Rogers Electronic Tubes & Components

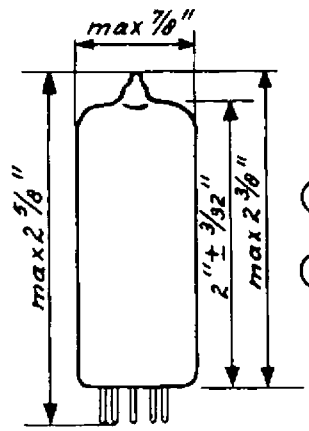
6 DR 8

Description: Double-diode-pentode for use as I.F. amplifier, detector and for automatic gain control in car-radio sets to be operated directly from a storage battery.

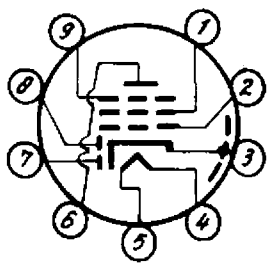
Mechanical data

Cathode	coated, unipotential
Base	E 9-1
Bulb	T 6 1/2
Outline	6-3
Basing designation	9 HE
Mounting position	any

TUBE OUTLINE



BOTTOM VIEW OF BASE



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

Heater data

Heater voltage	6.3 volts
Heater current	300 mamps

Direct interelectrode capacitances

Pentode section	
Grid No. 1 to all other elements except plate	5.0 µµF
Plate to all other elements except grid No. 1	5.2 µµF
Plate to grid No. 1	max. 0.0025 µµF
Diode section	
Diode plate No. 1 to cathode	2.5 µµF
Diode plate No. 2 to cathode	2.5 µµF
Diode plate No. 1 to diode plate No. 2	max. 0.25 µµF

from JEDEC release #2556, Aug. 3, 1959

Direct interelectrode capacitances (continued)

Between pentode and diode sections

Diode plate No. 1 to grid No. 1	max.	0.0008 µµF
Diode plate No. 2 to grid No. 1	max.	0.001 µµF
Diode plate No.1 to pentode plate	max.	0.15 µµF
Diode plate No.2 to pentode plate	max.	0.025 µµF

Maximum ratings (design center values)

Pentode section

Plate voltage	50 volts max.
Grid No. 2 voltage	50 volts max.
Cathode current	5 mamps max.
Grid No. 1 circuit resistance	5 megohms max.
Voltage between cathode and heater	50 volts max.

