

6P41S - The Output Beam Tetrode.

Translation by Steven Parfitt

From soviet document : <http://www.radiolamp.su/tube.php?name=6P41S>

Output Beam Tetrode

6P41S/ 6П41С

By Technical Specifications SD3.300.0973 TU

The main purpose - to work in blocks of frame and line scan and television devices, and power amplifiers and oscillators.

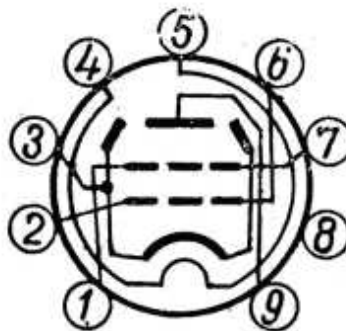
#### General Data

Cathode oxide - an indirect heating.

Design - glass. (small 9 pin base)

Weight maximum ... ..36 g

#### Diagram of electrode C Conclusions



1 – Second Screen

2 – First Screen

3 – Cathode,

4 - Heater

5 - Heater

6 - First Screen

7 - Second Screen

8 -

9 - Anode

#### Electrical Data

Heater voltage ( $\sim$ or $=$ ) .....	6.3 nominal
Current filament .....	1.1 + / - 0.1 amp
Anode voltage ( $=$ ) .....	190 V
Grid voltage of the second ( $=$ ) .....	190 V
Resistance in cathode circuit for self bias .....	300 Ohm
Anode current .....	66 + / - 10 mA
Anode current pulse $\circ$ .....	290 mA
	(not less than 250 mA)
Anode current at the beginning of the characteristics $\square$ .....	less than 100 uA
Grid current second .....	2.7 mA
	(less than 3.5 mA)
Grid current second in impulse .....	0.11 anode current
	(pulse current no more than
	0.23X the anode current pulse)
The steepness of the characteristics .....	8.4 mA/V
	(not less than 6.7 mA / V)
Internal resistance .....	about 12 K-Ohm

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Shutoff grid current first .....	Less than 1uA
Microphonic noise*.....	no more than 500 mV (rms)
Longevity (Life at 90%.....)	not less than 2000 Hrs
Longevity criteria:	
Anode current pulse○ .....	not less than 200 mA
Reverse grid current first .....	not more than 2 uA
(for 80% of the lamps .....	no more than 1.2 uA)

○ at the anode voltage of 50 V, voltage grid 170 in the second, voltage grid of the first minus 1.

□ at a voltage of the anode and the grid 170 in the second, voltage grid of the first minus 55.

\* The resistance of the anode circuit of 0.25 K ohm the vibration frequency of 50 Cps.

acceleration 2.5 g

### Inter-electrode Capacitance

Input .....	about 23 pf
Output .....	about 10, 5 pf
Grid to Plate .....	around 0.5 pf

### Maximum Allowable Operating Data

Heater voltage (~ or =)	
The greatest.....	6.9 v
The lowest .....	5.7 v
Maximum voltage anode (=) .....	400 v
Maximum voltage at the anode cutoff or cold lamp (=) ○ .....	2,5 kV
Maximum voltage anode cutoff	
Lamp when working in line scan television (=) ○ .....	6.5 kv
Maximum voltage grid second (=) .....	350 v
Maximum voltage second grid cutoff, or cold lamp (=) ○ .....	550 v
Largest negative pulse voltage of the first grid .....	350 v
Lowest power dissipation anode .....	14 W <sup>1</sup>
Smallest estimated power dissipation anode .....	12 W
Maximum power dissipation second grid .....	3 W
Maximum rated power dissipation second grid □.....	2 W
The highest cathode current. ....	100 mA
The highest voltage between the cathode and heater (=):	
At positive voltage heater. ....	100 V
At negative stress voltage heater.....	200 V
The highest temperature of the cylinder. ....	220 ° C

○ When the anode current of 10 microamperes.

□ the calculated value of the power dissipated by the anodes in the calculation of the equipment or grid second, is obtained for tubes with nominal parameter values.

