

DOUBLE TETRODE for use as R.F. amplifier, oscillator, frequency multiplier and modulator. The tube is internally neutralized.

CATHODE: oxide coated

HEATING: indirect by A.C. or D.C.

Heater voltage	$V_f =$	6.3 V	12.6 V
Heater current	$I_f =$	1.8 A	0.9 A
Pins		5-(1+7)	1-7

CAPACITANCES (each system, the elements of the other system being earthed)

Anode to all other elements except grid No.1	$C_a =$	3.2 pF
Grid No.1 to all other elements except anode	$C_{g1} =$	10.5 pF
Anode to grid No.1	$C_{ag1} <$	0.09 pF

For internal neutralization ( $C_n, C_n'$ ) please refer to electrode connections page 2.

TYPICAL CHARACTERISTICS (each system)

Anode current	$I_a =$	30 mA
Mutual conductance	$S =$	4.5 mA/V
Amplification factor of grid No.1 with respect to grid No.2	$\mu_{g2g1} =$	8.2

Freq. (Mc/s)	C telegr.				Cag <sub>2</sub> mod.			
	C.C.S.		I.C.A.S.		C.C.S.		I.C.A.S.	
	V <sub>a</sub> (V)	W <sub>l</sub> <sup>1)</sup> (W)	V <sub>a</sub> (V)	W <sub>l</sub> <sup>1)</sup> (W)	V <sub>a</sub> (V)	W <sub>l</sub> <sup>1)</sup> (W)	V <sub>a</sub> (V)	W <sub>l</sub> <sup>1)</sup> (W)
175	900	132	1000	163	750	85	800	107

<sup>1)</sup> Useful power in the load

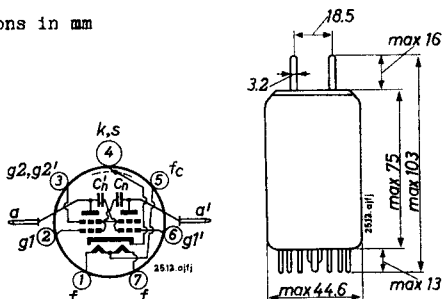
COOLING: radiation

When the tube is used near its limiting values it may be necessary to direct an air flow on the bulb and the anode seals. In general an air flow of approximately  $0.56 \text{ m}^3/\text{min}$ . will be sufficient.

TEMPERATURE LIMITS (Absolute limits)

Temperature of bulb and anode seals = max.  $250 \text{ }^\circ\text{C}$   
 Temperature of base pin seals = max.  $180 \text{ }^\circ\text{C}$

Dimensions in mm



Base	Septar
Socket	40202
Anode connector clips	40681

Mounting position: Vertical with base up or down or horizontal with the anode pins in a horizontal plane

Net weight 71 g

## H.F. class C telegraphy, two systems in push-pull

### LIMITING VALUES (continuous service; absolute limits)

C.C.S.

	$f$	up to	175 Mc/s
Frequency			
Anode voltage	$V_a$	= max.	1000 V
Anode current	$I_a$	= max.	2x110 mA
Anode dissipation	$W_a$	= max.	2x30 W
Anode input power	$W_{I_a}$	= max.	2x100 W
Grids No.2 voltage	$V_{g_2, g_2'}$	= max.	300 V
Grids No.2 dissipation	$W_{g_2, g_2'}$	= max.	7 W
Negative grid No.1 voltage	$-V_{g_1}$	= max.	175 V
Grid No.1 current	$I_{g_1}$	= max.	2x5 mA
Grid No.1 circuit resistance	$R_{g_1}$	= max.	50 k $\Omega$ <sup>1)</sup>
Heater to cathode voltage	$V_{kf}$	= max.	100 V

### OPERATING CONDITIONS (continuous service)

C.C.S.

