

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

FILAMENT: thoriated tungsten

HEATING: direct; parallel supply

Filament voltage $V_f = 7.5 \text{ V}$

Filament current $I_f = 22.6 \text{ A}$

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 $C_a = 9.5 \text{ pF}$

Grid No.1 to all other elements $C_{g1} = 47.6 \text{ pF}$

Grid No.1 to anode $C_{ag1} = 0.1 \text{ pF}$

TYPICAL CHARACTERISTICS

Anode voltage $V_a = 4000 \text{ V}$

Grid No.2 voltage $V_{g2} = 600 \text{ V}$

Anode current $I_a = 200 \text{ mA}$

Mutual conductance $S = 10 \text{ mA/V}$

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)	$V_a(\text{kV})$	$W_o(\text{kW})$	$V_a(\text{kV})$	$W_o(\text{P.E.P.}; \text{kW})$
30	5	2.4	4	1.3

COOLING: radiation and convection; low velocity air flow

TEMPERATURES

Anode seal temperature max. 220 °C

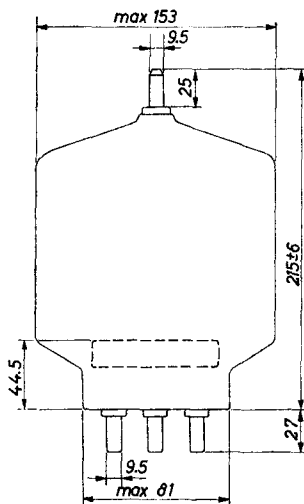
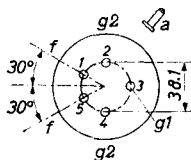
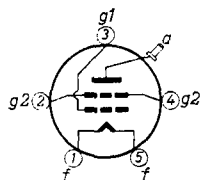
Bottom pin seal temperature max. 180 °C

Bulb temperature max. 350 °C

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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_{ia}	= max. 3.5 kW
Anode current	I_a	= max. 700 mA
Grid No.2 voltage	V_{g2}	= max. 800 V
Grid No.2 dissipation	W_{g2}	= max. 120 W
Negative grid No.1 voltage	$-V_{g1}$	= max. 500 V
Grid No.1 current	I_{g1}	= max. 35 mA

OPERATING CONDITIONS

Frequency	f	= 30 Mc/s
Anode voltage	V_a	= 5 kV
Grid No.2 voltage	V_{g2}	= 600 V
Grid No.1 voltage	V_{g1}	= -240 V
Anode current	I_a	= 600 mA
Grid No.2 current	I_{g2}	= 185 mA
Grid No.1 current	I_{g1}	= 20 mA
Peak H.F. grid No.1 voltage	$V_{g1 p}$	= 300 V
Driving power	W_{dr}	= 10 W
Anode input power	W_{ia}	= 3000 W
Grid No.2 input power	W_{ig2}	= 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)

Frequency	f up to 30 Mc/s
Anode voltage	$V_a = \text{max. } 5.5 \text{ kV}$
Anode dissipation	$W_a = \text{max. } 800 \text{ W}$
Anode input power	$W_{1a} = \text{max. } 2.5 \text{ kW}$
Anode current	$I_a = \text{max. } 600 \text{ mA}$
Grid No.2 voltage	$V_{g2} = \text{max. } 800 \text{ V}$
Grid No.2 dissipation	$W_{g2} = \text{max. } 120 \text{ W}$
Negative grid No.1 voltage	$-V_{g1} = \text{max. } 500 \text{ V}$
Grid No.1 circuit resistance	$R_{g1} = \text{max. } 20 \text{ k}\Omega$

