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N.V. PHILIPS' GLOEILAMPENFABRIEKEN EINDHOVEN HOLLAND

TUBE TYPE 6CU7

The 6CU7 is a triode hexode converter, the hexode section having remote cut-off characteristics.

PHYSICAL SPECIFICATIONS

Cathode	Coated unipotential
Base	E8-30
Bulb	Glass
Maximum overall length	2-3/8" (60mm)
Maximum seated height	2-1/16" (53mm)
Maximum diameter	7/8" (22mm)
Mounting position	Any

BASING CONNECTIONS (8GY)

Pin 1	Heater	Pin 5	Hexode Grids No.2 and No.4
Pin 2	Hexode plate	Pin 6	Hexode Grid No. 1
Pin 3	Triode plate	Pin 7	Cathode
Pin 4	Hexode Grid No. 3, Triode Grid	Pin 8	Heater

GENERAL ELECTRICAL DATA

Heater voltage	6.3	volts
Heater current	0.23	amps

ELECTRODE CAPACITANCES

Hexode Grid No. 1 to Triode Grid	<0.35	μμF
Hexode Plate to Triode Grid	<0.2	μμF

Hexode Section

Input	4.0	μμF
Output	9.2	μμF
Plate to Grid No. 1	<0.1	μμF
Grid No. 1 to heater	<0.15	μμF

Triode Section

Input	5.5	μμF
Ouput	2.3	μμF
Plate to Grid	1.2	μμF

CHARACTERISTICS

Hexode Section

Plate voltage	250	volts
Grids No. 2 and No. 4 voltage	85	volts
Plate current	3.0	ma
Grids No. 2 & No. 4	3.0	ma
Grid No. 1 voltage	-2.0	volts
Conversion transconductance	750	μmhos
Plate resistance	>1.0	megohms
Grid No. 1 bias for conversion transconductance of 7.5 μmhos	-29	volts

Triode section

Plate voltage	100	volts
Plate current	10	ma
Grid voltage	0	volts
Transconductance	2,800	µmhos
Amplification factor	22	

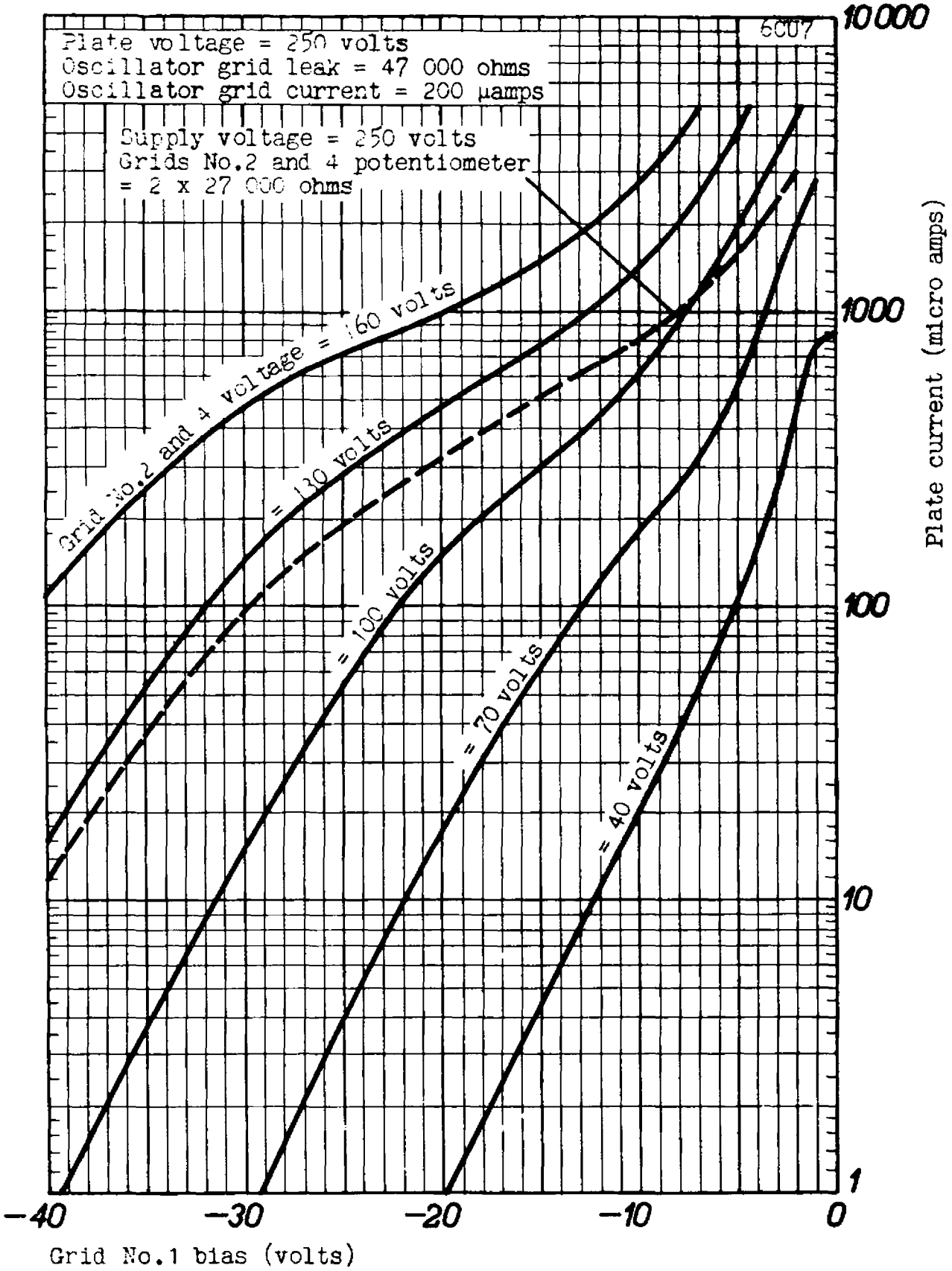
MAXIMUM RATINGS (Design Centre Values)

