from JETEC release #1862, March 4, 1957
sponsor: Rogers Majestic Electronics, Ltd.

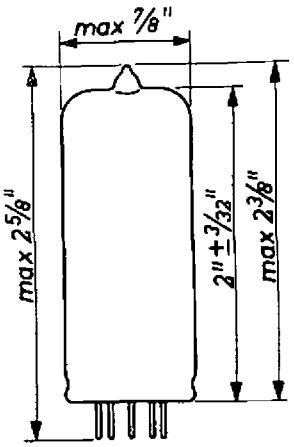
12AD5

REMOTE CUT-OFF R.F. PENTODE

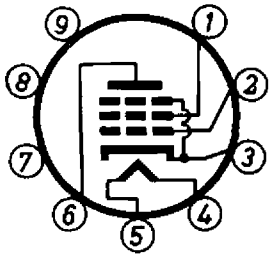
MECHANICAL DATA

Cathode	Coated unipotential
Base	E9-1
Bulb	T6½
RETMA basing designation	~~9CA~~ 9AZ
Mounting position	any

TUBE OUTLINE



BOTTOM VIEW OF BASE



BASE PIN No.	ELEMENT
1	Grid No.2
2	Grid No.1
3	Cathode, grid No.3, internal shield
4	Heater
5	Heater
6	Plate
7	Internal connection
8	Internal connection
9	No connection

HEATER DATA

Heater voltage	12.6 volts
Heater current	0.1 amp

DIRECT INTERELECTRODE CAPACITANCES

Output capacitance	8.1 μμF
Input capacitance	5.1 μμF
Grid No.1 to plate	max. 0.002 μμF
Grid No.1 to heater	max. 0.05 μμF

MAXIMUM RATINGS (Design Center Values)

Plate voltage (without current)	550 volts
Plate voltage	250 volts
Plate dissipation	2.0 watts
Grid No.2 voltage (without current)	550 volts
Grid No.2 voltage (plate current less than 4 mA)	250 volts
Grid No.2 voltage (plate current = 7.2 mA)	150 volts

MAXIMUM RATINGS (Design Center Values) continued

Grid No.2 dissipation	0.3	watts
Cathode current	10	mamps
External resistance between grid No.1 and cathode	3	megohms
External resistance between heater and cathode	20,000	ohms
Voltage between heater and cathode	150	volts

OPERATING CHARACTERISTICS AS R.F. OR I.F. AMPLIFIER

A. with sliding grid No.2 voltage

Plate and supply voltage	100		170		volts
Grid No.2 series resistor	40,000		40,000		ohms
Cathode resistor	325		325		ohms
Grid No.1 voltage	-1.4	-17	-2.5	-28	volts
Plate current	3.3	-	6.0	-	mamps
Grid No.2 current	1.0	-	1.75	-	mamps
Transconductance	1900	19	2200	22	µmhos
Plate resistance	0.8	>10	1.0	>10	megohms
Amplification factor of grid No.2 with respect to grid No.1	18	-	18	-	
Equivalent noise resistance	5500	-	6500	-	ohms

Plate and supply voltage	200		volts
Grid No.2 series resistor	40,000		ohms
Cathode resistor	325		ohms
Grid No.1 voltage	-3	-34	volts
Plate current	7.2	-	mamps
Grid No.2 current	2.1	-	mamps
Transconductance	2300	23	µmhos
Plate resistance	1.0	>10	megohms
Amplification factor of grid No.2 with respect to grid No.1	18	-	
Equivalent noise resistance	7000	-	ohms

OPERATING CHARACTERISTICS AS R.F. OR I.F. AMPLIFIER

B. with fixed grid No.2 voltage

Plate voltage	100		volts
Grid No.2 voltage	100		volts
Cathode resistor	325		ohms
Grid No.1 voltage	-2.5	-16.5	volts
Plate current	6.0	-	mamps
Grid No.2 current	1.75	-	mamps
Transconductance	2200	22	µmhos
Plate resistance	0.6	>10	megohms
Amplification factor of grid No.2 with respect to grid No.1	18	-	
Equivalent noise resistance	6500	-	ohms