**Stability against external influences**

Ambient temperature:

The greatest. ....	+ 70 ° C
The smallest. ....	-60 ° C
Relative humidity at temperature 10 ° C .....	95-98%
Vibration .....	2.5g
Vibration resistance .....	2.5g
Multiple Shock .....	35 g

**Featured Profiles Applications**

1. Single-cycle mode Gain  
Equivalent Regime Vertical (Sweep?)  
(Class A)

The supply voltage of the anode .....	230 V
The power supply voltage grid second .....	170 V
Voltage grid of the first .....	minus 24 V
Alternating voltage grid of the first .....	7 V (rms)
Resistance anode load .....	5 K Ohm
anode current. ....	45 mA
grid current second .....	5 mA
Output power .....	4 W
THD .....	6%

2. Mode Push Pull Power Amp  
Class B

The supply voltage of the anode .....	500V
The supply voltage of the second grid .....	170V
Grid Voltage .....	-35V
Alternating voltage grid of the first .....	24 V rms
The load resistance between the anodes .....	8 Kohm
Resistance in the second grid circuit of each lamp .....	470 Ohm
Anode current. ....	2X80 mA
Grid current second .....	2X8 ma
Output power .....	60 W
THD .....	about 10%

## Warranty period of storage in

Storage conditions .....	4 years
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## NOTES:

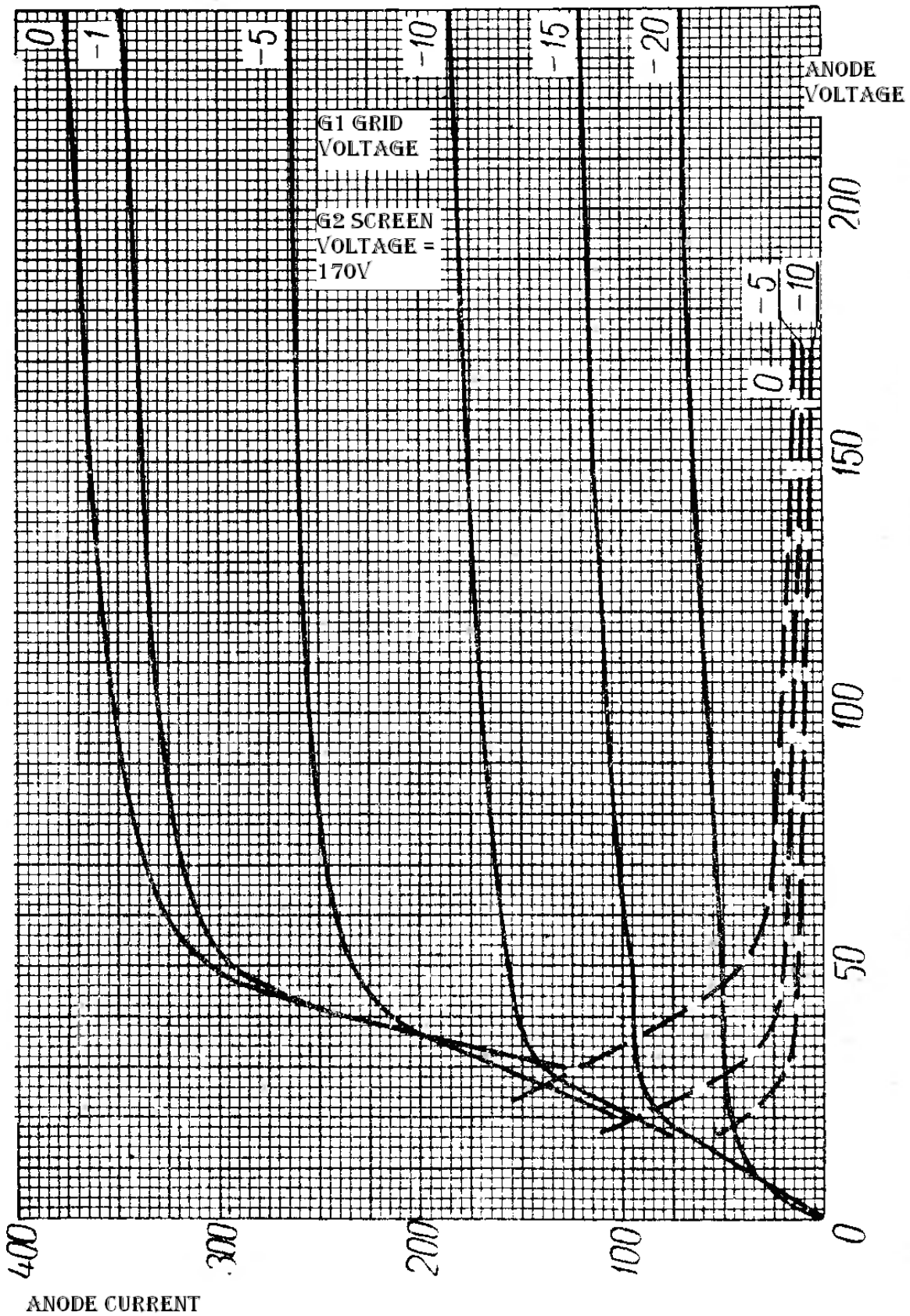
<sup>1</sup>The anode dissipation rating does not make sense in light of the claim of 60W out from a PP amp running Class B.  $500V * .080A = 40W$  which may make sense in class B. This becomes 20W dissipation at 50% duty cycle zero bias. This may require closer to 25W dissipation, which is close to the measured threshold of red plating of 30W+. SPP 11-20-2011

