

November 8, 2012 Lourens Koopmans wrote:

After receiving the uTracer3 kit from Ronald, I immediately started assembling the PCB, the build is straight forward, all steps are clearly described and all separate parts of the uTracer3 are individually tested. The testing and calibration was no issue, I only made a small mistake measuring the grid voltage referenced to ground instead of the cathode.

The software GUI is working fine but I have some issues with it:

- Sometimes the serial communication with the uTracer3 is lost when interrupting a measurement.
- When selecting -50.0V grid voltage this is actually 0V !
- The window size of the GUI cannot be resized or maximized full screen but this has probably to do with the used visual basic version the GUI is written in.

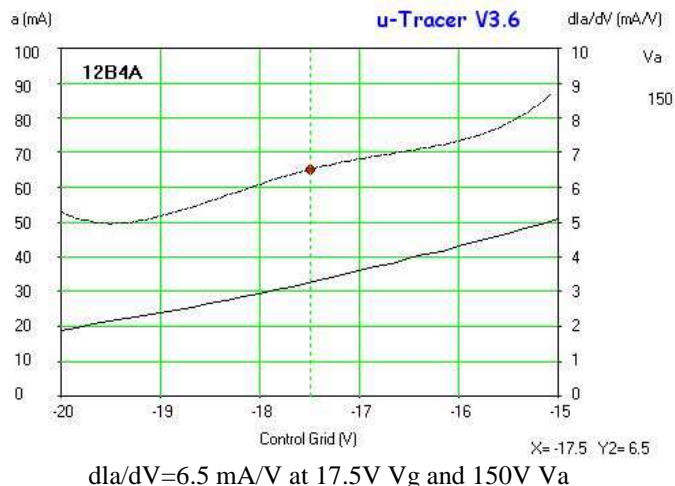
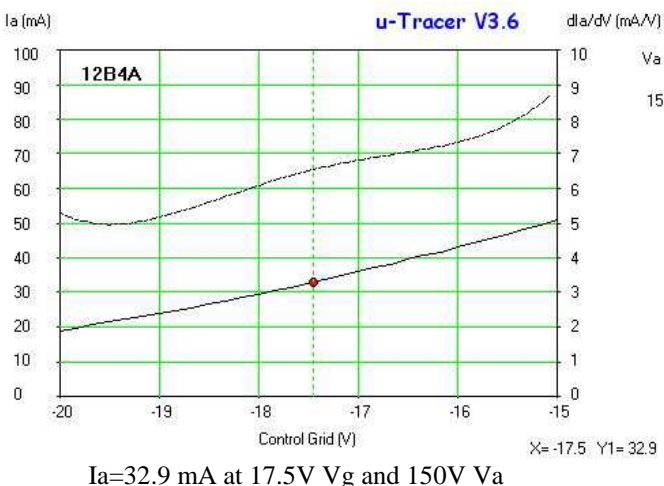
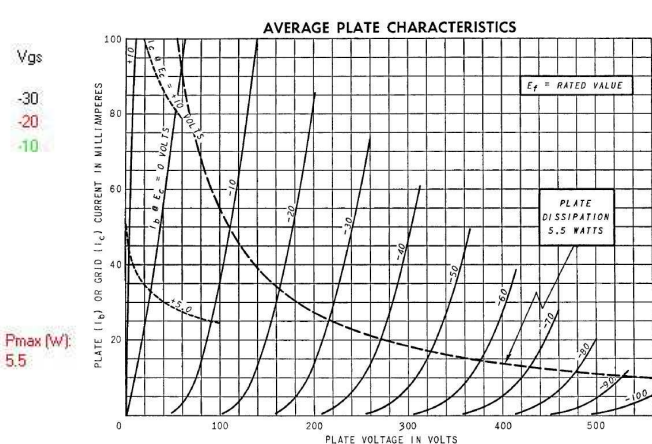
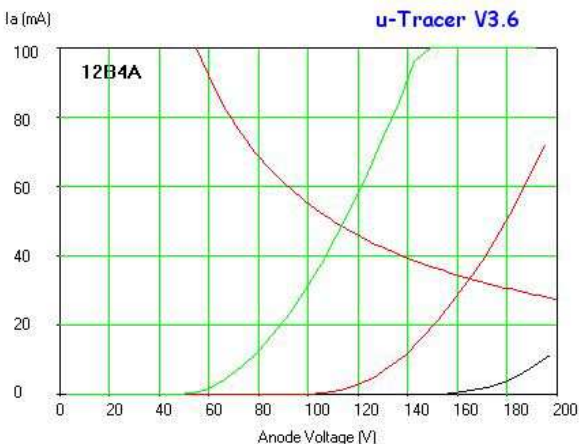
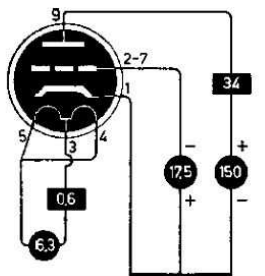
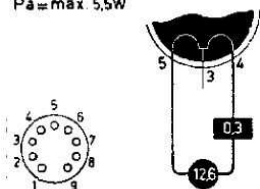
I would also be nice to stop the measuring of a curve when the max. anode, screen current of a manual defined diagram is reached, this way you could trace curves with low voltage or 0V grid voltages without going into overcurrent protection.

