

Frank Blöhbaum

I found a potential reliability issue in the MTA circuits I presented in this article. In case of hard input overdrive of the power MTA the output signal will be clipped – like all amplifiers do. Because of the large open-loop gain the feedback loop will force the pnp transistor Q1 to supply a much higher collector current than under normal conditions; see Fig. 17 in the article.

To make the power MTA „fool proof“ the collector current of Q1 should be limited to safe values even for massive input signals. That is done by applying the additional devices Rs1, Cs1 and R28, see the new Fig. 17a and the adapted new values of R10 and C4:

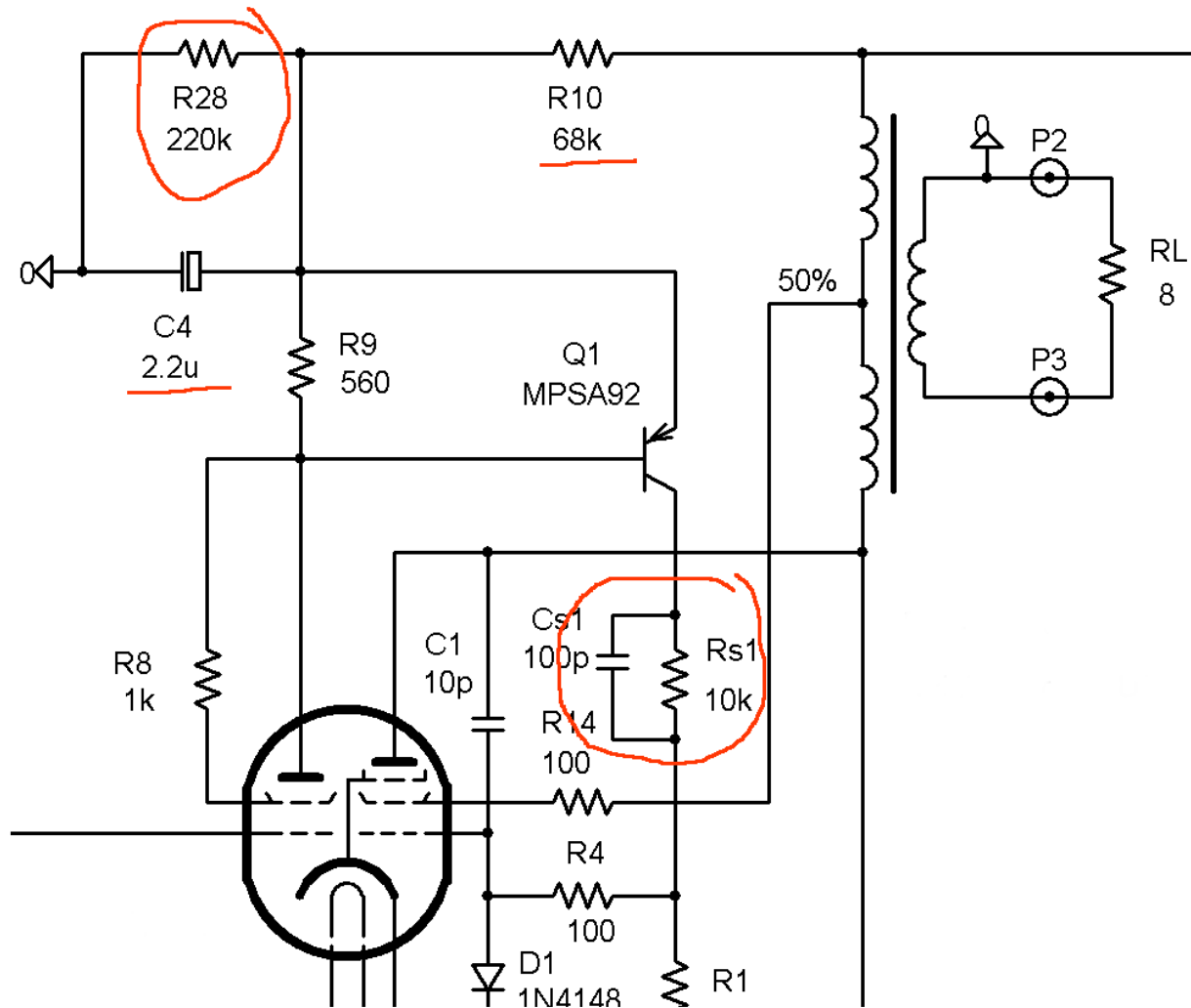


Fig.17a Detail of Single-Ended-A power MTA including additional safety parts

Rs1 is connected in series to the collector of Q1. This resistor keeps the collector current and power consumption of Q1 under all circumstances within safe values. Capacitor Cs1 is included to maintain the H.F. phase margin. The further added resistor R28 limits the Vce of Q1 to safe values if the power supply is rather soft (C-input) and is applied before the tube has heated-up (typical case for use of semiconductor diodes for rectification). This resistor was already applied for the 300B MTA in the L|A Vol.6 article.