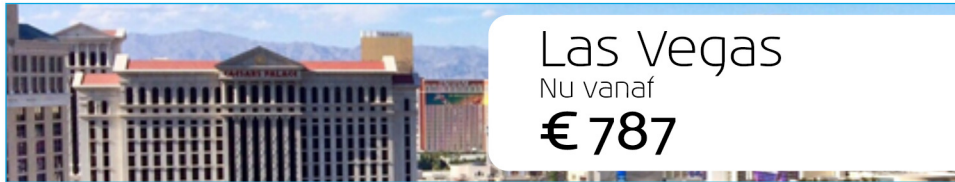


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Bryston 4B power amp - help needed.

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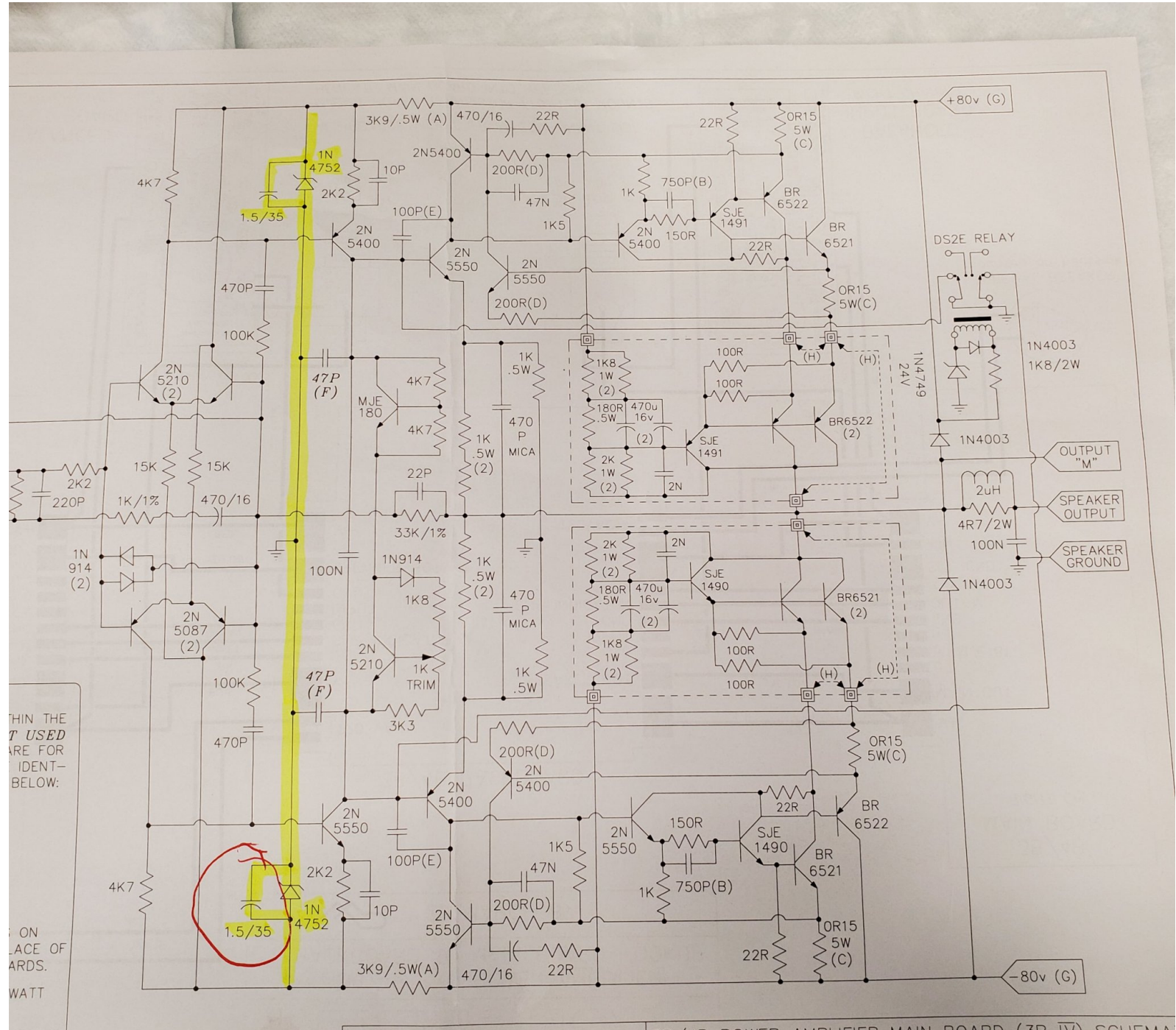
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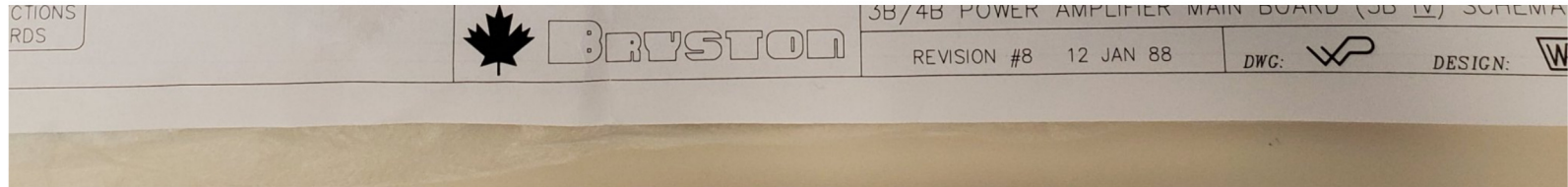
2022-06-10 7:10 pm

