

Product Review

Sovtek 6550 and 2A3 Platinum Matched Tubes

Reviewed by Charles Hansen

Sovtek 2A3 Power Triode, Sovtek 6550 Beam Power Tube, New Sensor Corp., 20 Cooper Square, 4th Floor, New York, NY 10003, (212) 529-0466, www.newsensor.com.

INTRODUCTION

I previously reviewed the Sovtek 2A3 in the 5/00 issue of *Glass Audio* (“2A3 Sovteks,” pp. 46-48). New Sensor furnished two more “Platinum Matched” 2A3s along with four 6550s for this evaluation. As before, these tests were strictly objective measurements. I did not install them in an amplifier for any subjective testing.

2A3 TEST DATA

At 5.375”, the tubes exactly met the maximum height of the RCA ST16 Outline 51. The maximum diameter of the Sovtek tube was 2.0”, just under the ST16 maximum of 2.063”. The filament currents for both tubes were within the specified 2.5A maximum at a filament voltage of 2.5V AC 60Hz.

I measured the dynamic characteristics using the Audiomatca Sofia vacuum tube curve tracer. *Figures 1 and 2* are the plate curves for samples 1 and 2, respectively.

The variations in plate current at a fixed plate voltage of 250V DC and a grid voltage of -48V DC is shown in *Table 1*. I have also listed the G_m , μ , R_p , and P at the selected test points for information.

I also ran the Sofia matching program, and initially the two 2A3s matched with an ERR of 116. This was somewhat high for matched tubes, so I ran the dynamic test data and the match program two more times.

ERR is a dimensionless figure of merit representing the smallest root-sum-square differences between the measured values of plate current and plate voltage over the specified range of grid-bias values¹. The lower the number, the better the match. An ERR of less than 100 is a very good match.

The second trial resulted in an ERR of 103, and the third trial produced an ERR of 98. However, you should note that I



PHOTO 1: The Sovtek 6550.

TABLE 1
COMPARISON OF 2A3 PLATE CURRENTS AT
Vak = 250V DC, Vg = -48V DC

2A3 SAMPLE	IP (mA RMS)	G_m (mA/V)	μ	R_p (k Ω)	P (WATTS)
1	27.7	6.34	6.49	1.02	6.94
2	29.2	6.03	6.34	1.05	7.33

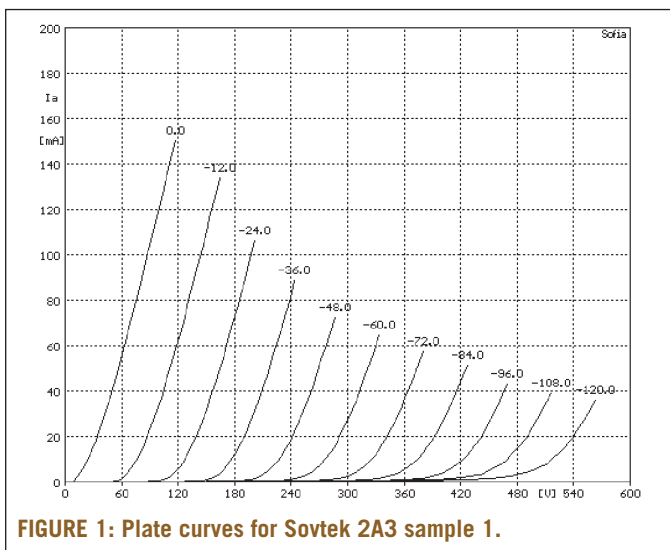


FIGURE 1: Plate curves for Sovtek 2A3 sample 1.

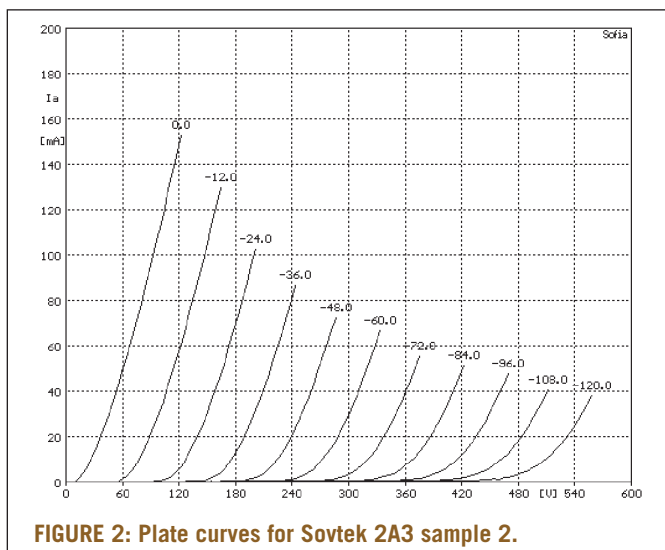


FIGURE 2: Plate curves for Sovtek 2A3 sample 2.