<sup>2</sup> = individual word translations looks like Vertical Sweep for TV?

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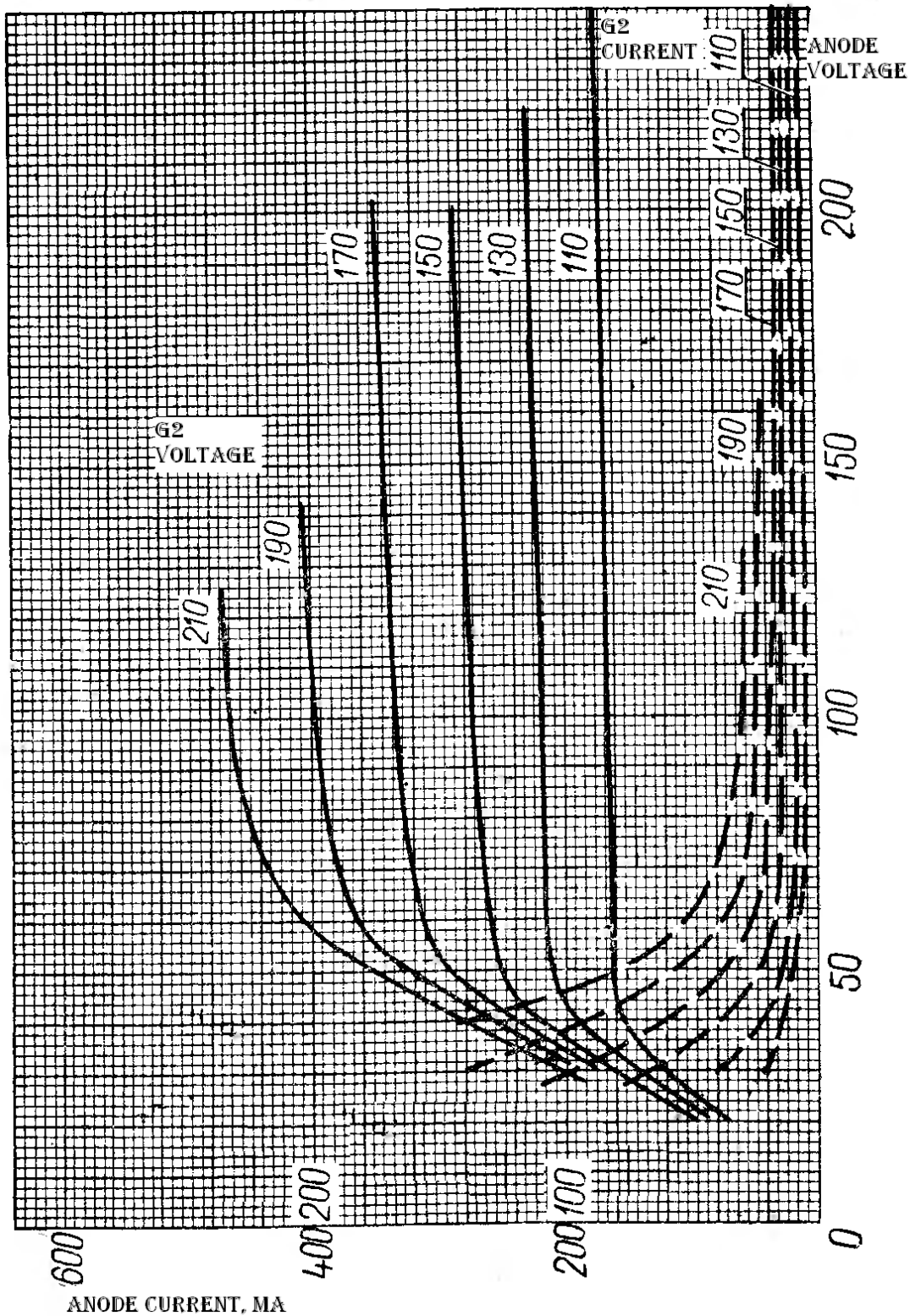