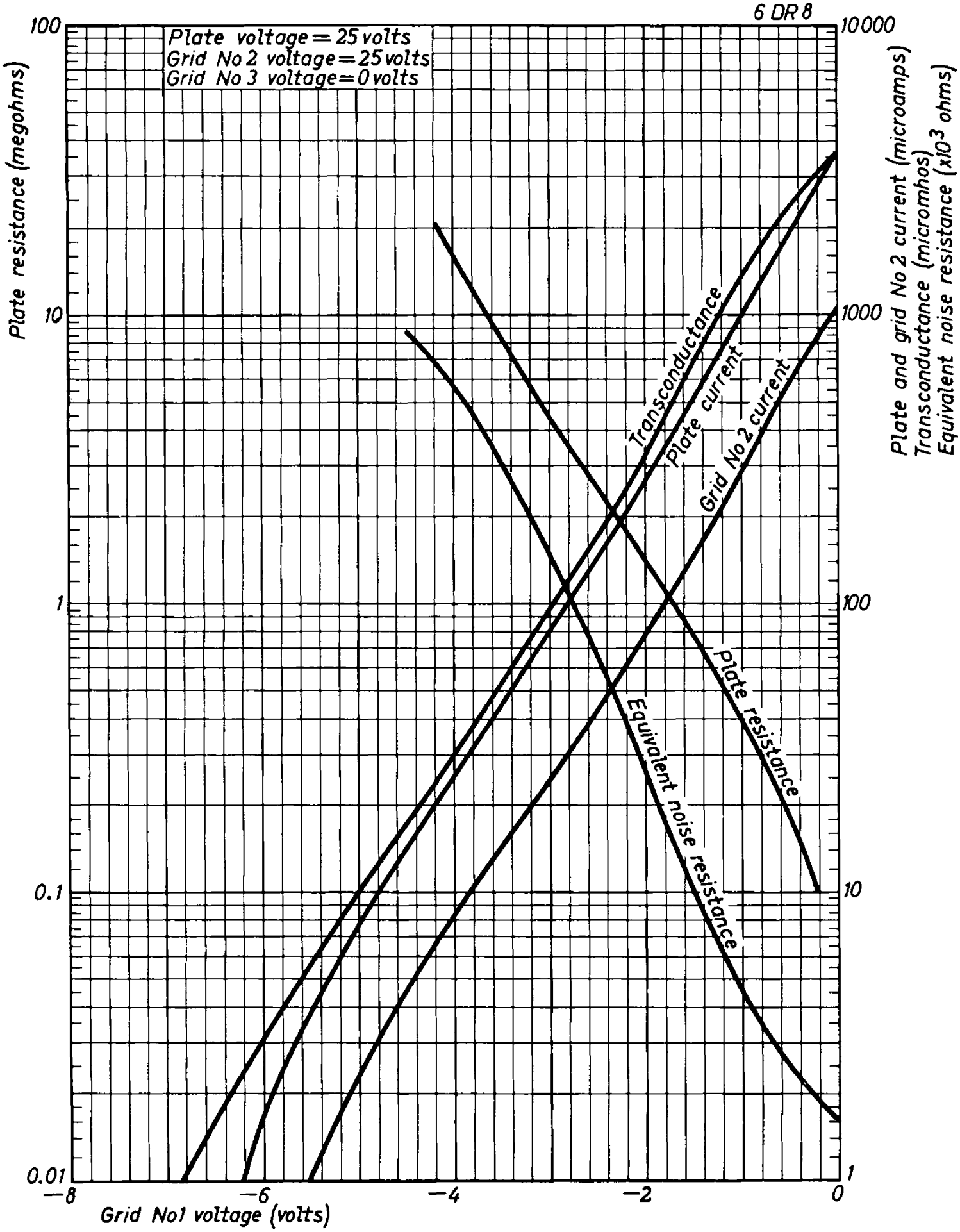
Diode section (each section)

Plate current	0.8 mamp max.
Peak plate current	5 mamps max.

Operating characteristics as I.F. amplifier

Plate voltage	25	12.6	6.3 volts
Grid No. 3 voltage	0	0	0 volt
Grid No. 2 voltage	25	12.6	6.3 volts
Grid No. 1 bias	[1])	[1])	[1])
Plate current	1.7	0.45	0.12 mamp
Grid No. 2 current	0.5	0.14	0.04 mamp
Transconductance	2100	1000	450 micromhos
Plate resistance	0.2	1.0	0.65 megohm

[1]) Grid No. 1 bias obtained by grid current biasing with a grid No. 1 resistor of 2.2. megohms.


6 DR 8
Plate voltage = 25 volts
Grid No 2 voltage = 25 volts
Grid No 3 voltage = 0 volts
Plate resistance (megohms)
Plate and grid No 2 current (microamps)
Transconductance (micromhos)
Equivalent noise resistance (x10³ ohms)
100
10
1
0.1
0.01
10000
1000
100
10
1
−8
−6
−4
−2
0
Grid No1 voltage (volts)
Transconductance
Plate current
Grid No 2 current
Plate resistance
Equivalent noise resistance