But the uTracer3 is very usable at this moment, I took some traces of random tubes laying around, look below for the measured traces and the snapshots of the datasheets. The uTracer3 is very accurate!!

At this moment I am building an enclosure for the uTracer3, I will use replaceable dual tube sockets similar as the Tektronix 570 uses. This way it is possible to match two triodes.

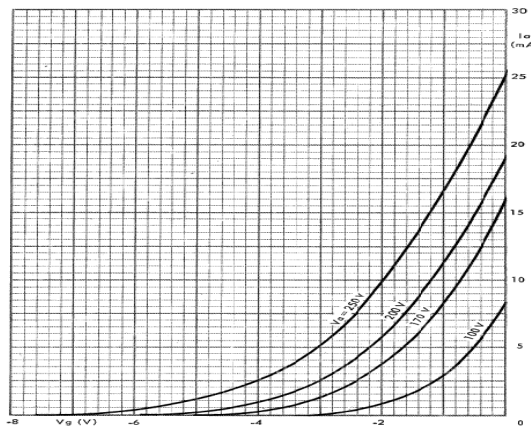
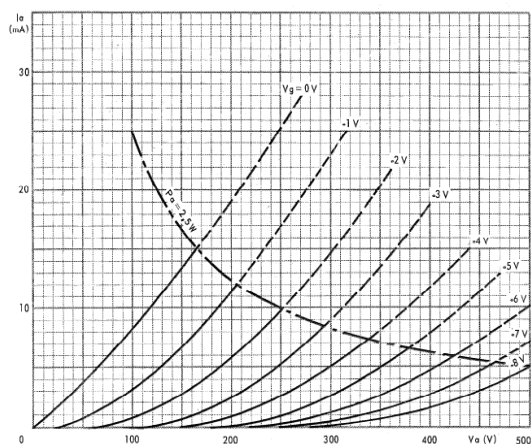
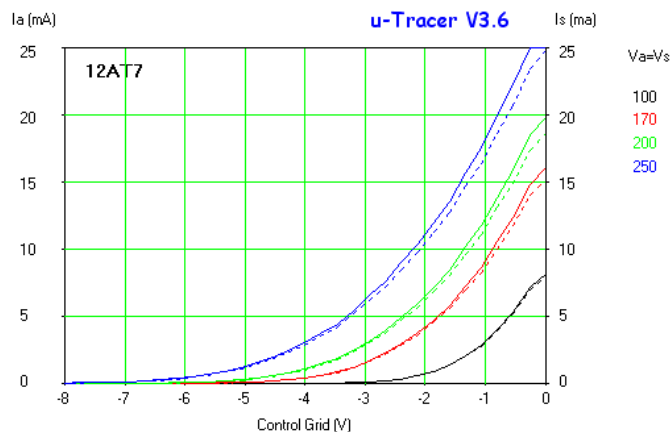
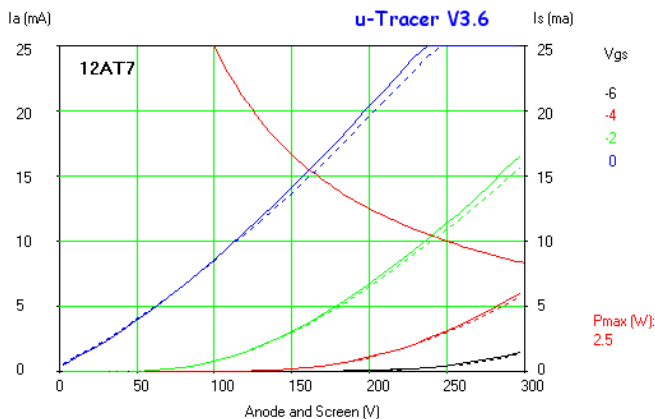
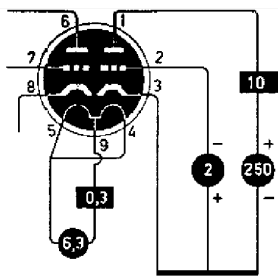
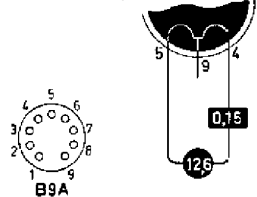
**12B4A**, this tube miniature low-mu triode designed originally for service as a vertical-deflection amplifier in television receivers, also used in OTL audio amplifiers.