	$f$	=	175	175 Mc/s
Frequency				
Anode voltage	$V_a$	=	1000	900 V
Grids No.2 voltage	$V_{g_2, g_2'}$	=	230	245 V
Grid No.1 voltage	$V_{g_1}$	=	-85	-90 V
Common grids No.1 resistor	$R_{g_1, g_1'}$	=	15	15 k $\Omega$
Anode current	$I_a$	=	2x100	2x110 mA
Grids No.2 current	$I_{g_2, g_2'}$	=	11.2	12.5 mA
Grids No.1 current	$I_{g_1, g_1'}$	=	5.7	5.9 mA
Anode input power	$W_{I_a}$	=	200	198 W
Anode dissipation	$W_a$	=	2x27	2x25 W
Grids No.2 dissipation	$W_{g_2, g_2'}$	=	2.5	3.0 W
Driver output power	$W_{dr}$	=	3.5	3.5 W
Output power	$W_o$	=	146	150 W
Efficiency	$\eta$	=	73	75 %
Useful power in the load	$W_f$	=	125	132 W

<sup>1)</sup> Each section

## H.F. class C telegraphy, two systems in push-pull (continued)

LIMITING VALUES (Intermittent service; absolute limits)I.C.A.S.

	f	up to	175 Mc/s
Frequency			
Anode voltage	$V_a$	= max.	1000 V
Anode current	$I_a$	= max.	2x120 mA
Anode dissipation	$W_a$	= max.	2x34 W
Anode input power	$W_{1a}$	= max.	2x120 W
Grids No.2 voltage	$V_{g_2, g_2'}$	= max.	300 V
Grids No.2 dissipation	$W_{g_2, g_2'}$	= max.	8 W
Negative grid No.1 voltage	$-V_{g_1}$	= max.	175 V
Grid No.1 current	$I_{g_1}$	= max.	2x5 mA
Grid No.1 circuit resistance	$R_{g_1}$	= max.	50 k $\Omega$ <sup>1)</sup>
Heater to cathode voltage	$V_{kf}$	= max.	100 V

OPERATING CONDITIONS (Intermittent service)I.C.A.S.

Frequency	f	=	175	175 Mc/s
Anode voltage	$V_a$	=	1000	900 V
Grids No.2 voltage	$V_{g_2, g_2'}$	=	260	260 V
Grid No.1 voltage	$V_{g_1}$	=	-85	-85 V
Common grids No.1 resistor	$R_{g_1, g_1'}$	=	15	15 k $\Omega$
Anode current	$I_a$	=	2x120	2x120 mA
Grids No.2 current	$I_{g_2, g_2'}$	=	16.5	17.0 mA
Grids No.1 current	$I_{g_1, g_1'}$	=	5.7	5.7 mA
Anode input power	$W_{1a}$	=	240	216 W
Anode dissipation	$W_a$	=	2x30	2x25 W
Grids No.2 dissipation	$W_{g_2, g_2'}$	=	4.3	4.5 W
Driver output power	$W_{dr}$	=	3.5	3.5 W
Output power	$W_o$	=	180	166 W
Efficiency	$\eta$	=	75	77 %
Useful power in the load	$W_l$	=	163	147 W

