POWER TETRODE for use as A.M. and single side band amplifier

FILAMENT: thoriated tungsten

HEATING: direct; parallel supply

Filament voltage	V_f	= 7.5 V
Filament current	I_f	= 22.6 A

The filament current must never exceed a peak value of 45 A instantaneously at any time during the energizing schedule

CAPACITANCES

Anode to all other elements	C_a	= 9.5 pF
Grid No.1 to all other elements	C_{g_1}	= 47.6 pF
Grid No.1 to anode	C_{ag_1}	= 0.1 pF

TYPICAL CHARACTERISTICS

Anode voltage	V_a	= 4000 V
Grid No.2 voltage	V_{g_2}	= 600 V
Anode current	I_a	= 200 mA
Mutual conductance	S	= 10 mA/V
Amplification factor of grid No.1 with respect to grid No.2	$\mu_{g_2g_1}$	= 5.1

Frequency	C telegraphy		B, single side band	
(Mc/s)	V_a(kV)	W_o(kW)	V_a(kV)	W_o(P.E.P.; kW)
30	5	2.4	4	1.3

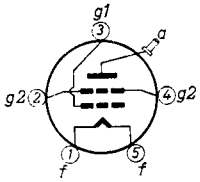
COOLING: radiation and convection; low velocity air flow

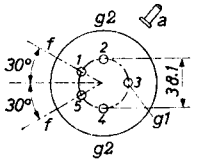
TEMPERATURES

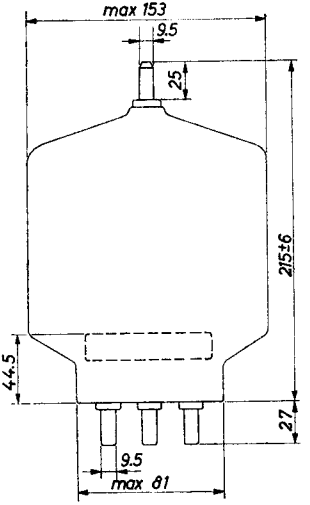
Anode seal temperature	max. 220 °C
Bottom pin seal temperature	max. 180 °C
Bulb temperature	max. 350 °C

PHILIPS

Dimensions in mm







Base: GIANT 5p
Socket: 40216
Anode clip: 40665

Mounting position: vertical

Net weight: 620 g
Shipping weight: 2.25 kg

H.F. class C amplifier

LIMITING VALUES (Absolute limits)

Frequency	f	up to 30 Mc/s	
Anode voltage	V_a	= max. 5.5	kV
Anode dissipation	W_a	= max. 800	W
Anode input power	W_{i_a}	= max. 3.5	kW
Anode current	I_a	= max. 700	mA
Grid No.2 voltage	V_{g_2}	= max. 800	V
Grid No.2 dissipation	W_{g_2}	= max. 120	W
Negative grid No.1 voltage	$-V_{g_1}$	= max. 500	V
Grid No.1 current	I_{g_1}	= max. 35	mA

OPERATING CONDITIONS

Frequency	f	= 30	Mc/s
Anode voltage	V_a	= 5	kV
Grid No.2 voltage	V_{g_2}	= 600	V
Grid No.1 voltage	V_{g_1}	= -240	V
Anode current	I_a	= 600	mA
Grid No.2 current	I_{g_2}	= 185	mA
Grid No.1 current	I_{g_1}	= 20	mA
Peak H.F. grid No.1 voltage	$V_{g_1\,p}$	= 300	V
Driving power	W_{dr}	= 10	W
Anode input power	W_{i_a}	= 3000	W
Grid No.2 input power	$W_{i_{g2}}$	= 110	W
Anode dissipation	W_a	= 600	W
Output power	W_o	= 2400	W
Efficiency	η	= 80	%

H.F. class B single side band amplifier without grid current

LIMITING VALUES (Absolute limits)

		f up to 30 Mc/s
Frequency		
Anode voltage	V_a	= max. 5.5 kV
Anode dissipation	W_a	= max. 800 W
Anode input power	W_{i_a}	= max. 2.5 kW
Anode current	I_a	= max. 600 mA
Grid No.2 voltage	V_{g_2}	= max. 800 V
Grid No.2 dissipation	W_{g_2}	= max. 120 W
Negative grid No.1 voltage	$-V_{g_1}$	= max. 500 V
Grid No.1 circuit resistance	R_{g_1}	= max. 20 kΩ