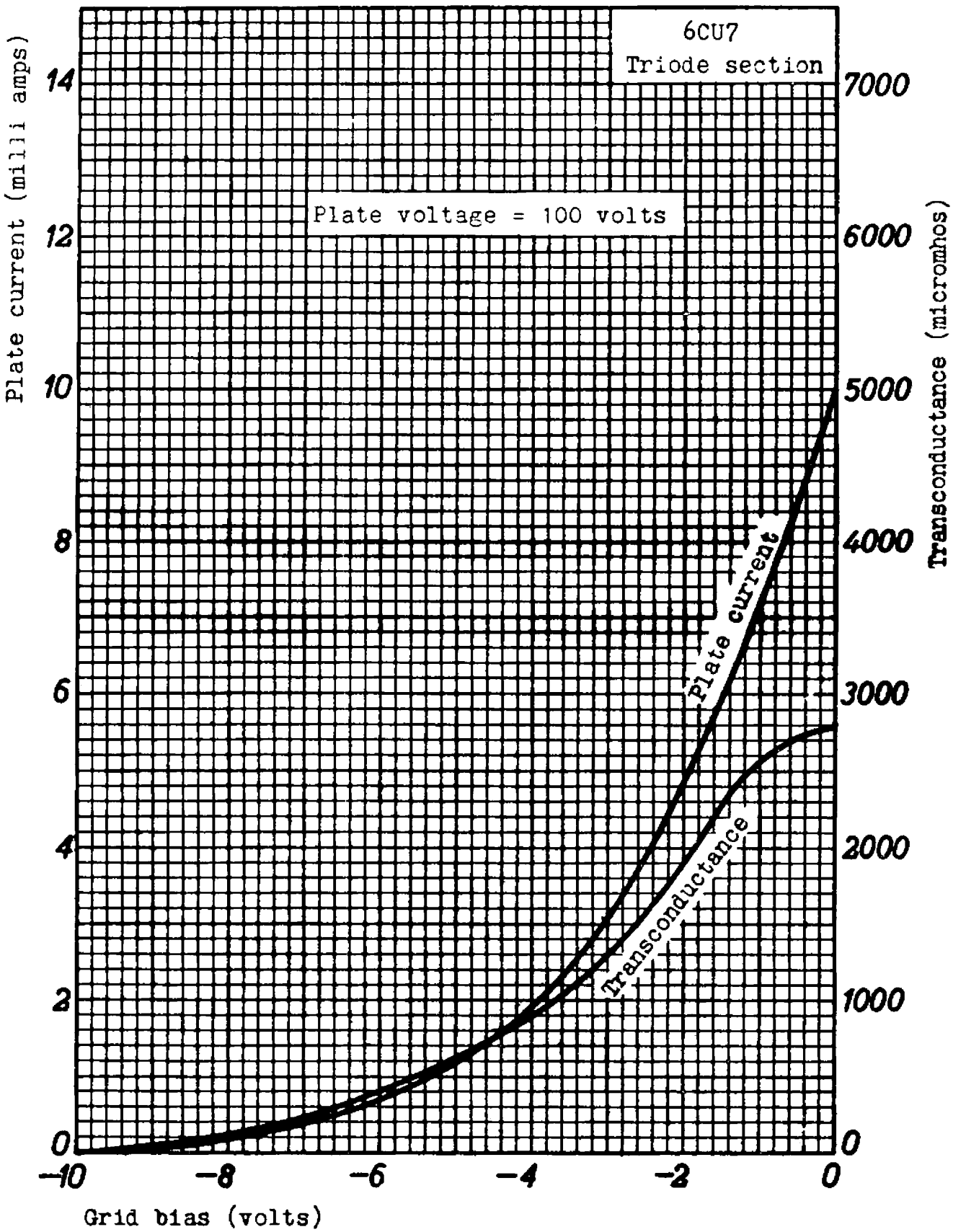
Hexode Section

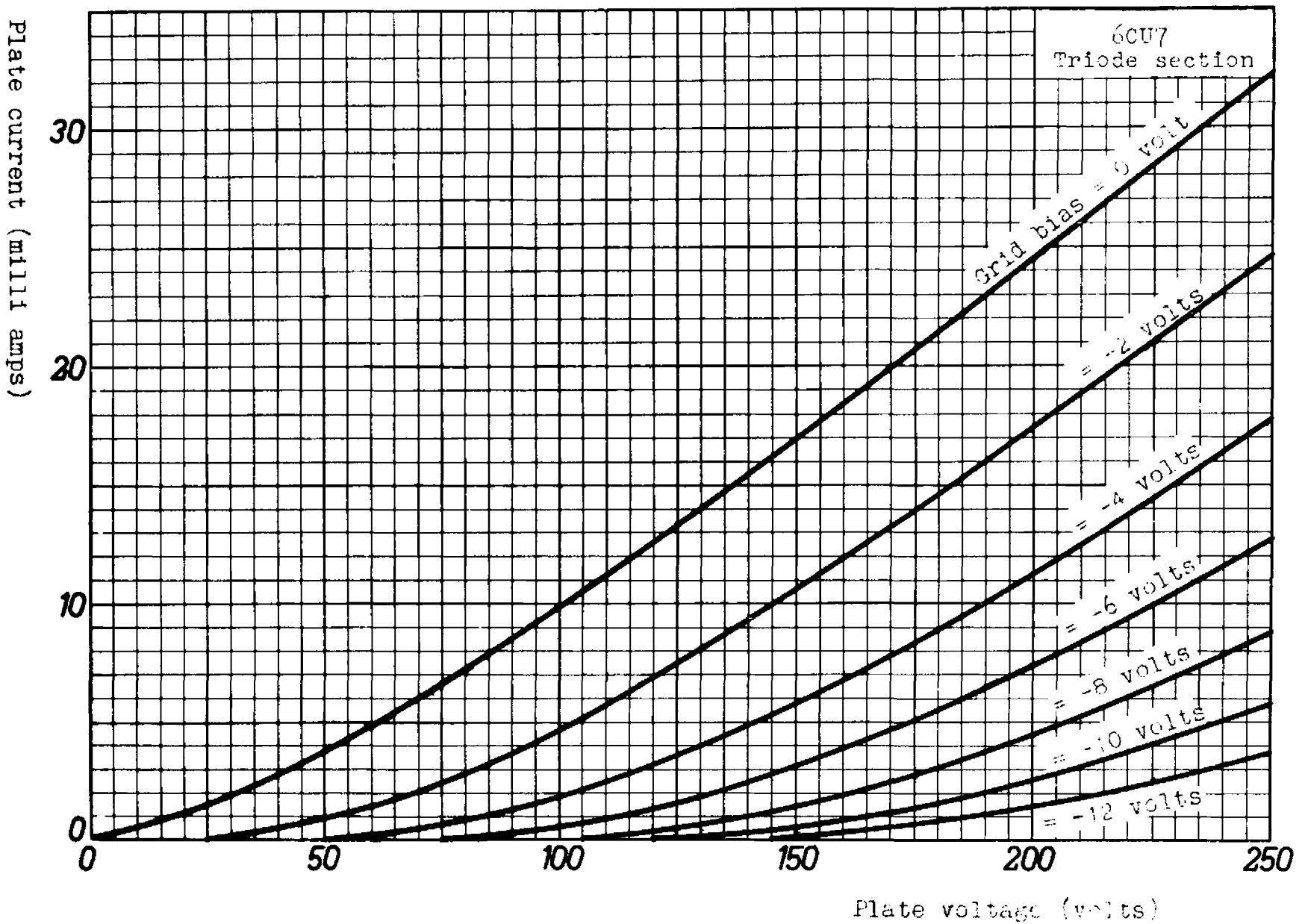
Plate supply voltage	550	volts
Plate voltage	250	volts
Plate dissipation	1.5	watts
Grids No. 2 and No. 4 supply voltage	550	volts
Grids No. 2 & No. 4 voltage		
(Plate current = 3ma)	125	volts
(Plate current < 1ma)	250	volts
Grids No. 2 & No. 4 dissipation	0.3	watts
Cathode current	7	ma
Grid No. 1 circuit resistance	3	megohms
Grid No. 3 circuit resistance	3	megohms
Voltage between heater and cathode	50	volts
External resistance between heater and cathode	20,000	ohms

