
Subject: Update!

Posted by [Shaun_Musings](#) on Sun, 10 Jan 2016 23:51:56 GMT

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Okay, so the TO-39s are secure. That was why I blew the fuse; I didn't realize the little plastic washers were insulating the screws. So, those are new. Used the diode function to test for continuity.

Installed the new 4049s and 4010s, but without their heat sinks; I will be using press-on ones. Which means I had to connect a wire to where the heat sink was part of a circuit; it turns out the transistor itself is 'Base.' So that is all set; I am waiting for the press-on heat sinks.

Now, there is a resistor which started smoking and while it didn't burn up all the way, I'm not going to chance it.

There are a few other transistors on the board which need to be swapped; I'll take care of those in a bit.

The last piece is the diode. There seem to be two metal can diodes in a line, with the -->| pointing down toward the chassis; the next piece in line is the heat sink diode (1N4148TA) which I will be putting in tomorrow.

I may decide to change the big main filter caps in the future; they seem to be out of sync. I'll be going with 15,000 UF., 75 VDC...

Subject: Re: Update!

Posted by [chicagobill](#) on Mon, 11 Jan 2016 01:56:32 GMT

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Sorry, but your post really doesn't make sense to me. TO-39 transistors are small like the 40410 without the heat sink. If you are talking about the large metal power transistors on the bottom, those are TO-3 cases.

The driver transistors like the 40409 and 40410 have the Collector connected to the case, not the Base.

If a resistor has burned, then something that is connected to it is drawing too much current. Maybe a shorted transistor.

It is very important that the three diodes are connected correctly. If you haven't moved the two diodes on the board, then they are in the correct orientation. The heat sink diode must be polarized correctly or the power amp will blow up. Those three diodes set the bias of the output stage and if the diode string is open or connected wrong the two halves of the power amp both turn on at the same time and will cause the transistors to short out.

Subject: Re: Update!

Posted by [Shaun_Musings](#) on Mon, 11 Jan 2016 02:15:16 GMT

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I meant the TO-3 transistors on the bottom, yes. I replaced those. I also replaced the TO-39s, and right now they do not have a heatsink; I have ordered the press-on heatsinks, and they should be in soon. I have the little glass 1N4148TA diode, which has a band on it to indicate polarity. I'm assuming they all go in the same direction.

The original diagnosis appears to have been a bad output transistor. O don't have a variac to bring this amp up slowly, but is there anything I should do before I start it up? All that's left:

1. heatsinks on the TO-39s.
 2. Install glass diode
 3. Replace the resistor.
-

Subject: Re: Update!

Posted by [chicagobill](#) on Mon, 11 Jan 2016 02:33:14 GMT

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Use a light bulb limiter if you have one. The driver transistor heat sinks are only needed for running the amp hard. For testing they can be left without them for now.

Subject: Re: Update!

Posted by [Shaun_Musings](#) on Mon, 11 Jan 2016 14:22:34 GMT

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Okay, thanks... I don't have a limiter here, but I know I can build one easy enough...

Subject: Re: Update!

Posted by [steven](#) on Tue, 12 Jan 2016 11:54:16 GMT

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You should also de rate the fuse by 50% for the first power up on the limiter.

Subject: Re: Update!

Posted by [Shaun_Musings](#) on Tue, 12 Jan 2016 20:56:25 GMT

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Okay, I decided not to use a limiter, and give it a shot. Stupid me, but nothing exploded; it fired up nicely. Registered 8VDC at the output; which is a quarter of what it was before. Then about three minutes after I started it, a resistor started smoking right next to the third driver transistor (RCA

40410). Turned it off and checked the driver transistor. It looks like I didn't solder it down very well and/or the transistor became loose when I was installing the diode. Overall, however, looking at the VDC drop, I would say things are looking a lot better. I'm going to double check the transistor and take it off and make sure it's still okay and not fried, and go from there.