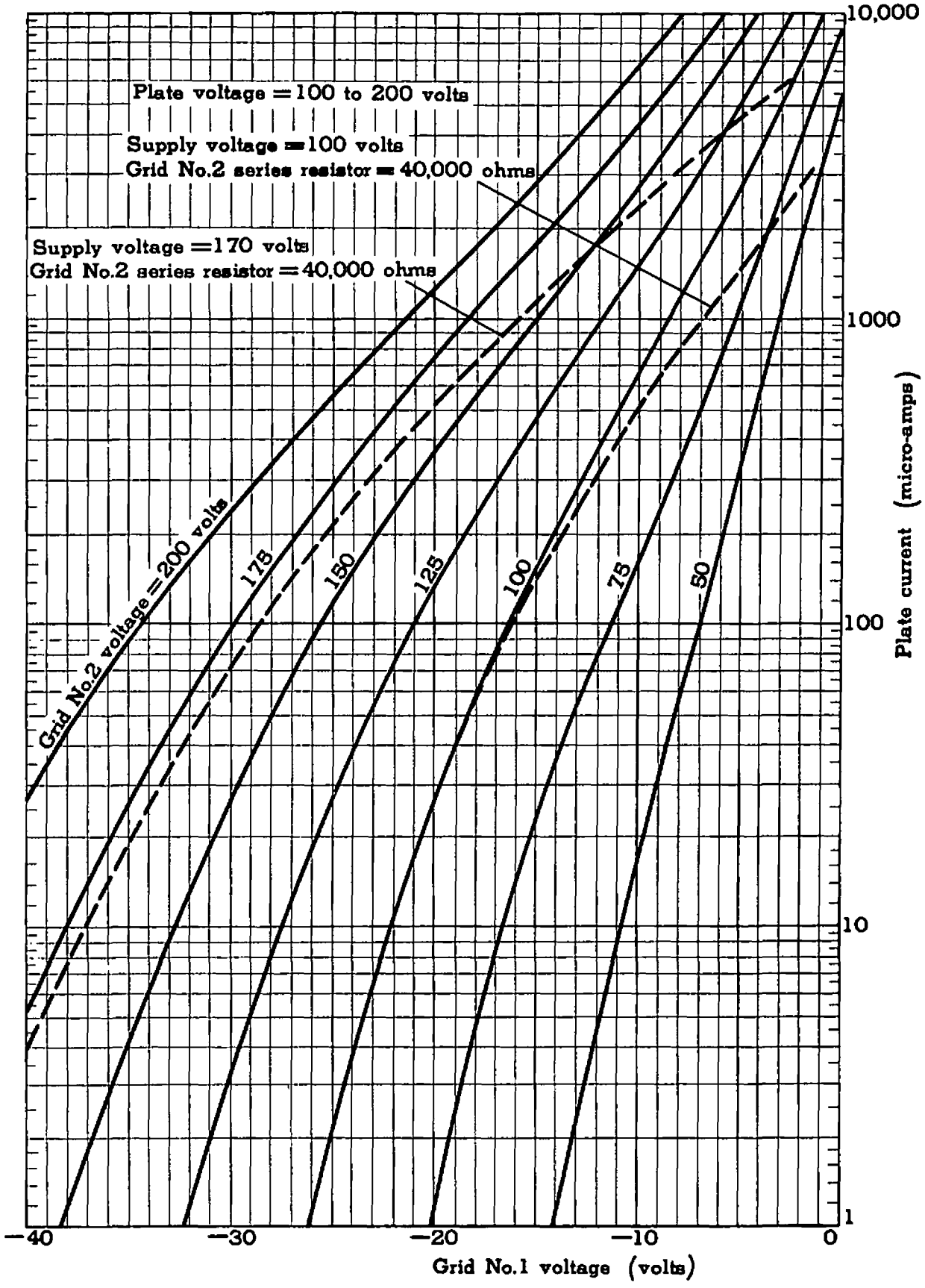


Plate voltage = 100 to 200 volts
Supply voltage = 100 volts
Grid No.2 series resistor = 40,000 ohms
Supply voltage = 170 volts
Grid No.2 series resistor = 40,000 ohms
Grid No.2 voltage = 200 volts
175
150
125
100
75
50
10,000
1000
100
10
1
Plate current (micro-amps)
−40
−30
−20
−10
0
Grid No.1 voltage (volts)