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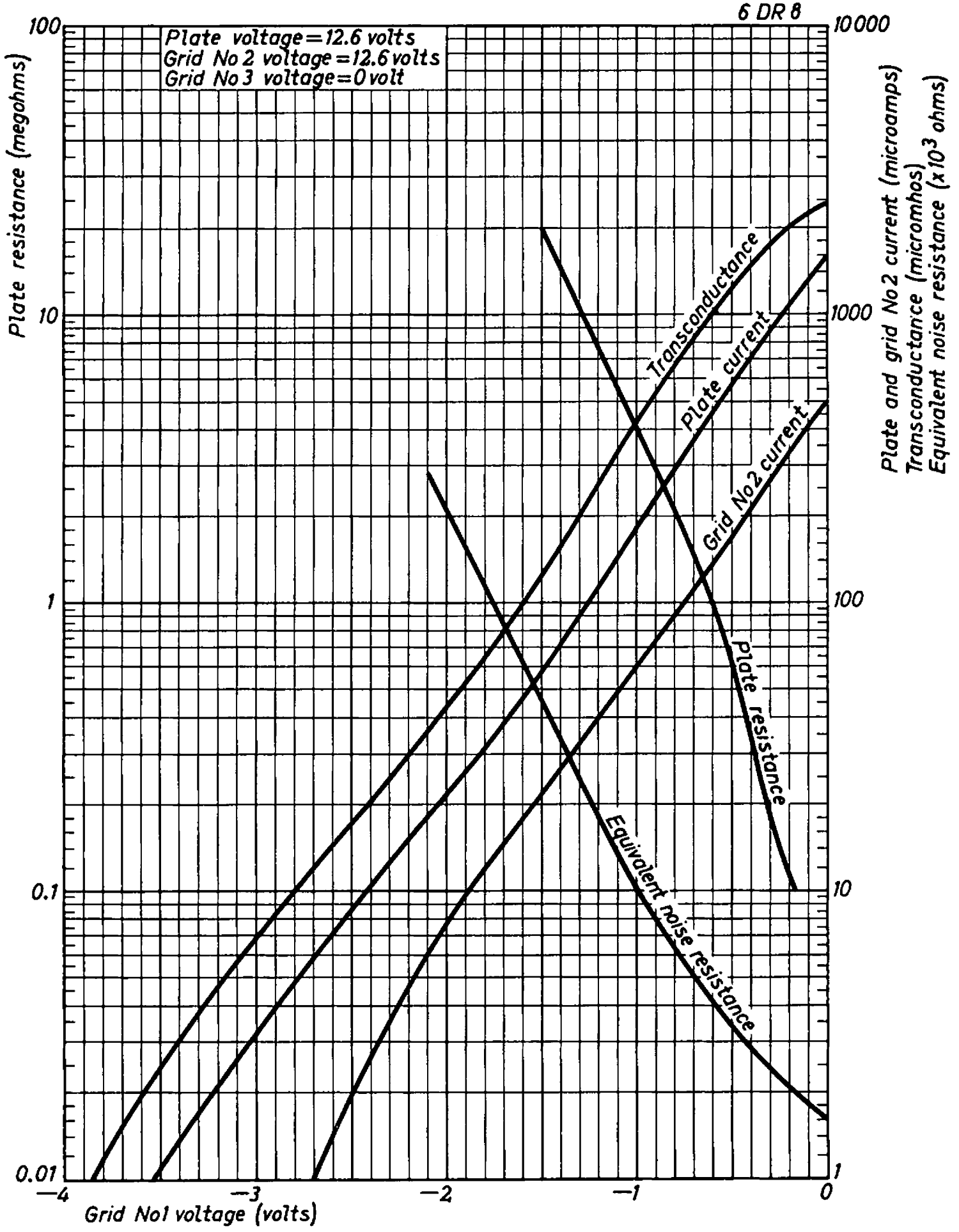
6 DR 8
Plate voltage=12.6 volts
Grid No 2 voltage=12.6 volts
Grid No 3 voltage=0 volt
Plate resistance (megohms)
100
10
1
0.1
0.01
Plate and grid No 2 current (microamps)
Transconductance (micromhos)
Equivalent noise resistance (x10³ ohms)
10000
1000
100
10
1
Transconductance
Plate current
Grid No 2 current
Plate resistance
Equivalent noise resistance
−4
−3
−2
−1
0
Grid No 1 voltage (volts)