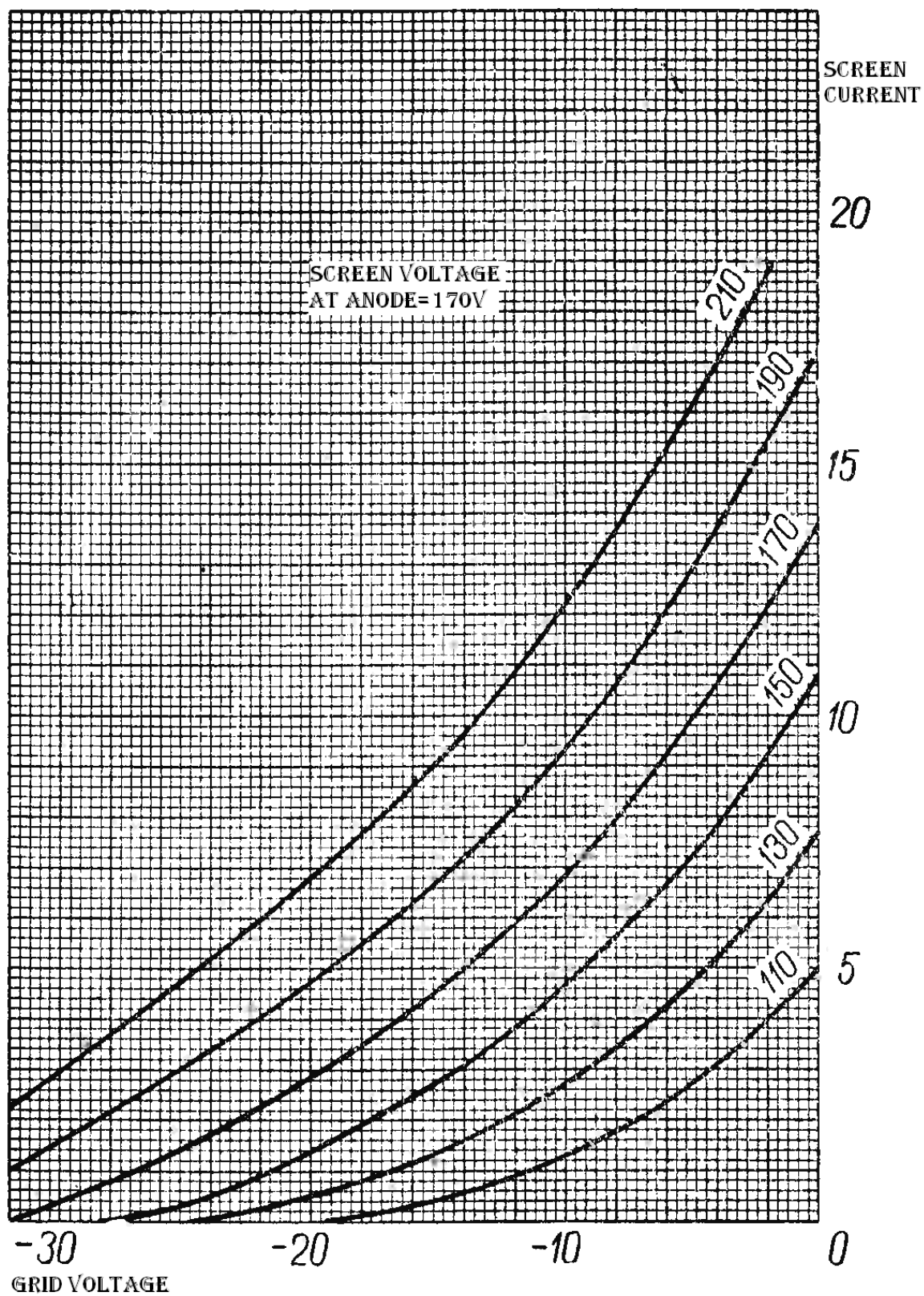
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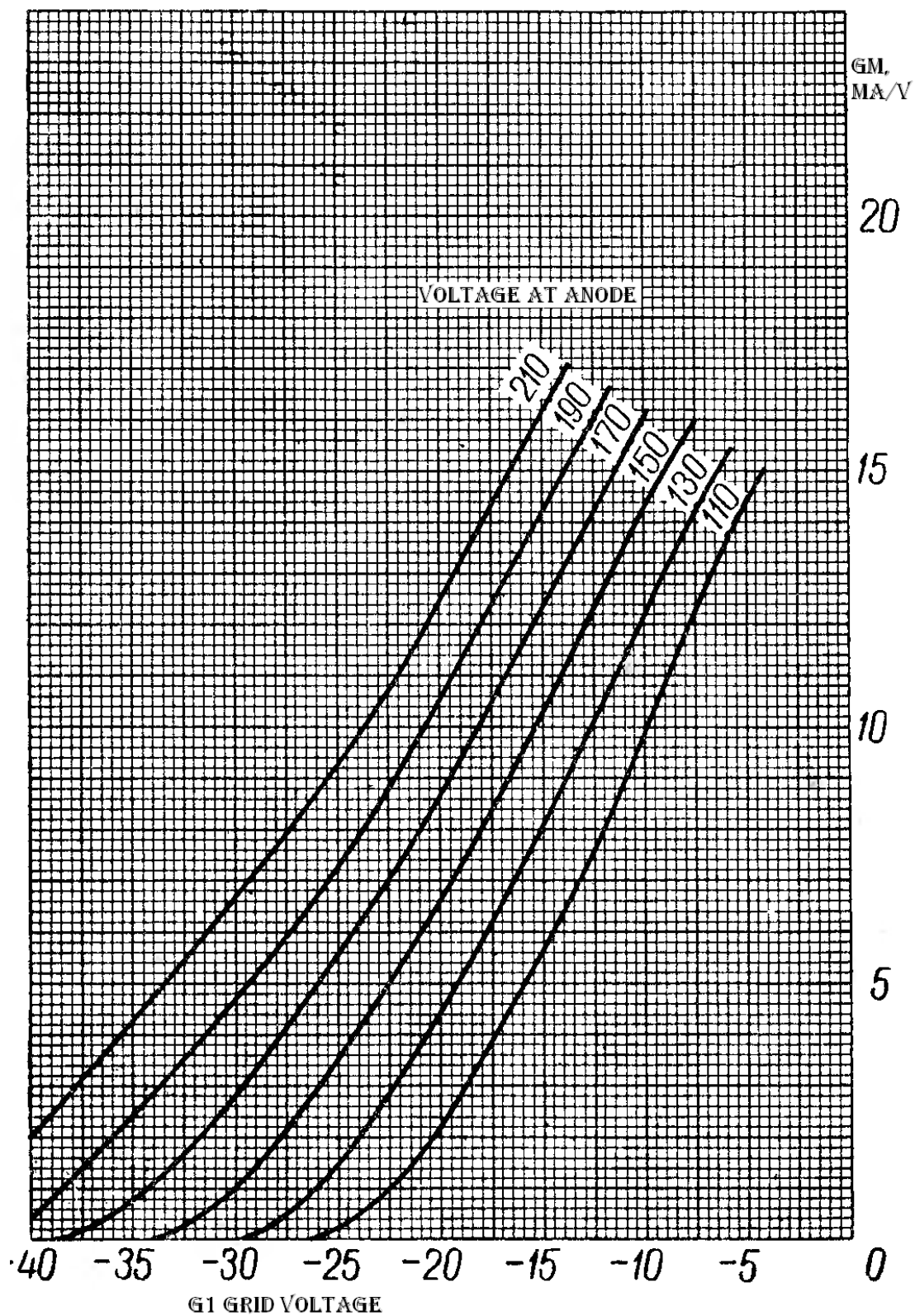
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G1 held at -1V, left scale vertical inwards is G1 current? = 0.5X anode current?



