

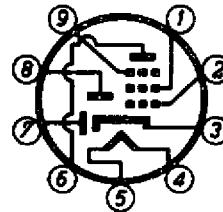
Type 6N8

Double Diode-Pentode for R.F., I.F. and A.F. Amplification

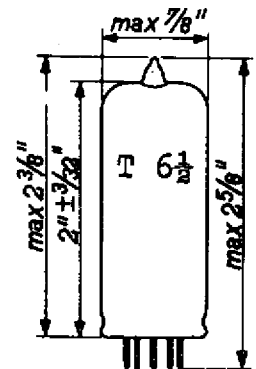
Physical Specifications

Cathode	Coated unipotential
Base	Small button noval 9-pin
Bulb	T 6½
Maximum overall length	2-5/8 inches
Maximum seated height	2-3/8 inches
Bulb length excluding tip	2±3/32 inches
Maximum diameter	7/8 inches
Mounting position	any
Basing connections - JEDEC basing designation	9T-0-0

- Pin 1 - Pentode screen grid
- Pin 2 - Pentode control grid
- Pin 3 - Cathode and internal shield
- Pin 4 - Heater
- Pin 5 - Heater
- Pin 6 - Pentode plate
- Pin 7 - Diode No.1 plate
- Pin 8 - Diode No.2 plate
- Pin 9 - Pentode grid No.3



9T-0-0



General Electrical Data

Heater voltage	6.3 volts
Heater current	0.3 amperes

Direct interelectrode capacitances

Pentode grid No.1 to all other electrodes	4.0	μμF
Pentode plate to all other electrodes	4.6	μμF
Between pentode plate and pentode grid No.1	max. 0.002	μμF
Between pentode grid No.1 and heater	max. 0.06	μμF
Between diode No.1 plate and cathode	2.15	μμF
Between diode No.2 plate and cathode	2.35	μμF
Between diode plates	max. 0.3	μμF
Between diode No.1 plate and heater	max. 0.02	μμF
Between diode No.2 plate and heater	max. 0.01	μμF

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(Continued)

Direct interelectrode capacitances (continued)

Between diode No.1 plate and grid No.1	max. 0.0008	μμF
Between diode No.2 plate and grid No.1	max. 0.001	μμF
Between diode No.1 plate and pentode plate	max. 0.2	μμF
Between diode No.2 plate and pentode plate	max. 0.1	μμF

Maximum ratings

Pentode section

Plate voltage (without current)	550 volts
Plate voltage	250 volts
Plate dissipation	2 watts
Screen grid voltage (without current)	550 volts
Screen grid voltage (plate current less than 2.5 ma)	250 volts
Screen grid voltage (plate current = 5 ma)	125 volts
Screen grid dissipation	0.3 watts
Cathode current	10 ma
Grid No.1 voltage at grid No.1 current = +0.3 μa	-1.3 volts
External resistance between grid No.1 and cathode	3 megohms ¹⁾
External resistance between heater and cathode	20,000 ohms
Voltage between heater and cathode	50 volts

Diode sections

Plate voltage (peak value)	200 volts
Plate current	0.8 ma
Plate voltage at plate current = +0.3 μa	-1.3 volts
External resistance between heater and cathode	20,000 ohms
Voltage between heater and cathode	50 volts

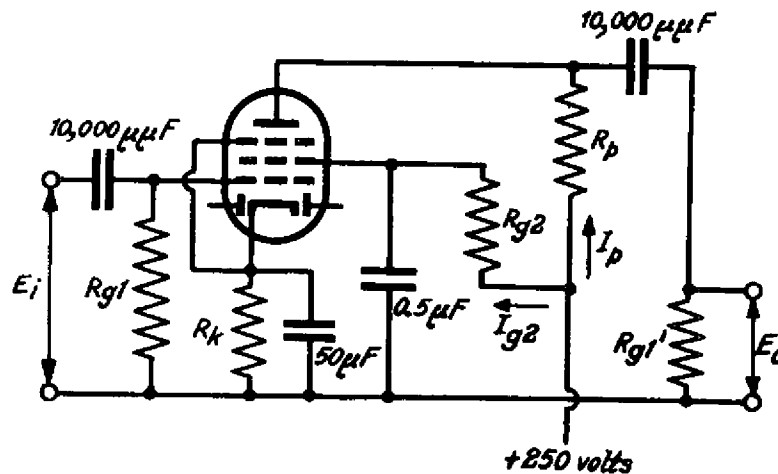
¹⁾ The maximum value of this resistor is 22 megohms if the grid bias is only obtained by the voltage drop across the grid leak.