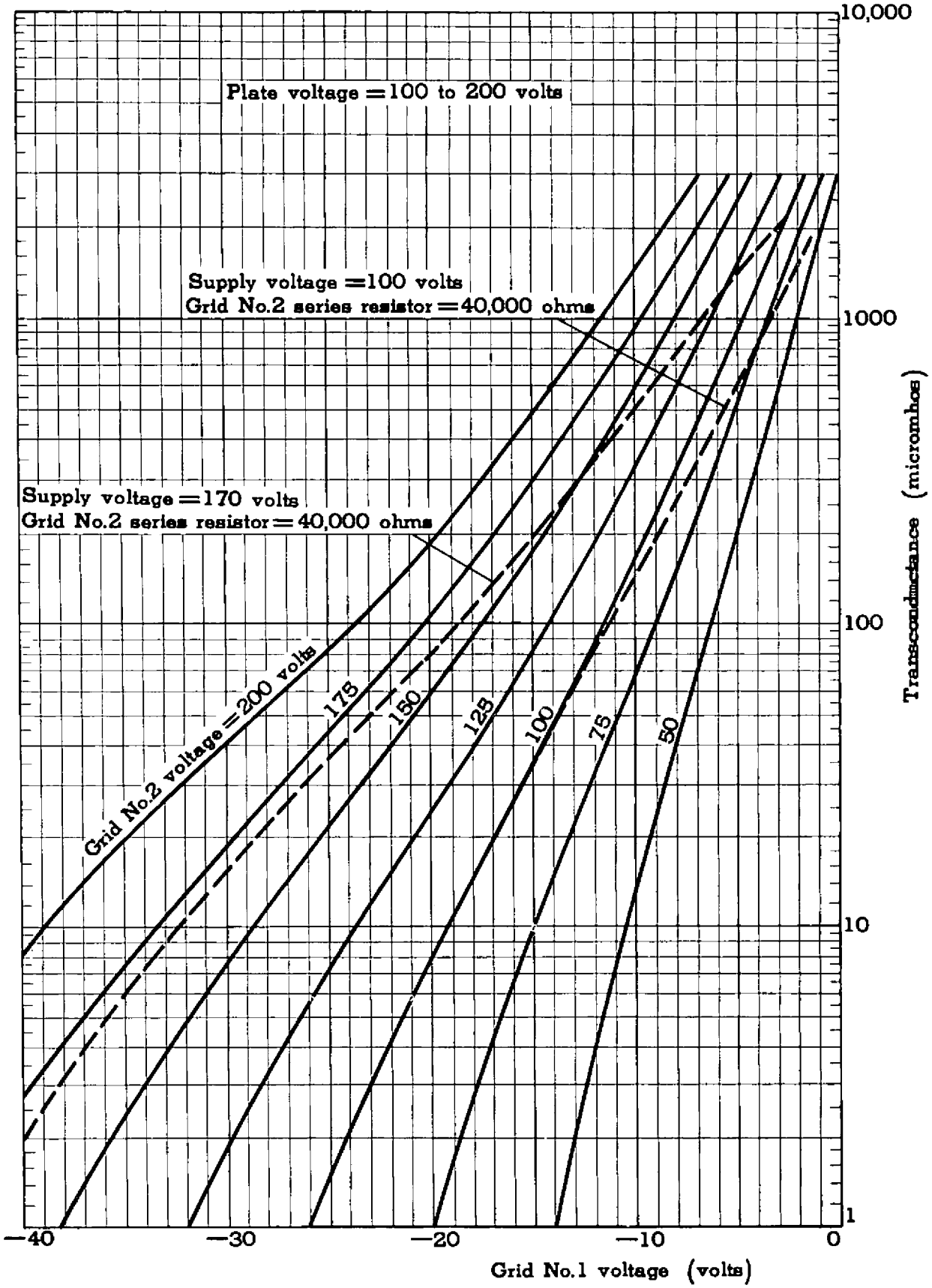


Plate voltage = 100 to 200 volts
Supply voltage = 100 volts
Grid No.2 series resistor = 40,000 ohms
Supply voltage = 170 volts
Grid No.2 series resistor = 40,000 ohms
Grid No.2 voltage = 200 volts
175
150
125
100
75
50
10,000
1000
100
10
1
Transconductance (micromhos)
−40
−30
−20
−10
0
Grid No.1 voltage (volts)