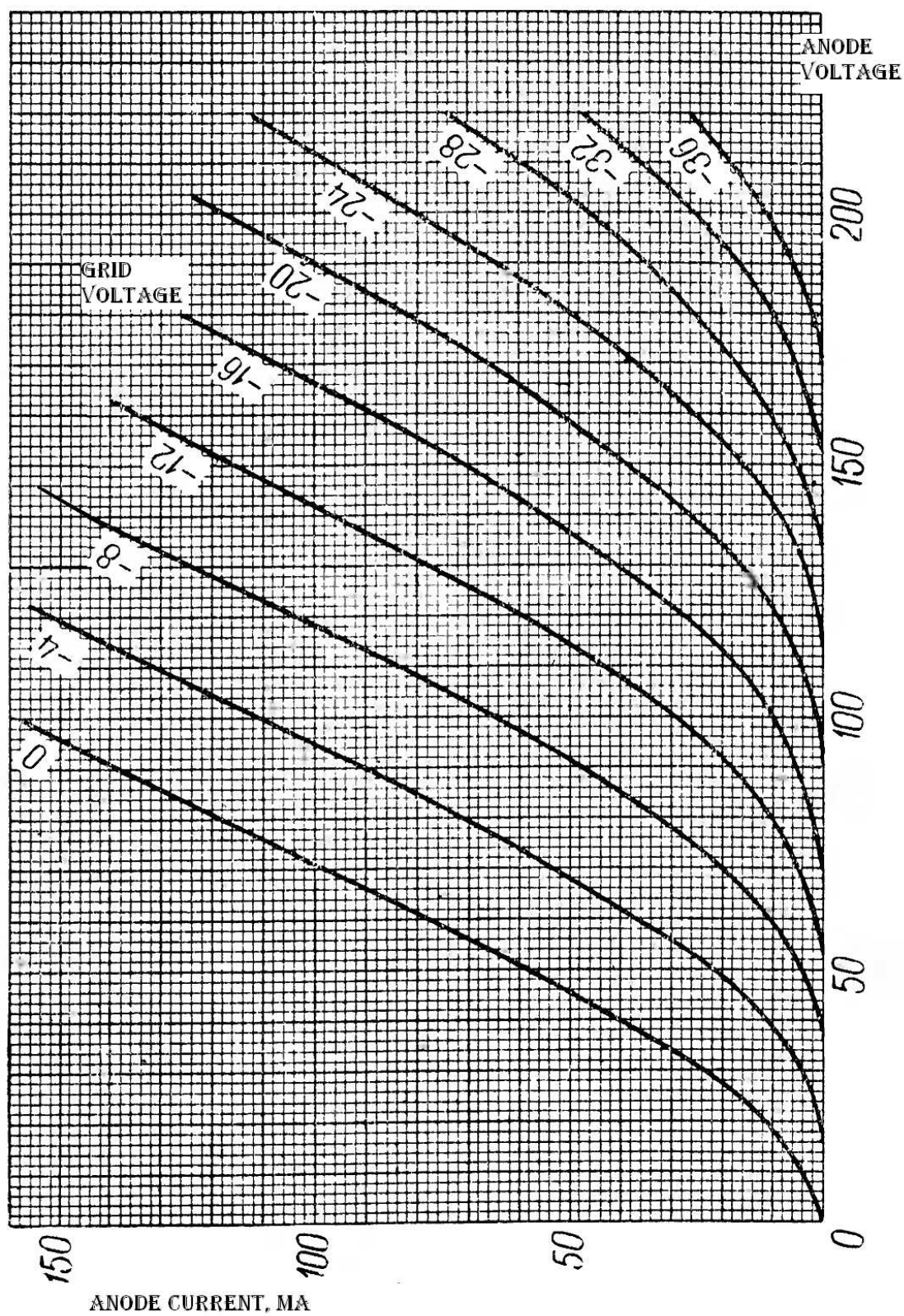




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