<sup>1)</sup> Each section

H.F. class C anode and screen grid modulation, two systems in push-pull

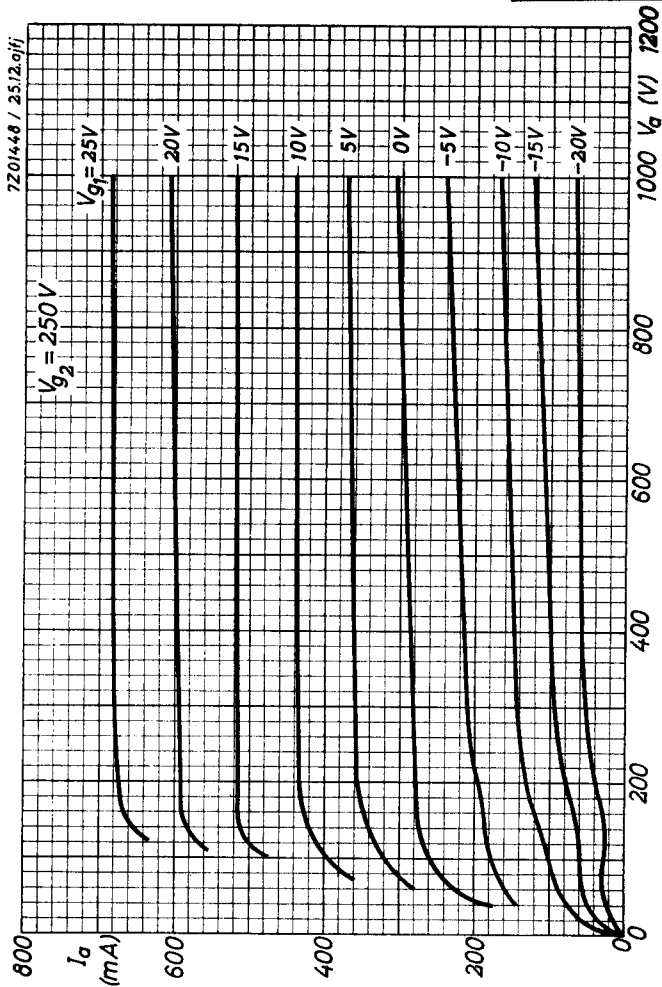
LIMITING VALUES (Absolute limits)

		<u>C.C.S.</u>	<u>I.C.A.S.</u>
Frequency	f	up to 175	175 Mc/s
Anode voltage	$V_a$	= max. 800	800 V
Anode current	$I_a$	= max. 2x90	2x100 mA
Anode dissipation	$W_a$	= max. 2x21	2x23.5 W
Anode input power	$W_{i_a}$	= max. 140	160 W
Grids No.2 voltage	$V_{g_2, g_2'}$	= max. 250	250 V
Grids No.2 dissipation	$W_{g_2, g_2'}$	= max. 5.0	5.5 W
Negative grid No.1 voltage	$-V_{g_1}$	= max. 175	175 V
Grid No.1 current	$I_{g_1}$	= max. 2x5	2x5 mA
Grid No.1 circuit resistance	$R_{g_1}$	= max. 50	50 k $\Omega$ <sup>1)</sup>
Heater to cathode voltage	$V_{kf}$	= max. 100	100 V