$S = 6,3 \text{ mA/V}$   
 $\mu = 6,5$   
 $R_i = 1k$   
 $P_a = \text{max } 5,5 \text{ W}$

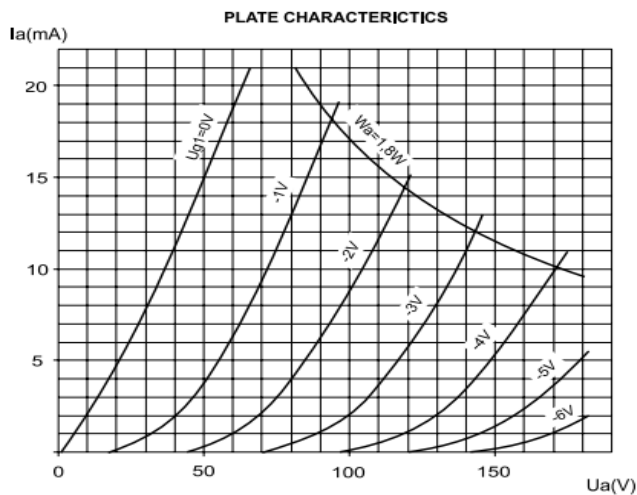
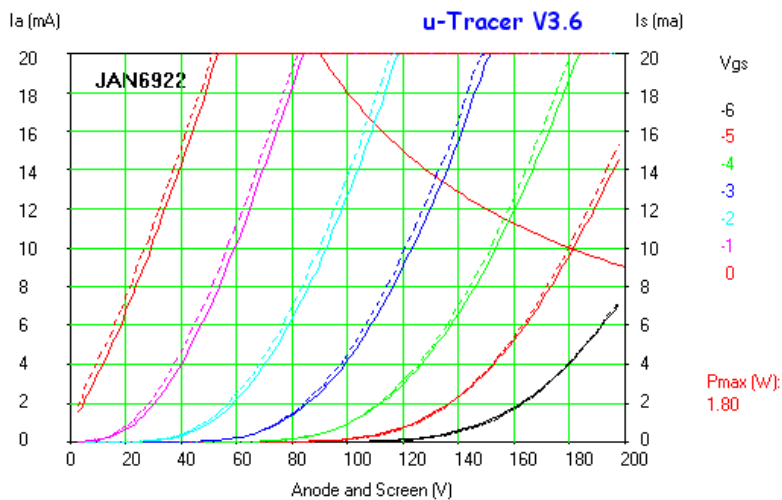


