Subject: Tube Burner
Posted by gofar99 on Thu, 28 Feb 2013 02:09:57 GMT
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Hi Everyone, Another project based on need. If you use lots of tubes (like I do) you are sure to find that matched ones are not all that well matched by all suppliers and often even matched ones don't stay that way. Hence the need for some way to "cook" the tubes for a while and then match them. The device I made will do 1-4 tubes at a time. The only restriction is that they must have the same pin arrangement as the 6L6/KT88 and so on. Many power tubes use this arrangement. The circuit uses cathode current sources to select the current for the "burn". Values of 60, 90 and 130 ma are selectable. The B+ is 355 and typical cathode voltages range from 25 to 40 volts depending on tube type. This allows for burning most common tubes in the 60-80% of their dissipation range. The tubes are run in pentode mode. I set it up to measure the cathode voltage and current flow for each tube. To match tubes, all you need do is get ones that have similar cathode voltages at the same current. This is because the grids are at ground potential and the CCS automatically adjusts the cathode voltage for the programmed current. The difference between the two voltages is the bias that would be required for that current flow. This process is particularly good for selecting the tubes for the class A push-pull amps I favor. Measuring the cathode voltage will also indicate ones that drift and are generally unsuitable for quality applications. The down side of the tester is that it uses a lot of power. When running the max load (130ma) on a quad of KT120s power consumption is nearly 300 watts and will nicely warm a cold room. BTW the power transformer can deliver nearly 1800 ma at full voltage. It is an previously available Edcor type that I used in a long past project.

File Attachments

1) IMG_0456E.jpg, downloaded 3473 times
2) IMG_0457E.jpg, downloaded 3522 times