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Operating characteristics of the pentode section as R.F. or I.F. amplifier

Plate and supply voltage	250	volts
Grid No.3 voltage	0	volts
Screen grid series resistor	95,000	ohms
Cathode resistor	295	ohms
Grid No.1 voltage	-2	-41.5
		volts
Screen grid voltage	85	250
		volts
Plate current	5	-
		milli-amps
Screen grid current	1,75	-
		milli-amps
Transconductance	2200	22
		micromhos
Plate resistance	1,6	>10
		megohms
Amplification factor of grid No.2 with respect to grid No.1	19	19
Equivalent noise resistance	6,200	-
		ohms

Operating characteristics of the pentode section as A.F. amplifier



In circuits with a loudspeaker with an acoustical efficiency of 5% this valve can be used without special precautions against microphony if the input voltage for an output of 50 milli-watts is more than 10 milli-volts

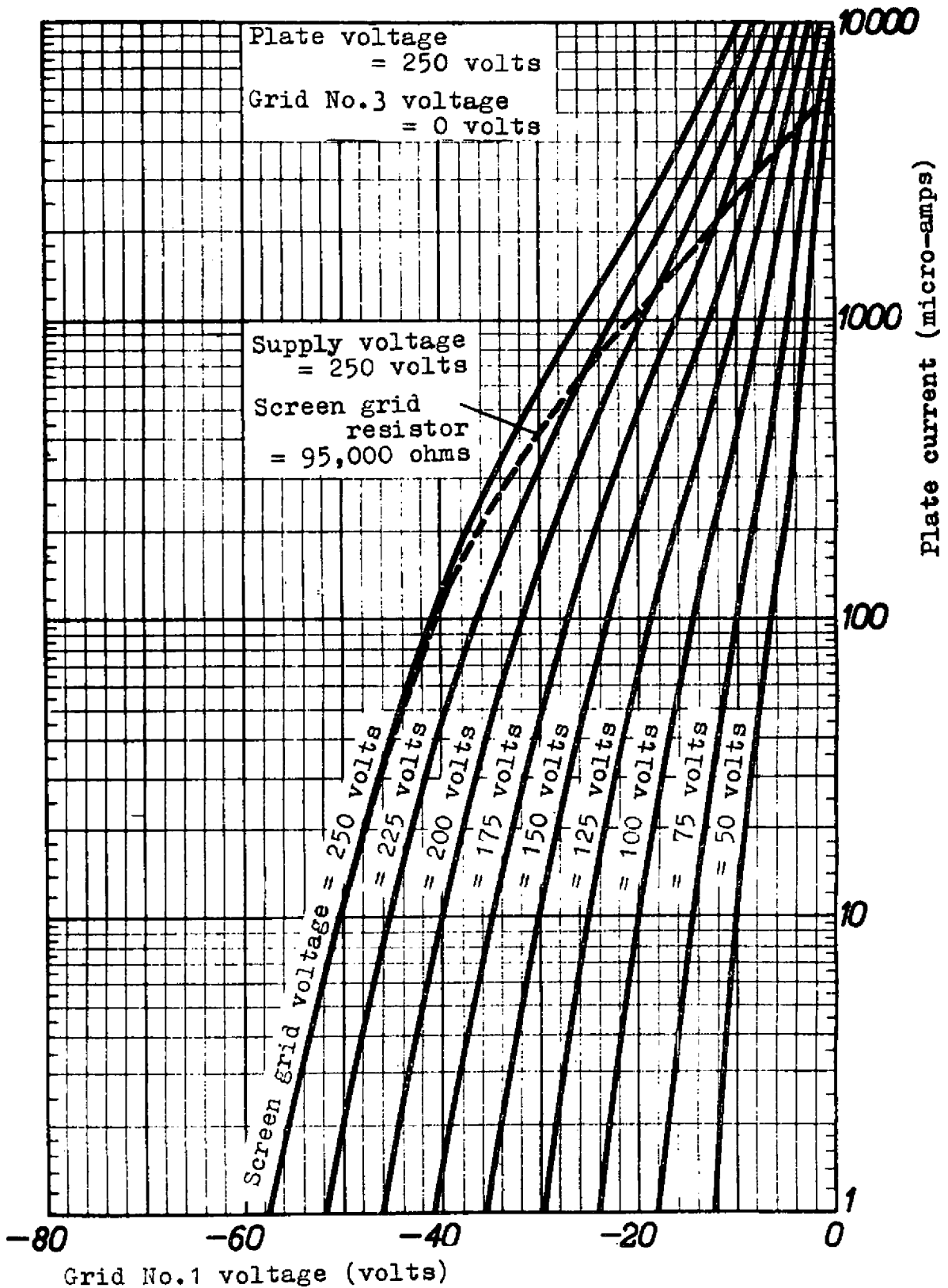
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R_p (M Ω)	R_{g2} (M Ω)	R_{g1} (M Ω)	R_k (Ω)	R'_{g1} (M Ω)	I_p (ma)	I_{g2} (ma)	$\frac{E_o}{E_1}$	Distortion (%) at E_o (r.m.s.) =		
								3volts	5volts	8volts
0.22	0.68	1	1200	0.68	0.88	0.33	150	0,5	0,8	1.2
0.10	0.27	1	560	0.33	1,93	0.75	100	0.45	0,75	1.15
0,22	0.68	10	0	0.68	0.94	0.35	185	0.7	0.9	1,2
0.10	0.27	10	0	0.33	2.04	0.80	125	0.6	0.75	0.9