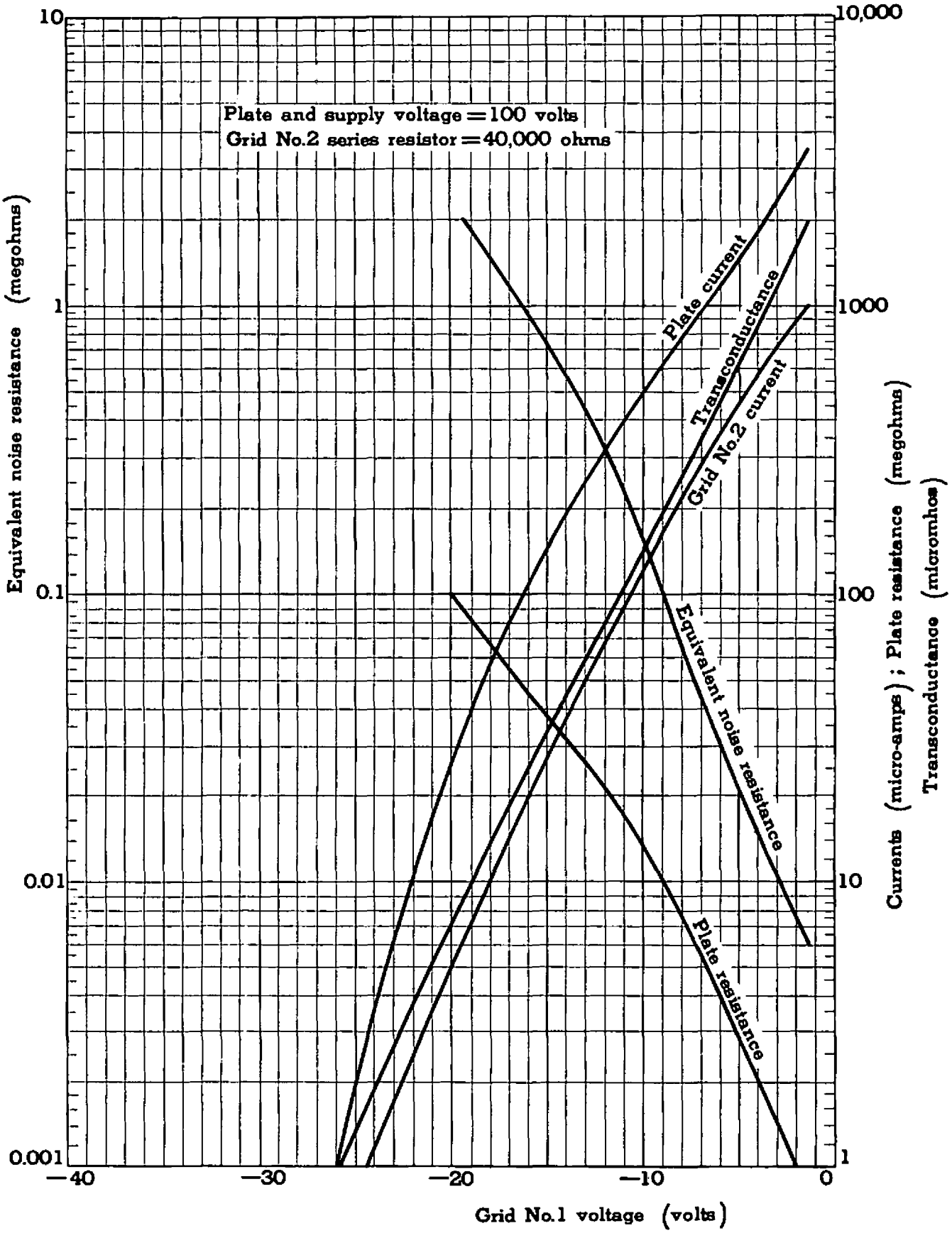


Plate and supply voltage = 100 volts
Grid No.2 series resistor = 40,000 ohms
Plate current
Transconductance
Grid No.2 current
Equivalent noise resistance
Plate resistance
Equivalent noise resistance (megohms)
Currents (micro-amps) ; Plate resistance (megohms)
Transconductance (micromhos)
Grid No.1 voltage (volts)
10
1
0.1
0.01
0.001
10,000
1000
100
10
1
−40
−30
−20
−10
0