OPERATING CONDITIONS

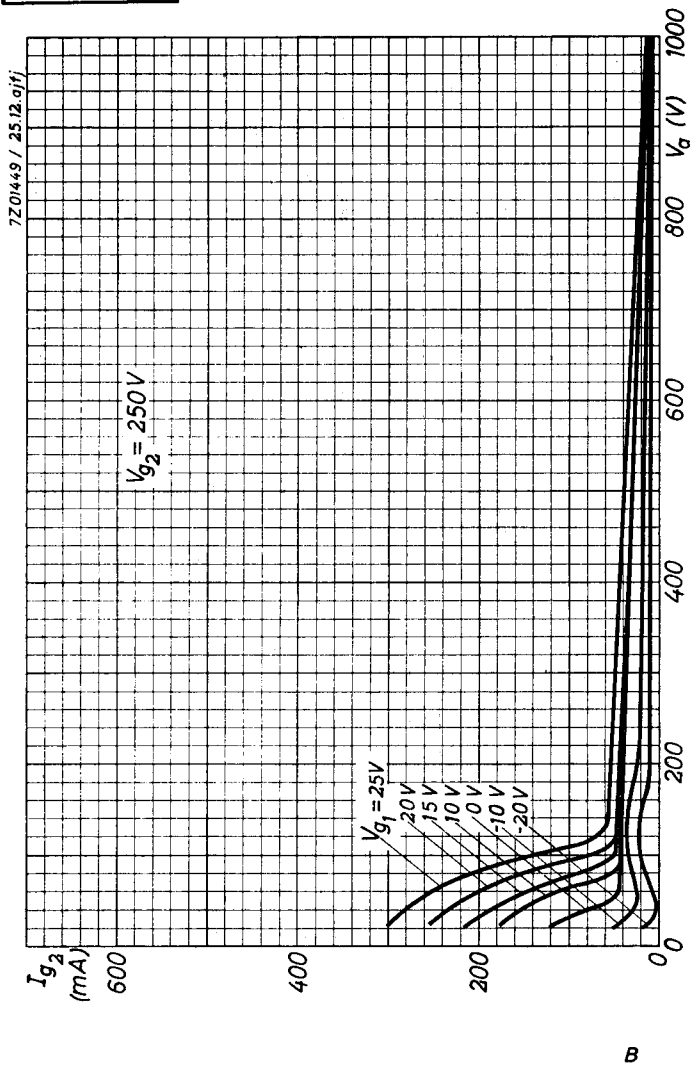
		<u>C.C.S.</u>	<u>I.C.A.S.</u>
Frequency	f	= 175	175 Mc/s
Anode voltage	$V_a$	= 750	800 V
Grids No.2 voltage	$V_{g_2, g_2'}$	= 250	225 V
Grid No.1 voltage	$V_{g_1}$	= -66	-75 V
Common grids No.1 resistor	$R_{g_1, g_1'}$	= 15	15 k $\Omega$
Anode current	$I_a$	= 2x90	2x100 mA
Grids No.2 current	$I_{g_2, g_2'}$	= 10.2	8.8 mA
Grids No.1 current	$I_{g_1, g_1'}$	= 4.4	5.0 mA
Anode input power	$W_{i_a}$	= 135	160 W
Anode dissipation	$W_a$	= 2x19	2x21 W
Grids No.2 dissipation	$W_{g_2, g_2'}$	= 2.6	2.0 W
Driver output power	$W_{dr}$	= 3.4	3.0 W
Output power	$W_o$	= 97	122 W
Efficiency	$\eta$	= 72	74 %
Useful power in the load	$W_l$	= 85	107 W
Modulation depth	m	= 100	100 %
Peak grids No.2 modulation voltage	$V_{g_2, g_2' p}$	= 90	80 V
Modulation power	$W_{mod}$	= 68	80 W