#1

Hi All,

I need some help with a Bryston 4B power amp. Can anyone tell me what the function of the highlighted portion of the circuit does?





The reason I'm asking is I accidentally damaged one of the Tantalum Capacitors (1.5 uf, 35V).

I got a replacement from from Mouser (Kemet T350K035AT), but I noticed that the original cap has an ESR of 1.5 ohms, while the replacement's ESR is 9 ohms on my meter.

image.php

I just need to know if the higher ESR will matter, or is it irrelevant in this particular application.

Also, would a WIMA stacked film capacitor be an acceptable alternative in this particular application?

2022-06-10 9:26 pm

#2

The highlighted circuit together with the 3k9 resistors functions as a voltage regulator. Everything on the left of the 3k9 resistors is tuning at 33V, while the zeners are 33V devices.

The cap parallel to the zener is not critical.



Bensen

Member
Joined 2003



John Tulett

Member
Joined 2021

2023-08-01 4:21 am

#3

Sorry for a late reply I'm new to the Solid State forum.

To share a related experience where I had to replace the 1.5 uf, 35V Tantalum Capacitors across the 1N4752 (33V) Zener Diodes with new Tantalums in my Bryston 3Be power amp, report I posted earlier this year on the Audio Circle Vintage equipment site.

"Bryston 3Be Power Amplifier repair - Hints and Lessons Learned"

<https://www.audiocircle.com/index.php?topic=184960.msg1940417>

Audio board repair:

- *After repairing the power supply the amplifier worked reliably, then after some 4-months of operation suddenly one audio channel went dead.*

- Found the 33V Zener diode voltages supplying the input differential pairs was unstable. Problem traced to the 1.5 uF / 35V tantalum capacitors paralleled across the Zener diodes had become discolored and were leaking (Fig 9).
- Although my local supplier had 1.5 uF / 35V tantalum capacitors in stock, to install a 35V rated component in a 33V operation I felt was borderline so purchased instead higher rated 2.2 uF / 50V tantalum capacitors (my local supplier had sold out of 1.5 uF / 50V rated tantalums). Although these new capacitors were slightly larger in size it was straightforward to install them on the audio board (Fig 10).

Presume you have your 4B power amp repaired now, but if you do have the problem again you might consider replacing with higher rated 50-volt tantalum capacitors.

I'm not saying you have a marginal voltage situation, but tantalum capacitors can fail when their rated voltage is exceeded, and there is no harm in upgrading to the next higher voltage rating when replacing.

Thanks,
John

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