**12AT7**, (also known in Europe by the Mullard-Philips tube designation of ECC81) is a miniature 9-pin medium-gain (60) dual-triode vacuum tube popular in amplifiers.

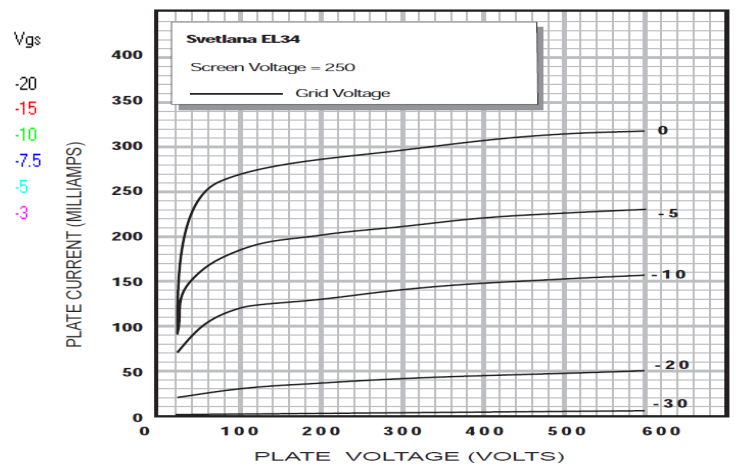
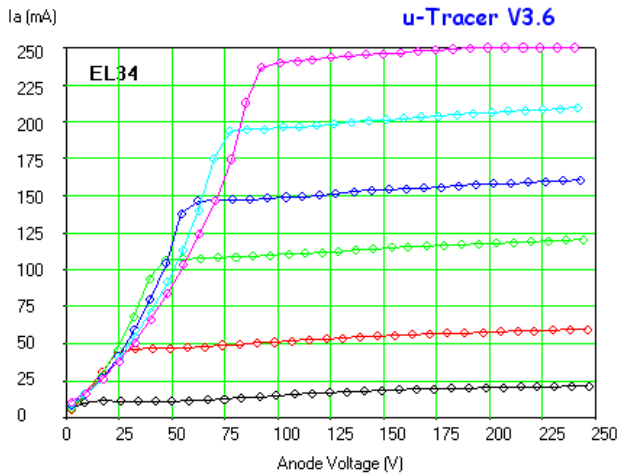
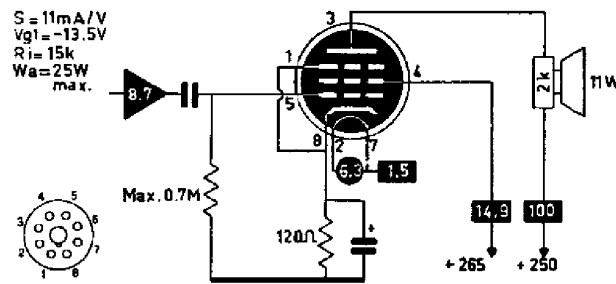
$S = 5.5 \text{ mA/V}$   
 $\mu = 60$   
 $R_i = 11 \text{ k}$   
 $P_a = \text{max } 2 \times 2.5 \text{ W}$



**JAN6922**, is a military spec 6DJ8 / ECC88 twin triode tube developed as RF low noise.



**EL34**, is a much loved audio power valve with an anode dissipation of 25 Watts.



**6L6GC**, is the latest version of the 6L6 tube a beam tetrode for audio power amplifier applications, this version has a 30 watt plate dissipation.

