tue, 07 Jul 2015 23:30:39 GMT

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If you have a Q907 then you have a Q906.

The fd111 crystal diode is off of 906 collector .

The 510 ohm is off its base lead , and that 95.3 ohm resistor is off its emitter and is joined at its end by the other 95.3 ohm on the other protection resistor.

Subject: Re: Burnt PC900

Posted by [chicagobill](#) on Wed, 08 Jul 2015 19:11:54 GMT

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The driver transistors are the ones with the heat sinks, Q904 and Q905. They are often short when the outputs go bad, so they should also be tested.

Q906 and Q907 are the limiter transistors. They are there to reduce the drive if the outputs are driven too hard. And you are right Q906 is not shown on the layout diagram.

The 510 and 95 ohm resistors set the point at which the limiting action takes place. That is part of the reason that they are specified as precision metal film resistors.

Subject: Re: Burnt PC900

Posted by [pleat](#) on Wed, 08 Jul 2015 20:27:56 GMT

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The PC900 schematic on this site shows the Q906 and Q907
pleat

Subject: Re: Burnt PC900

Posted by [stevem](#) on Wed, 08 Jul 2015 23:22:49 GMT

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It's interesting, in the combo amps that 95.3 ohm resistor is a 100 ohm.

Subject: Re: Burnt PC900

Posted by [dacflyer](#) on Mon, 13 Jul 2015 11:45:44 GMT

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bump...

Subject: Re: Burnt PC900

Posted by [stevem](#) on Mon, 13 Jul 2015 14:11:17 GMT

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I do not know what you are looking at, but in regards to this sites tech section I found Q906 on the k100-8 listing for PC900, and I found Q906 on the straight up PC900 schematic on this site along with the 95 ohm resistor on both schematics!

Subject: Re: Burnt PC900

Posted by [dacflyer](#) on Wed, 29 Jul 2015 01:01:33 GMT

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ok,, i think i have 1 big step in being on my way to repairing the board..

1st of all the downloadable schematic and the transistor page are for the K100-5 and the PC900 but the page for the transistor diagram is NOT correct.

The transistor between Q902 and Q907 is not listed, it is actually Q903 and on the diagram Q903 is actually Q906

i was wracking my brain trying to compare the transistor diagram to the schematic.

so now it to make sense to me now.

now i just wish there was a component diagram,, does anyone know what the 2 horizontal

resistors are that are next to the Q906 transistor ? 2 of them are burned to ashes. i believe one is a 95.3 ohm @ 1% and the other is 510ohm @5%

but i do not know which one is which..they are parallel to each other in a horizontal position

i think that the 510 ohm 5% is the lower one and the 95.3 1% is on the upper ?

can anyone can confirm this ?

Subject: Re: Burnt PC900

Posted by [stevem](#) on Wed, 29 Jul 2015 10:38:56 GMT

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I can check latter for you if Bill does not come to your rescue .

Subject: Re: Burnt PC900

Posted by [chicagobill](#) on Wed, 29 Jul 2015 16:16:49 GMT

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Sorry, I can't help other than to tell you to look at the pc traces where the two resistors are mounted. What do they connect to?

Once you know what they are connected to, you can figure out where they are on the schematic, which will tell you what the values are.

If I had a PC900, I'd tell you what it has, but I don't own one. Sorry.

Subject: Re: Burnt PC900

Posted by [dacflyer](#) on Wed, 29 Jul 2015 23:33:56 GMT

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looking in the schematic..i can't quite tell

is the 1% resistor is a 95.3 ohm or a 96.3 ohm

can someone advise..

Subject: Re: Burnt PC900
Posted by [stevem](#) on Wed, 29 Jul 2015 23:57:09 GMT
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95.3, but in latter amps they rounded these off to 100 ohm.

Subject: Re: Burnt PC900
Posted by [chicagobill](#) on Thu, 30 Jul 2015 14:51:03 GMT
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I haven't seen the 100 ohm value anywhere.

The 95.3 ohm resistor sets the turn on point for the limiter. The two halves should at least be the same value.

Do you have a variac or limiter available to you? You will probably want to power up with some sort of protection device when you first power on the amp with the new parts.

Subject: Re: Burnt PC900
Posted by [dacflyer](#) on Thu, 30 Jul 2015 18:48:18 GMT
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i do have a variac and various limiter lamps.
so that is not a problem,

so should i stick with the 1% resistor or update it to the 100 ohm,, and should they be of 1% also ?

i have found the diode i need that clips onto the heat sink, i bought a pair of them off of ebay. when i got the amp it had a glass diode floating in the air. and later discovered that the diode was loose, and i believe that is what caused it to go up in flames.