<sup>1)</sup> Each section

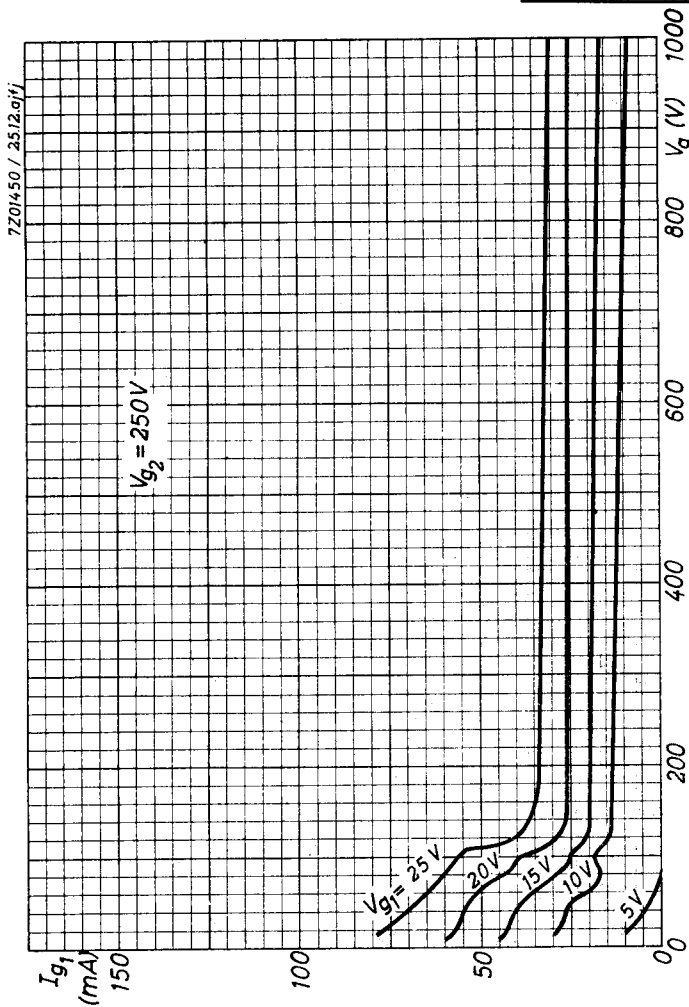


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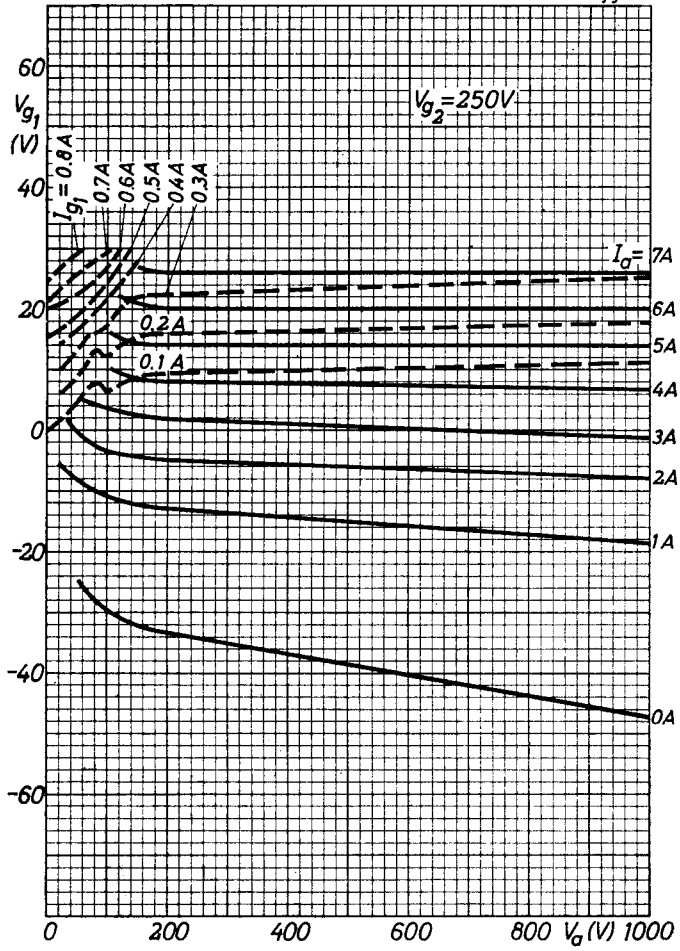