Operating characteristics of the pentode section as A.F.
amplifier in triode connection
(screen grid connected to plate)

R_p (M Ω)	R_{g1} (M Ω)	R_k (Ω)	R'_{g1} (M Ω)	I_p (ma)	$\frac{E_o}{E_1}$	Distortion (%) at E_o (r.m.s.) =		
						3volts	5volts	8volts
0.1	1	820	0.33	2.08	14.5	1.6	2.5	4.3
0.047	1	560	0.15	4.1	13	1.3	2.0	2.9
0.1	10	0	0.33	2.16	15	2.0	3.1	4.8
0.047	10	0	0.15	4.5	15	1.7	2.7	4.1

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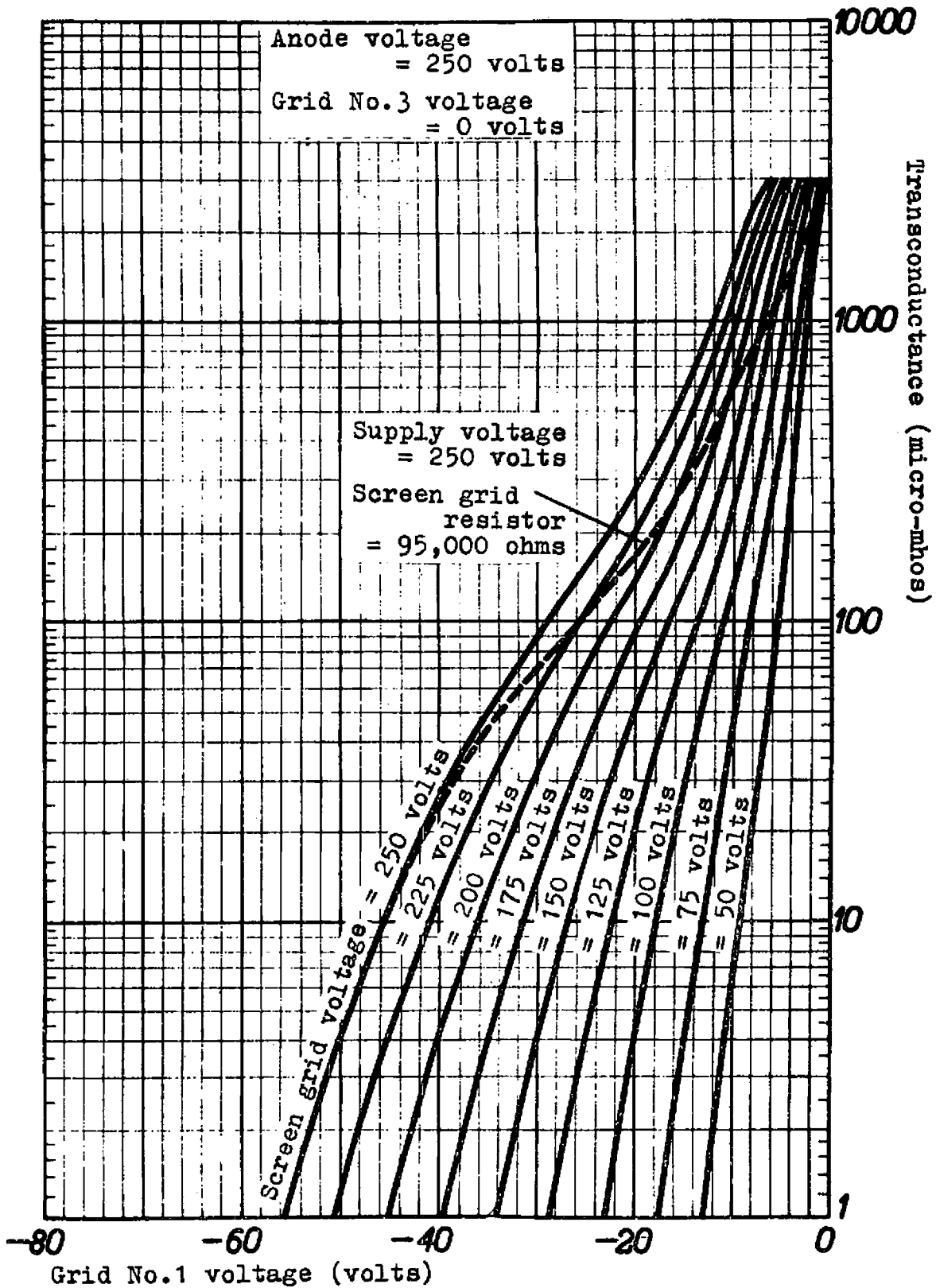


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A.