OPERATING CONDITIONS

Frequency	f	=	30		Mc/s
Anode voltage	V_a	=	4		kV
Grid No.2 voltage	V_{g_2}	=	600		V
Grid No.1 voltage	V_{g_1}	=	-105		V [1]

			zero signal	single tone signal	double tone signal	
Peak H.F. grid voltage	$V_{g_1\ p}$	=	0	100	100	V
Anode current	I_a	=	150	465	330	mA
Grid No.2 current	I_{g_2}	=	8	85	40	mA
Grid No.1 current	I_{g_1}	=	0	0	0	mA
Anode input power	W_{i_a}	=	600	1860	1320	W
Grid No.2 dissipation	W_{g_2}	=	4.8	51	24	W
Anode dissipation	W_a	=	600	560	670	W
Output power	W_o	=	0	1300	650	W
Driving power	Wdr	=	0	0	0	W
Efficiency	η	=	-	69	49	%
Peak envelope power	$W_{o(PEP)}$	=			1300	W
Intermodulation distortion						
of the third order	d_{i_3}	=			<-35	dB [2]
of the fifth order	d_{i_5}	=			<-40	dB [2]

[1] To be adjusted so that I_a = 150 mA at $V_{g_1\ p}$ = 0 V

[2] Distortion levels with reference to either of the tones in a double tone test signal. The quoted figures are the maximum encountered values at any driving level up to 100 %

PHILIPS

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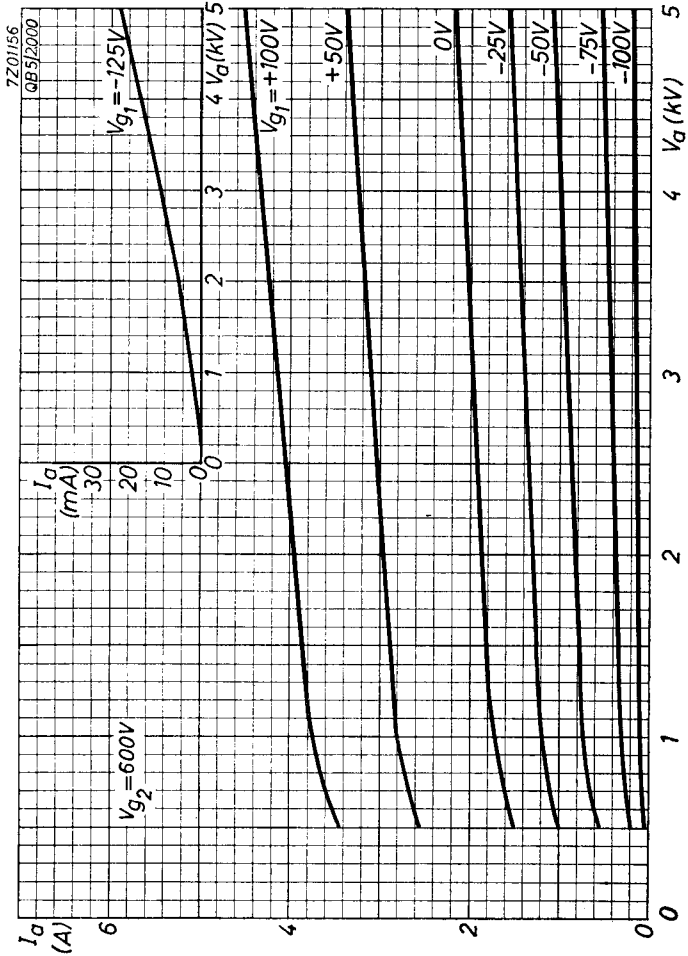