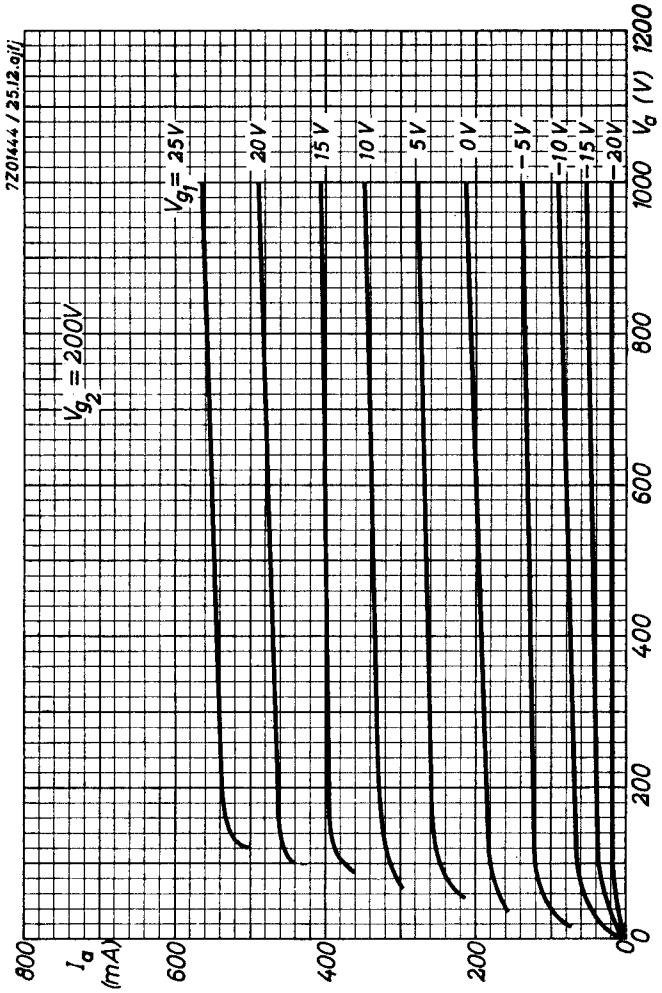


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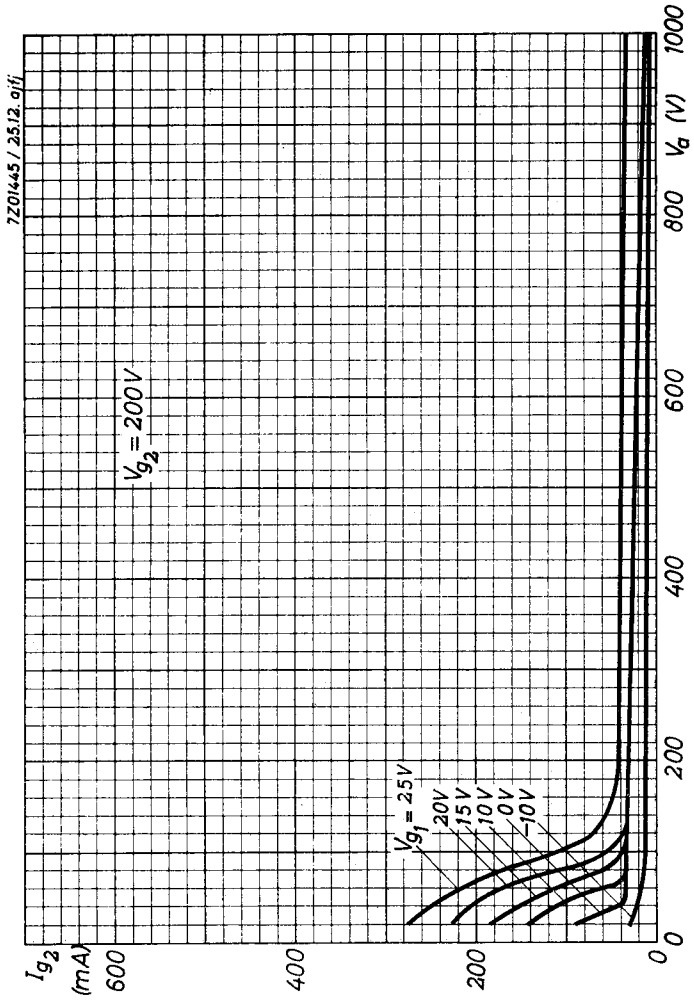
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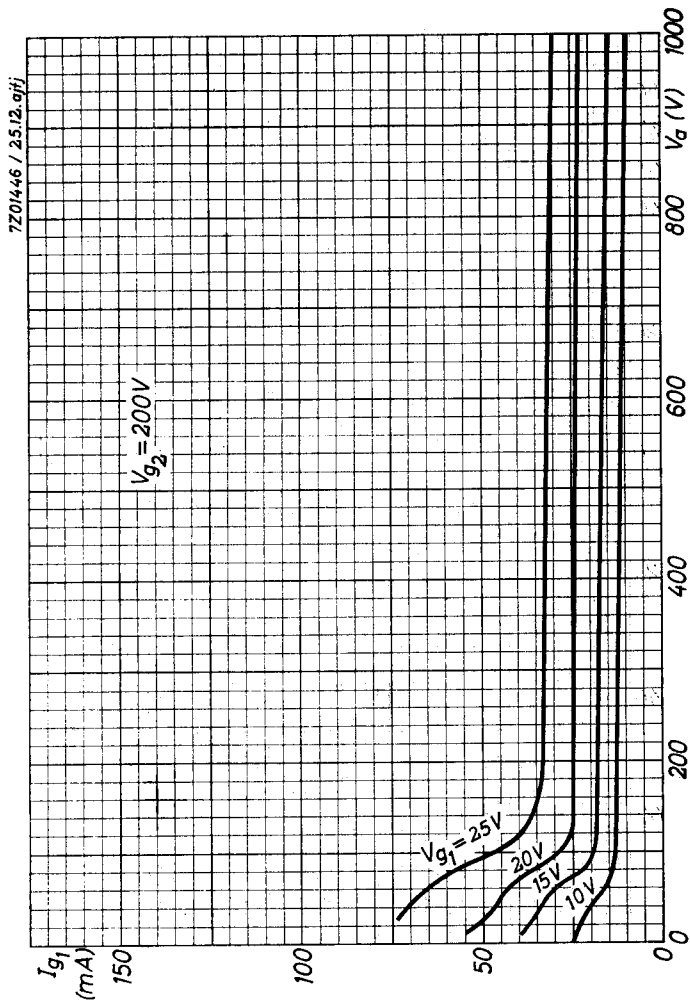