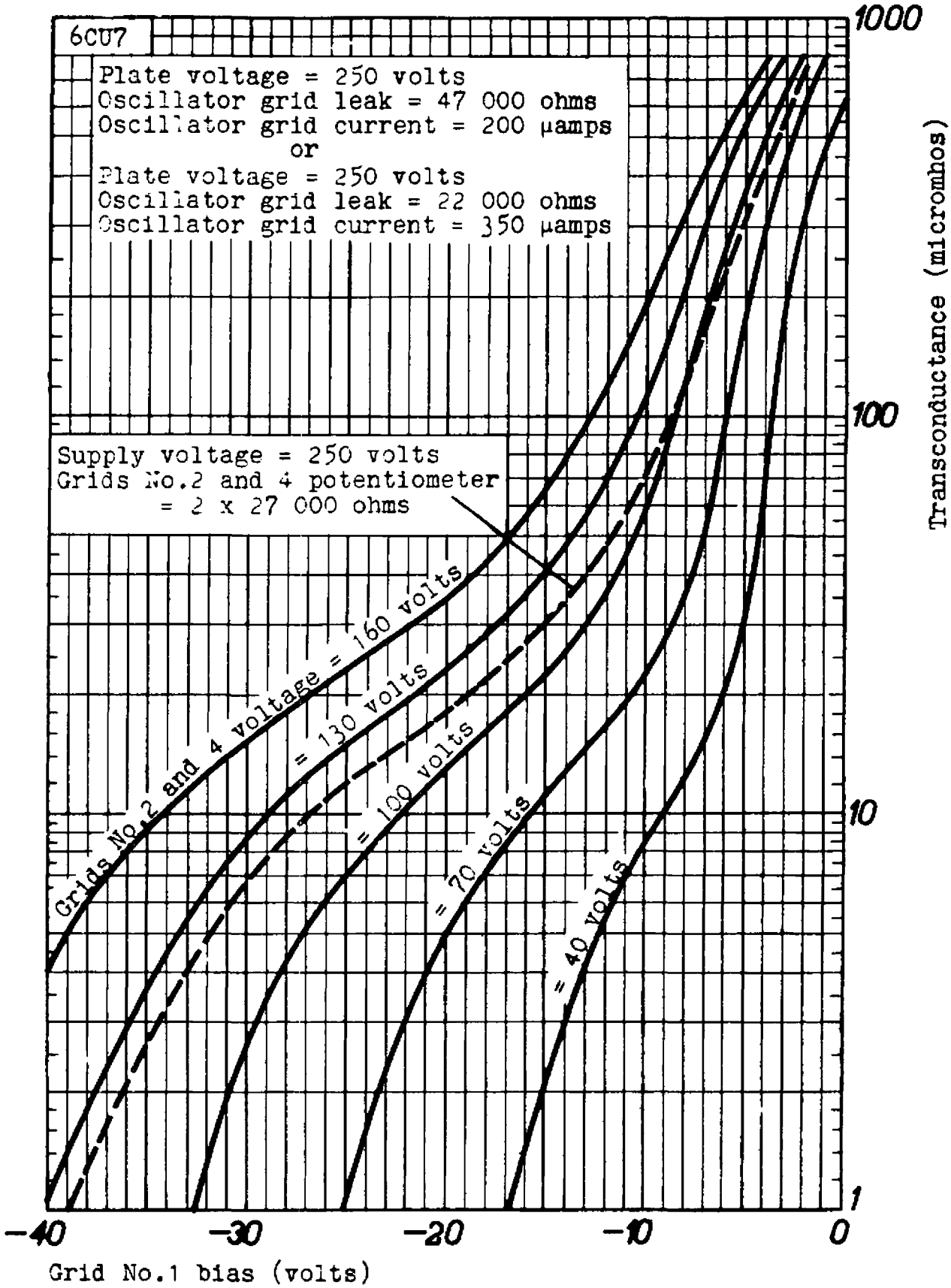
Triode Section

Plate supply voltage	550	volts
Plate voltage	175	volts
Plate dissipation	0.8	watts
Cathode current	6	ma
Grid circuit resistance	3	megohms


6CU7
Plate voltage = 250 volts
Oscillator grid leak = 47 000 ohms
Oscillator grid current = 200 µamps
Supply voltage = 250 volts
Grids No.2 and 4 potentiometer
= 2 x 27 000 ohms
Grid No.2 and 4 voltage = 160 volts
= 130 volts
= 100 volts
= 70 volts
= 40 volts
10 000
1000
100
10
1
Plate current (micro amps)
−40
−30
−20
−10
0
Grid No.1 bias (volts)


6CU7
Triode section
Plate voltage = 100 volts
Plate current
Transconductance
Plate current (milli amps)
Transconductance (micromhos)
Grid bias (volts)
14
12
10
8
6
4
2
0
7000
6000
5000
4000
3000
2000
1000
0
-10
-8
-6
-4
-2
0


6CU7
Triode section
Grid bias = 0 volt
= -2 volts
= -4 volts
= -6 volts
= -8 volts
= -10 volts
= -12 volts
Plate current (milli amps)
0
10
20
30
0
50
100
150
200
250
Plate voltage (volts)


6CU7
Plate voltage = 250 volts
Oscillator grid leak = 47 000 ohms
Oscillator grid current = 200 µamps
or
Plate voltage = 250 volts
Oscillator grid leak = 22 000 ohms
Oscillator grid current = 350 µamps
Supply voltage = 250 volts
Grids No.2 and 4 potentiometer
= 2 x 27 000 ohms
Grids No.2 and 4 voltage = 160 volts
= 130 volts
= 100 volts
= 70 volts
= 40 volts
1000
100
10
1
Transconductance (micromhos)
−40
−30
−20
−10
0
Grid No.1 bias (volts)