12.12.1962

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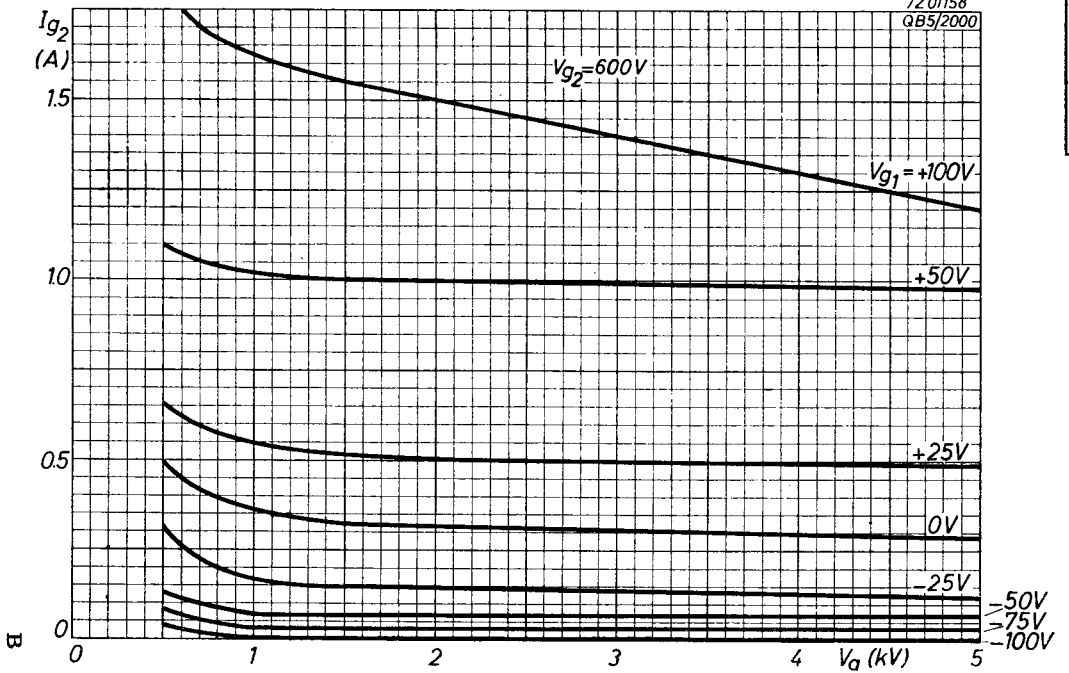
PHILIPS


7Z01158
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I_{g_2} (A)
V_{g_2}=600V
V_{g_1} = +100V
+50V
+25V
0V
−25V
−50V
−75V
−100V
1.5
1.0
0.5
0
0
1
2
3
4
5
V_a (kV)
B

ZZ01157
QB5/2000
V_{g1}=+50V
+100V
+25V
V_{g2}=600V
I_{g1} (mA)
300
200
100
0
0
1
2
3
4
5
V_a (kV)

12.12.1962

C

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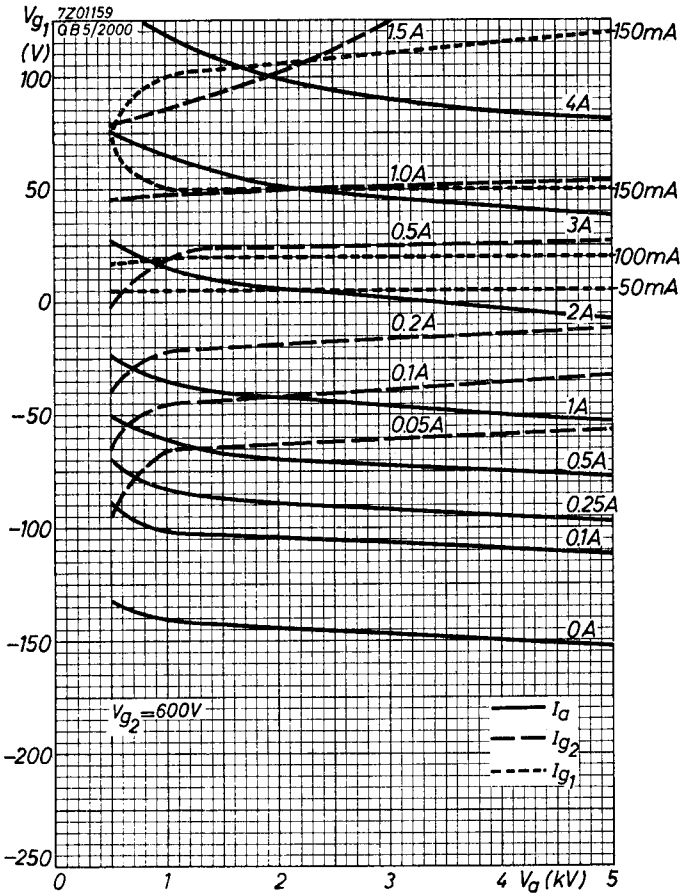

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Electronic Tube

HANDBOOK

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7	C	1962.12.12
8	D	1962.12.12
9	FP	2000.01.15