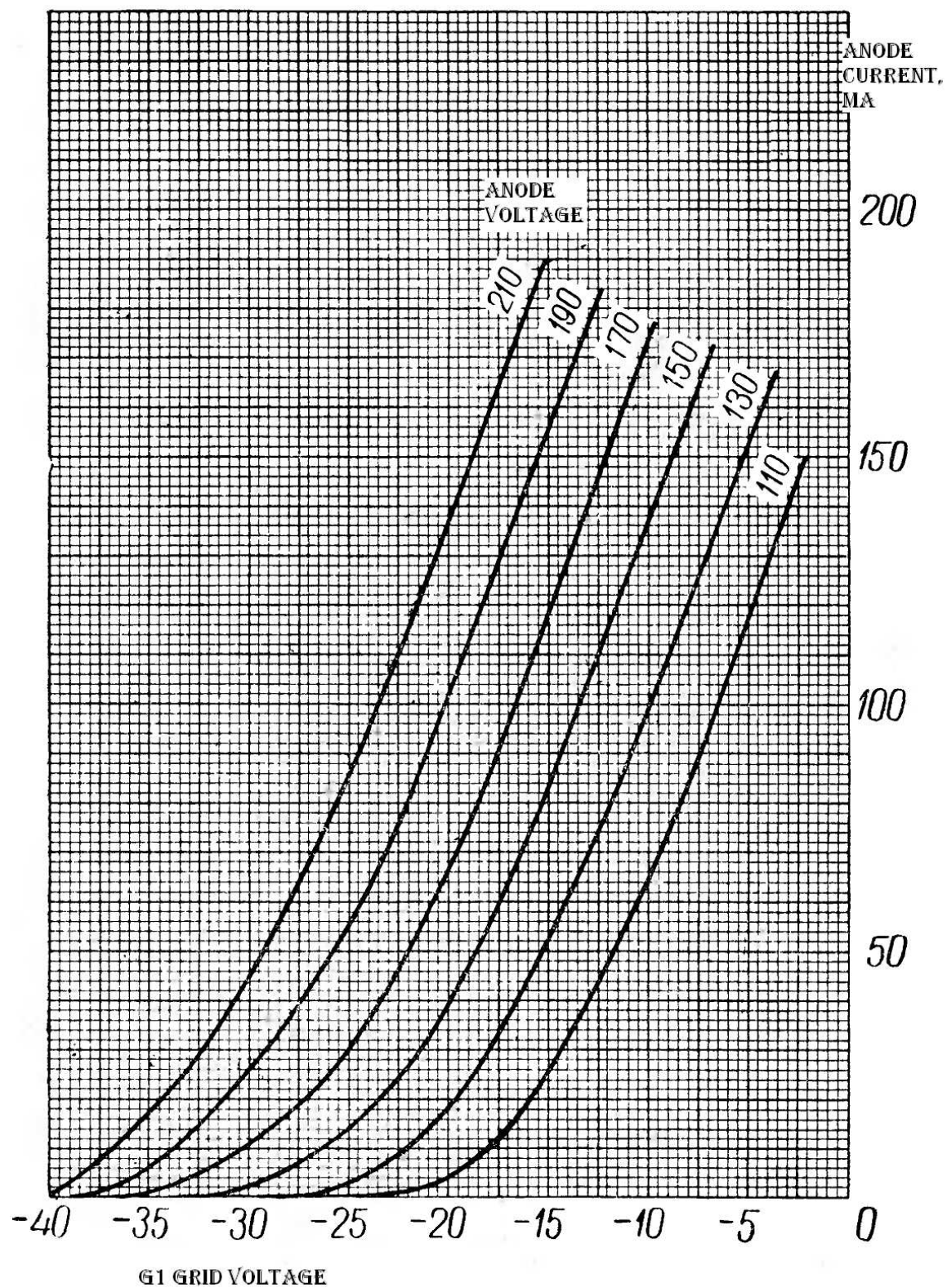
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Anode Voltage held at 170V