N.V. PHILIPS' GLOEILAMPENFABRIEKEN, EINDHOVEN, HOLLAND

Type 6N8

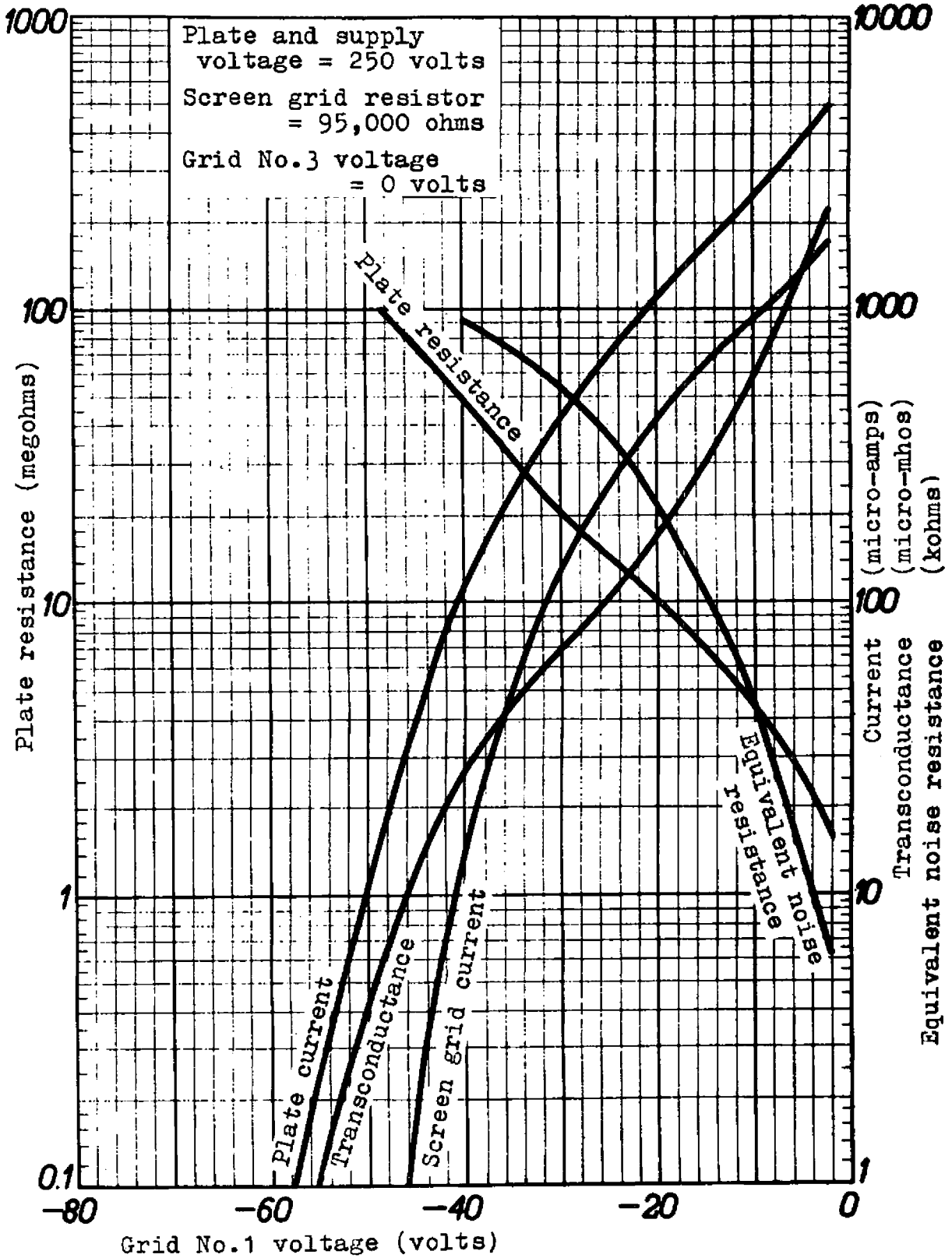


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