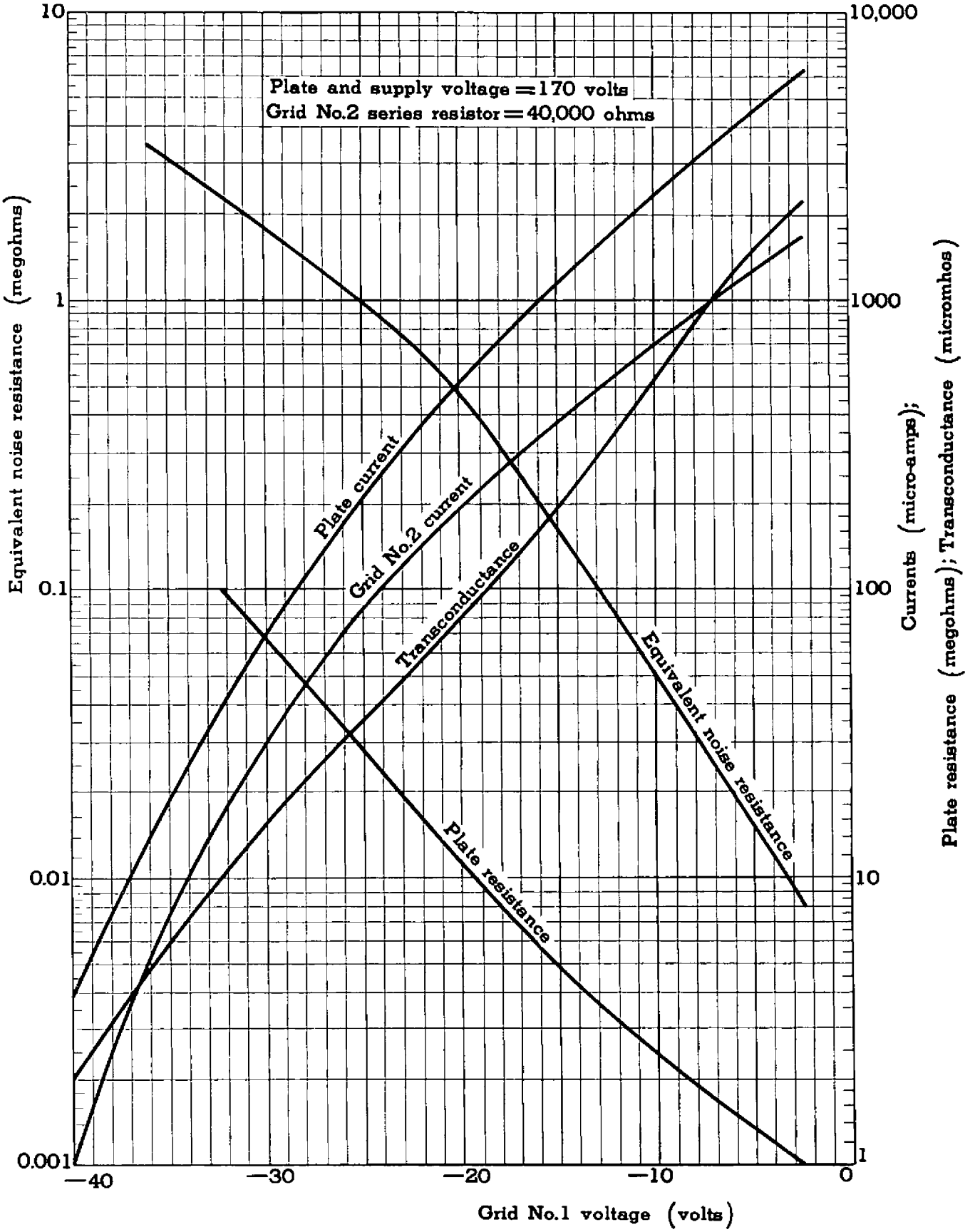


Plate and supply voltage = 170 volts
Grid No.2 series resistor = 40,000 ohms
Plate current
Grid No.2 current
Transconductance
Equivalent noise resistance
Plate resistance
Equivalent noise resistance (megohms)
Currents (micro-amps); Plate resistance (megohms); Transconductance (micromhos)
Grid No.1 voltage (volts)
10
1
0.1
0.01
0.001
10,000
1000
100
10
1
−40
−30
−20
−10
0