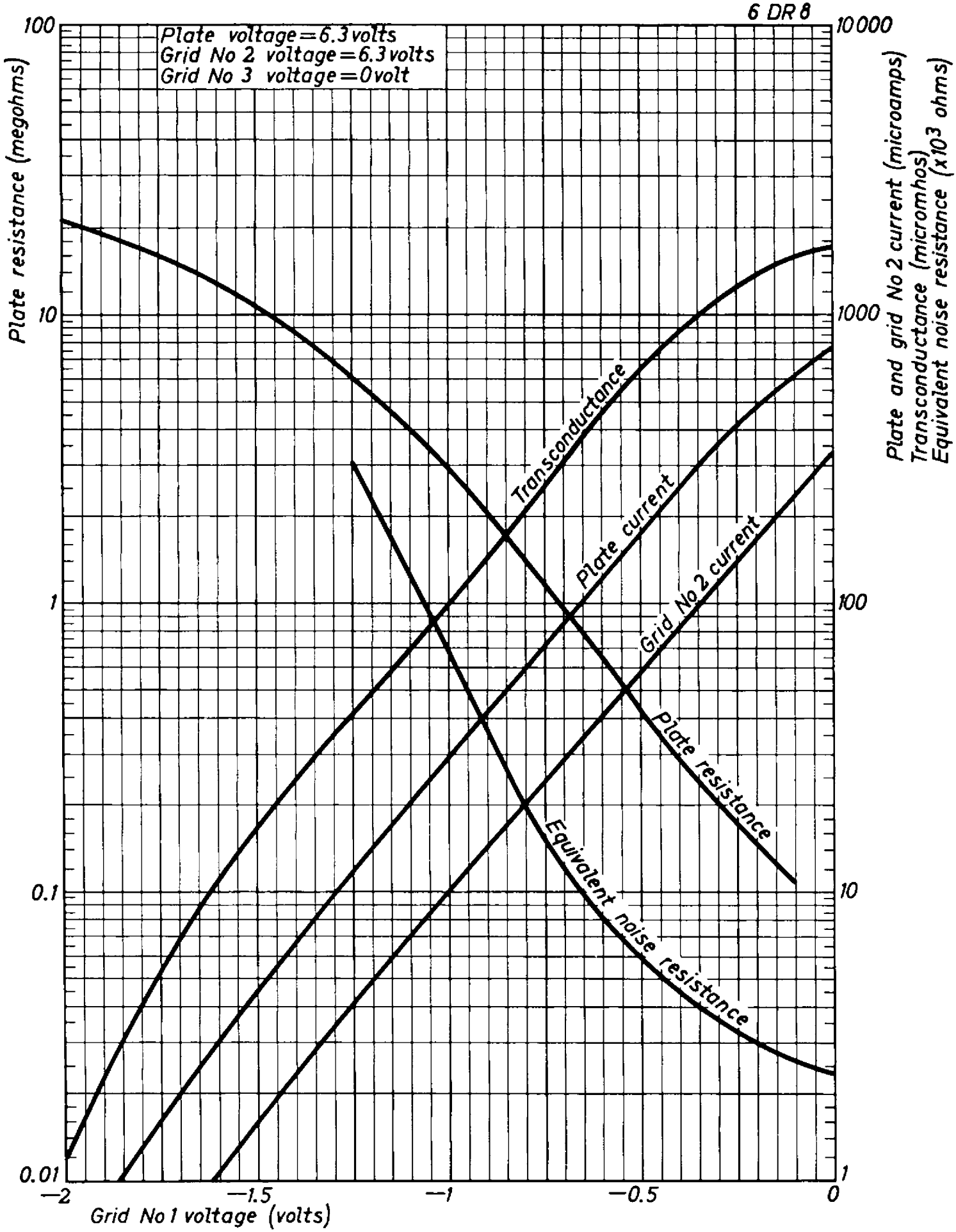
Plate voltage = 6.3 volts
Grid No 2 voltage = 6.3 volts
Grid No 3 voltage = 0 volt
Plate resistance (megohms)
Plate and grid No 2 current (microamps)
Transconductance (micromhos)
Equivalent noise resistance (x10³ ohms)
100
10
1
0.1
0.01
10000
1000
100
10
1
Transconductance
Plate current
Grid No 2 current
Plate resistance
Equivalent noise resistance
−2
−1.5
−1
−0.5
0
Grid No 1 voltage (volts)