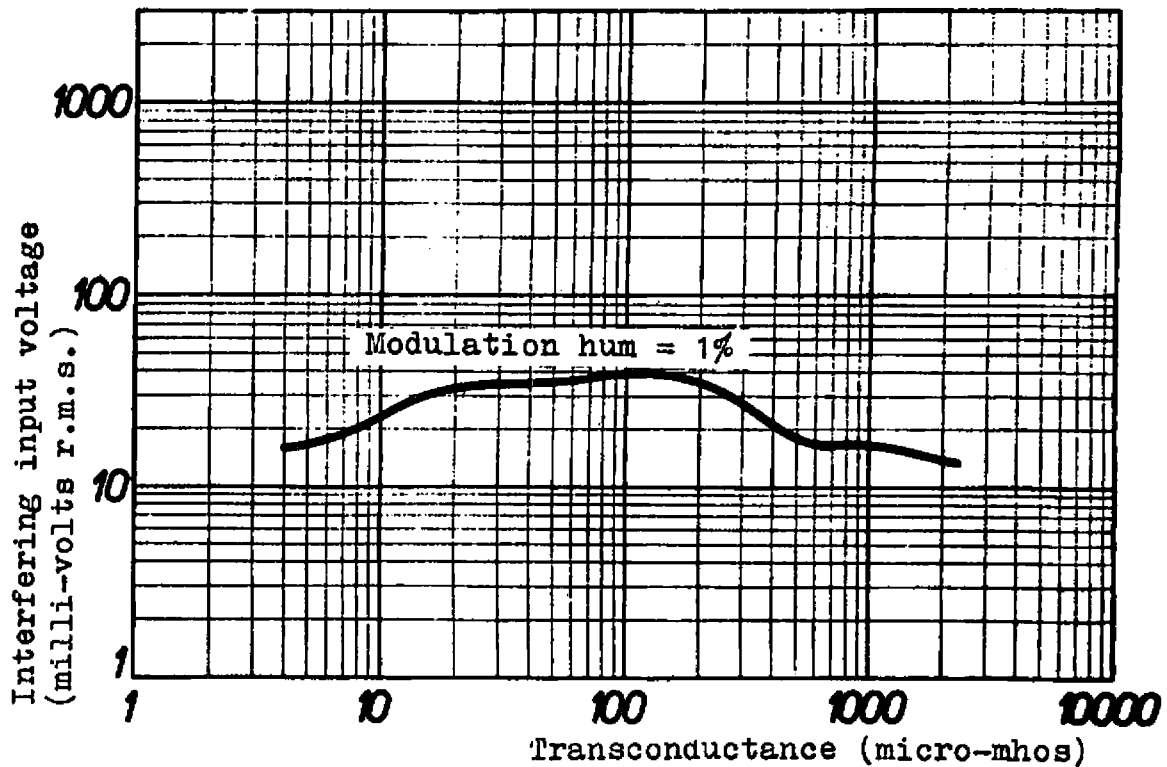
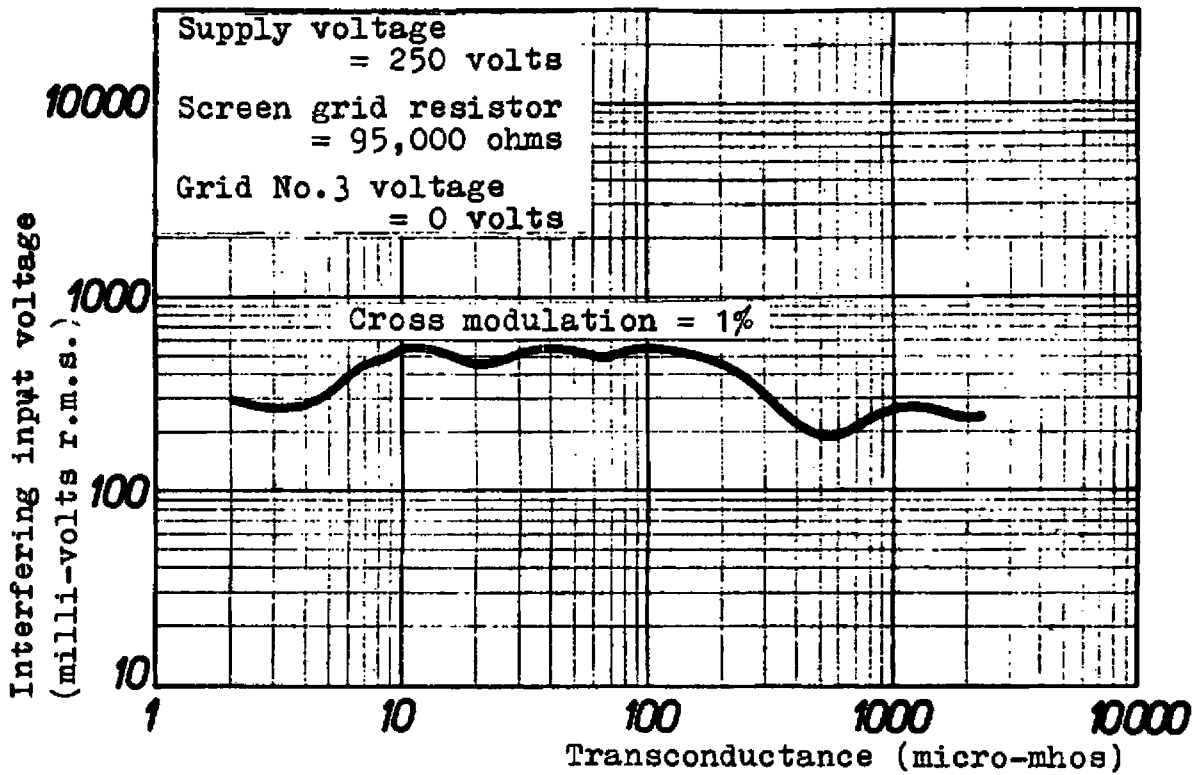