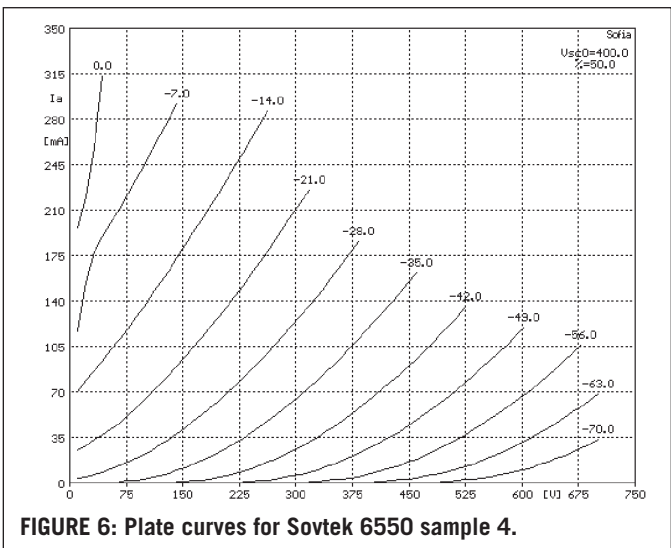
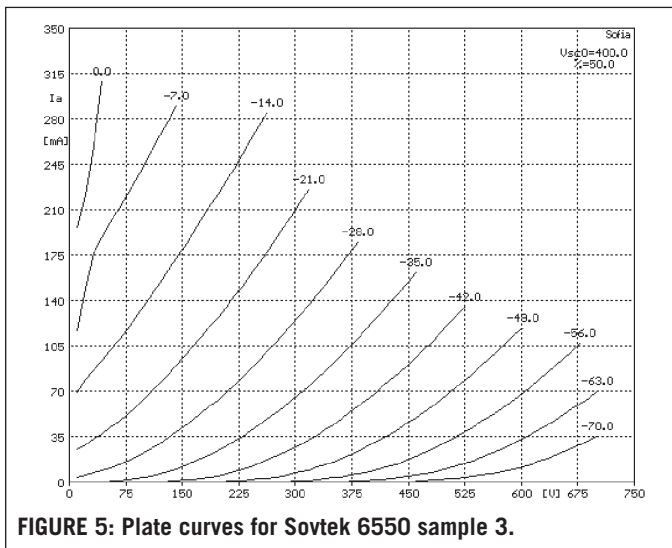
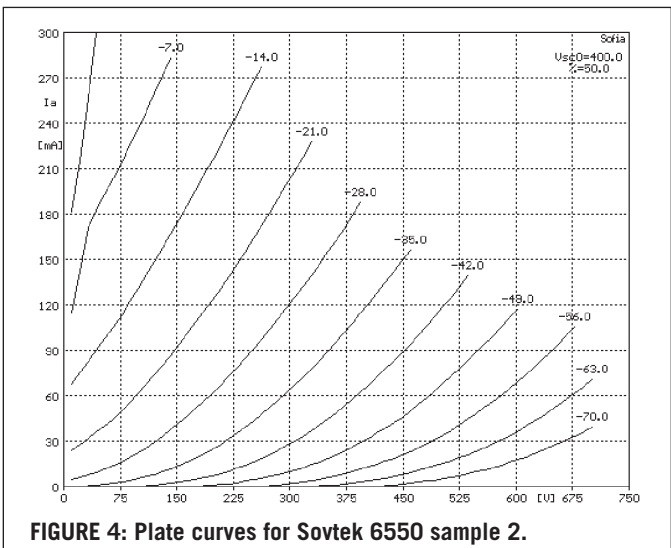
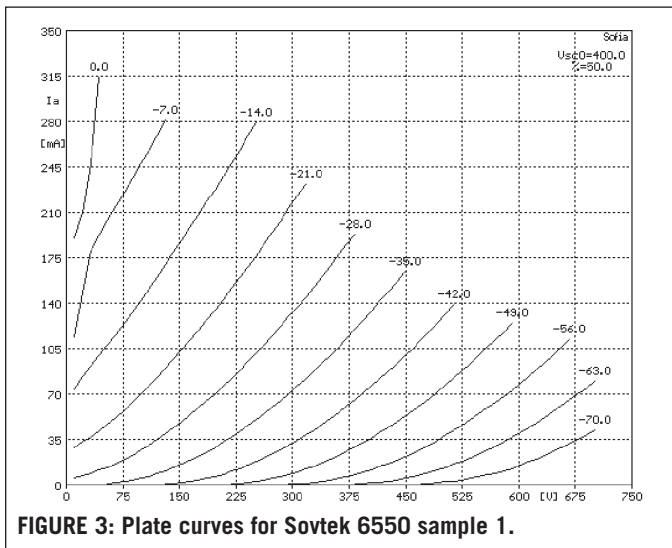


TABLE 2
COMPARISON OF PLATE CURRENTS AT
Vak = 450V DC, Vg = -49V DC

6550 SAMPLE	IP (mA RMS)	G _M (mA/V)	μ	R _p (kΩ)	P (WATTS)
1	53.9	6.68	16.6	2.48	24.3
2	46.2	6.09	17.0	2.78	20.8
3	46.7	6.33	16.7	2.64	21.0
4	44.9	6.48	17.1	2.64	20.2

the four 6550s, and sample numbers 3 and 4 matched with a very low ERR of 28. The remaining two tubes matched with an ERR of 209. The ERR spread for all four tubes (Quartet mode) was 99. ❖

REFERENCES

1. Don Jenkins, "The Sofia," *V&T News* 1/99, pp. 11-19.

measured an ERR of 88 with two unmatched 2A3s in the earlier 5/00 GA test.

6550 TEST DATA

At 4.47", the Sovtek 6550 tube was within the 4.75" maximum height of the ST16 Octal outline. The maximum diameter of the tube, at 1.72", was under the maximum of 2.063". The filament currents for the tubes were within the specified 1.8A maximum at a filament voltage of 6.3V AC 60Hz.

I measured the dynamic characteristics of the four "Platinum Matched" tubes using the Audiomatica Sofia in 6550 ultralinear mode. *Figures 3-6* are the plate curves for 6550 samples 1 through 4, respectively.

The variations in plate current at a fixed plate voltage of 450V DC and a grid voltage of -49V DC is shown in *Table 2*. I have listed the G_m, μ, R_p, and P at the selected test points for information.

I ran the Sofia matching program for