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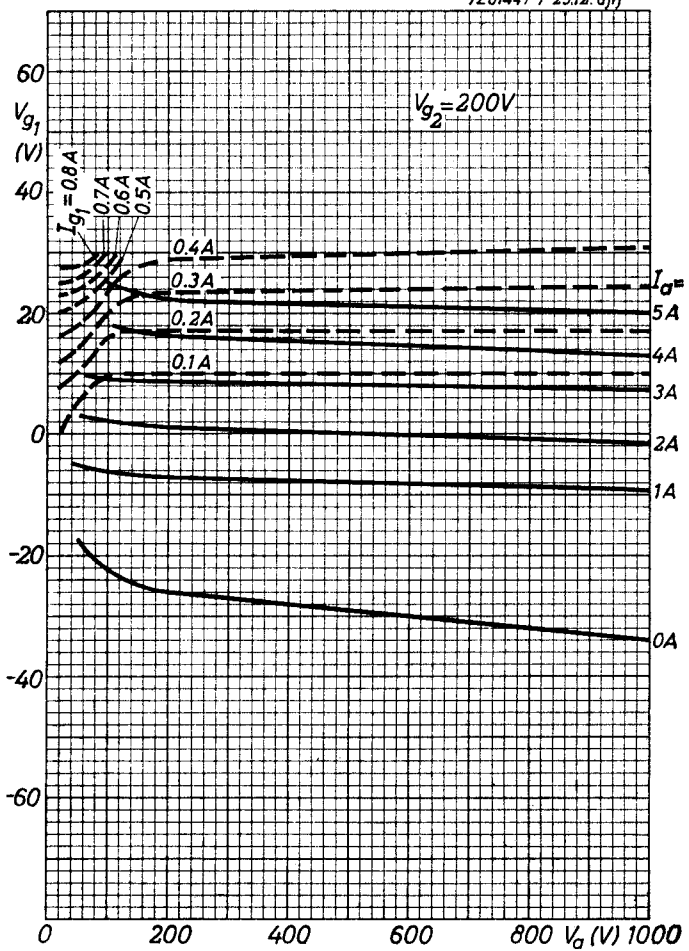




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*Electronic  
Tube*

**HANDBOOK**

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