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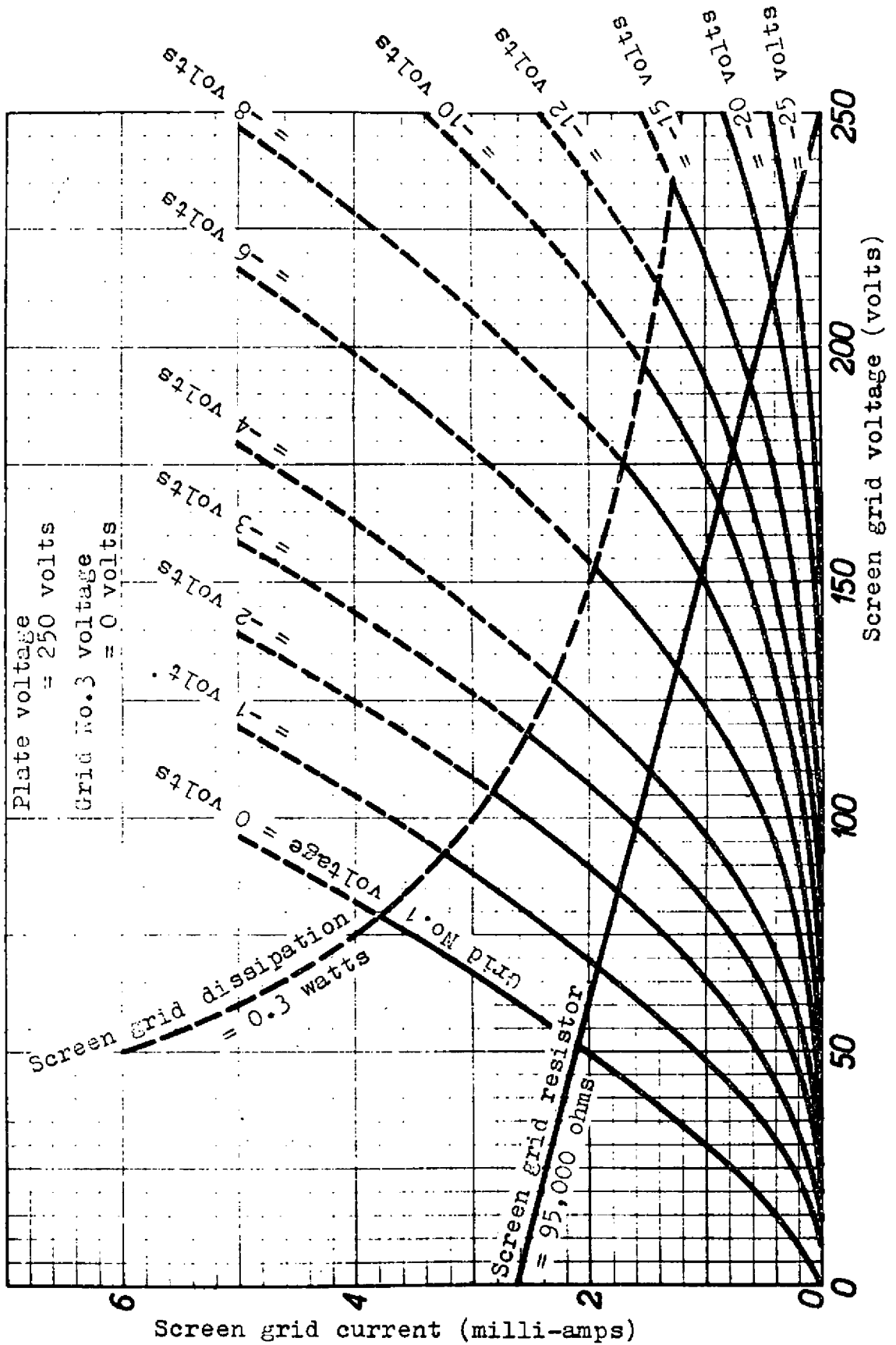


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E.