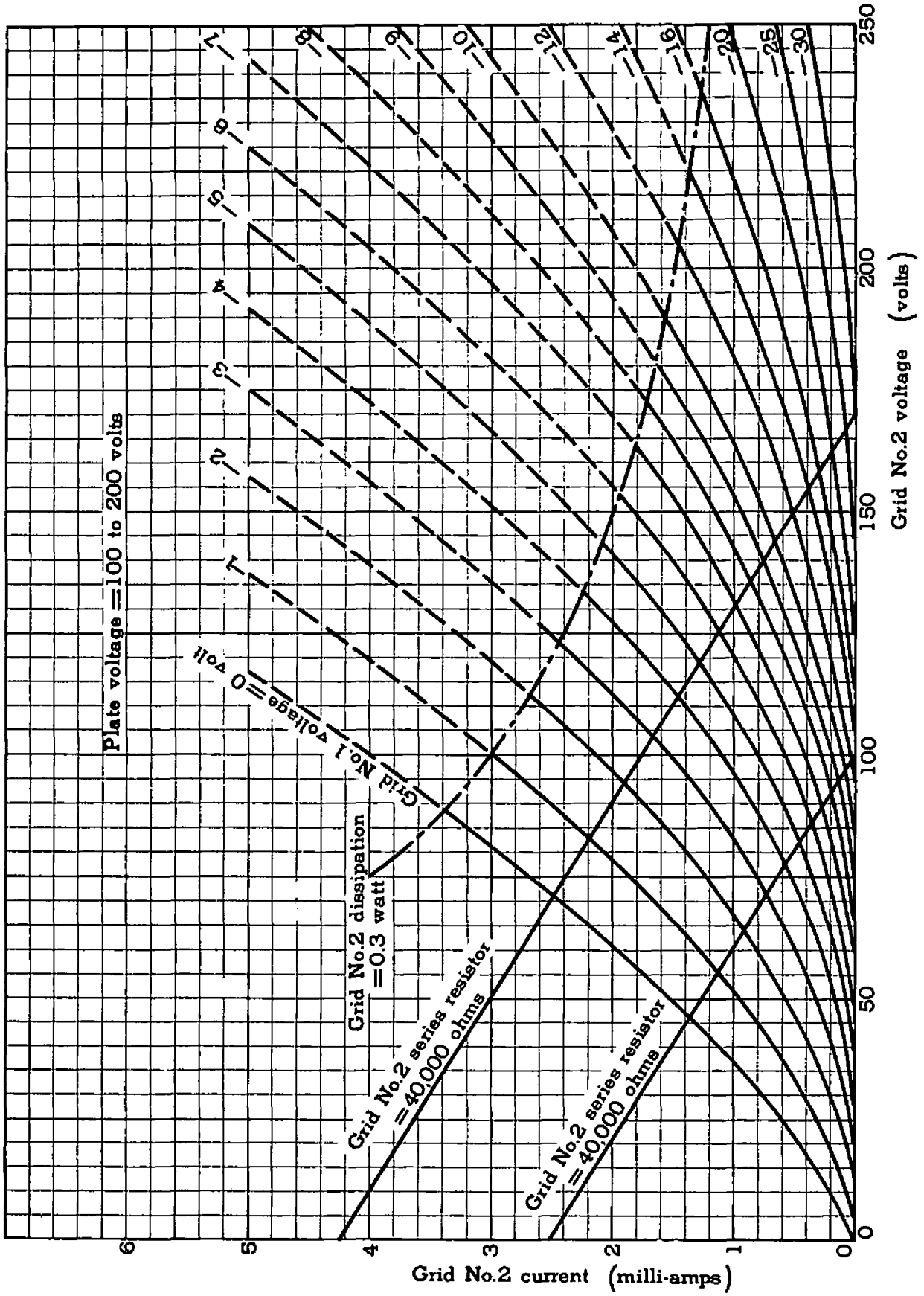


Plate voltage = 100 to 200 volts
Grid No.1 voltage = 0 volt
Grid No.2 dissipation = 0.3 watt
Grid No.2 series resistor = 40,000 ohms
Grid No.2 series resistor = 40,000 ohms
1
2
3
4
5
6
7
8
9
10
12
14
16
20
25
30
Grid No.2 voltage (volts)
0
50
100
150
200
250
Grid No.2 current (milli-amps)
0
1
2
3
4
5
6