Subject: Re: Burnt PC900
Posted by [stevem](#) on Fri, 31 Jul 2015 10:33:13 GMT
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My revision 4 , PC 900 schematic dated 1970 shows a value of 95.3, the K100 piggy back amps show a 100 ohm value, and the metal face K150 heads list a 150 ohm value for those resistors and all of these amps where made to drive a 8 ohm load.

I would conclude that the matching of them is more important than the value, but I am no circuit designer!

I found my Kustom layout and as always they only show the transistor location on the board that's it for components.

The leads of that glass diode if not insulate shorting out on its clip is what likely made things ugly !

On a side note, I played in a show band in Fayetteville for two weeks back in 80 or 81 at what seemed like the only hotel in town back then, and yes using a K250 head, lol!

Subject: Re: Burnt PC900

Posted by [dacflyer](#) on Fri, 31 Jul 2015 18:39:43 GMT

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the glass diode was never attached to the heat sink...
i have some parts on order.. will order the rest this weekend.
who ever worked on it before did not go back with proper parts.

let me guess,,, in Fayetteville, down town...only hotel.. would it have been the Price Charles's Hotel or the Quality Inn or maybe the St. James Inn ?
those are about the only 3 that i can think of for back in the 80's
where did you play ? "Rick's Lounge"? very popular back then..
there was also the "Cellar". hope one of them rings a bell

Subject: Re: Burnt PC900

Posted by [chicagobill](#) on Fri, 31 Jul 2015 19:19:35 GMT

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Steve M-I haven't looked up any of those other schematics, but remember that these read the voltage being dropped across the emitter resistor which is different on different amps, like the metalfront uses 0.51 ohm resistors instead of the 1 ohm resistors of the earlier models.

dacflyer-There are a lot of these amps that have been "fixed" by folks that take the approach of just make it work. No real thought of doing it right. When I see an amp that has signs of this type of work, I go over the entire amp to see exactly what was done to it and what needs to be redone to make it correct. Sounds like you need to do the same thing.

Subject: Re: Burnt PC900

Posted by [stevem](#) on Sat, 01 Aug 2015 09:58:07 GMT

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That glass diodes insulative properties even if clipped in would have been likely to not track right, or too slow.

Subject: Re: Burnt PC900

Posted by [dacflyer](#) on Sat, 01 Aug 2015 20:29:52 GMT

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this is exactly what i am trying to do.. that's why i am making sure i can read the numbers etc. on the schematic correctly.

some of the print is blurred and hard to read..

and so far (slowly) i am finding the correct parts i need.

i'll keep you all posted on my progress.

thanks.

Subject: Re: Burnt PC900 (UPDATE) Success it is working again.

Posted by [dacflyer](#) on Mon, 28 Dec 2015 20:07:22 GMT

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hey all,, just wanted to post that i finally got the Amp working again. will post pix later on.

took a while to get all the board parts, and i had a minor issue.

(installed wrong transistor, should have been a PNP not a NPN.) schematic issues..lol

anyway it is working like a champ now. only concern i have is about the pilot lamp.

there is a resistor in series with the lamp. the lamp works fine but the resistor gets quite hot. is this normal for the pilot lamp ? right now it has what appears to be a 12v lamp.

can anyone advise on this ?

thanks..

Subject: Re: Burnt PC900

Posted by [chicagobill](#) on Tue, 29 Dec 2015 05:16:51 GMT

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Glad to hear that you got it working.

The pilot lamp should be a 28 volt bulb, I think a #1829. If the bulb is a 12 or 6 volt one the 200 ohm resistor will get very hot and the bulb will burn out faster than normal.

Subject: Re: Burnt PC900

Posted by [dacflyer](#) on Tue, 29 Dec 2015 14:55:22 GMT

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well the bulb that is in it right now is not bright, and it is a 12v bulb, but the resistor, i do know it is a 5 watt resistor. you would think that the lamp would run off of the mains power, rather than the secondary.

Subject: Re: Burnt PC900

Posted by [steven](#) on Tue, 29 Dec 2015 16:20:02 GMT

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I know, I guess that for some reason Kustom / Bud Ross thought it cool to have lamp dim with the current draw of the amp, I don't know?

I guess one reason would be to keep hum inducing ac voltage of any level away from the front center of the amp and making for hum pick up in the preamp section!

Subject: Re: Burnt PC900

Posted by [chicagobill](#) on Tue, 29 Dec 2015 16:30:59 GMT

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I looked up the lamp number and it is a #1828.

Subject: Re: Burnt PC900

Posted by [C4ster](#) on Tue, 29 Dec 2015 17:55:20 GMT

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I am sure it's an 1829. 28V, 70mA My schematics say so!

Conrad