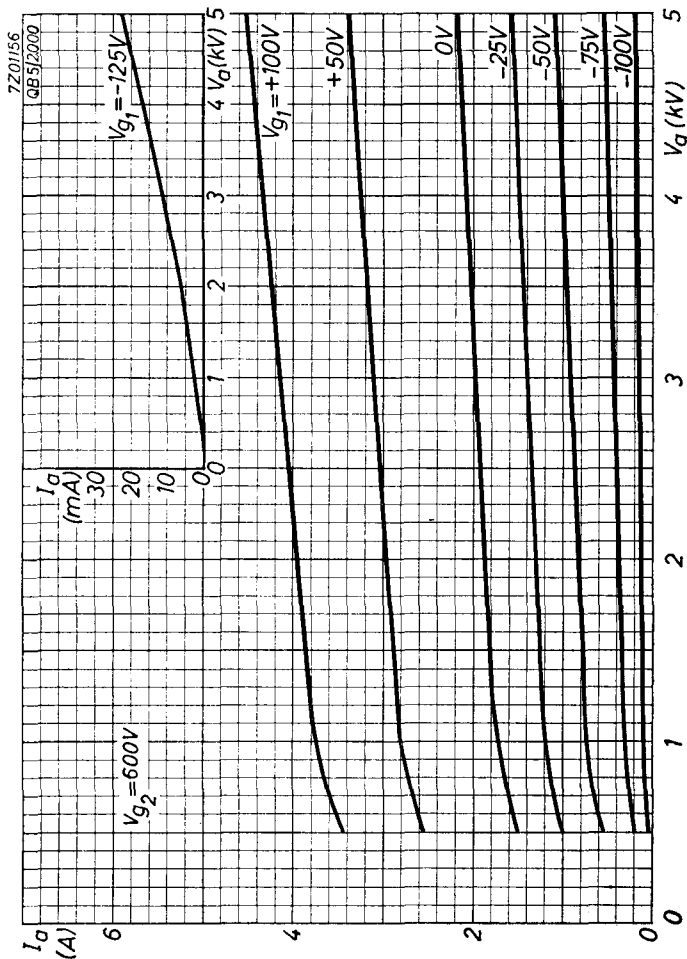
OPERATING CONDITIONS

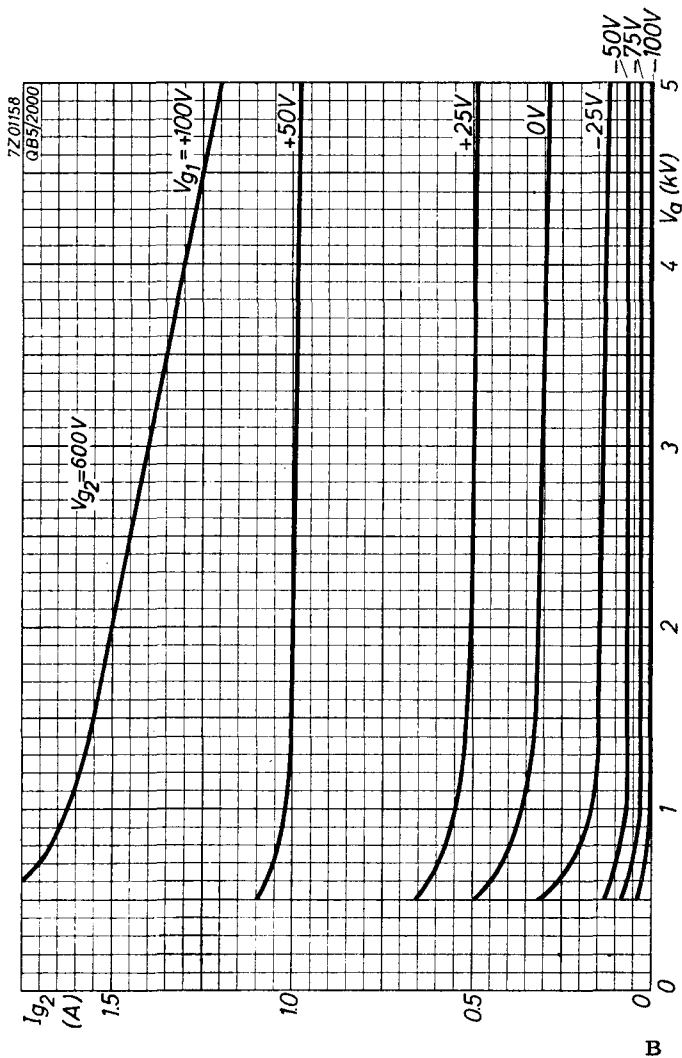
Frequency	f	=	30	Mc/s
Anode voltage	V_a	=	4	kV
Grid No.2 voltage	V_{g2}	=	600	V
Grid No.1 voltage	V_{g1}	=	-105	V ¹⁾

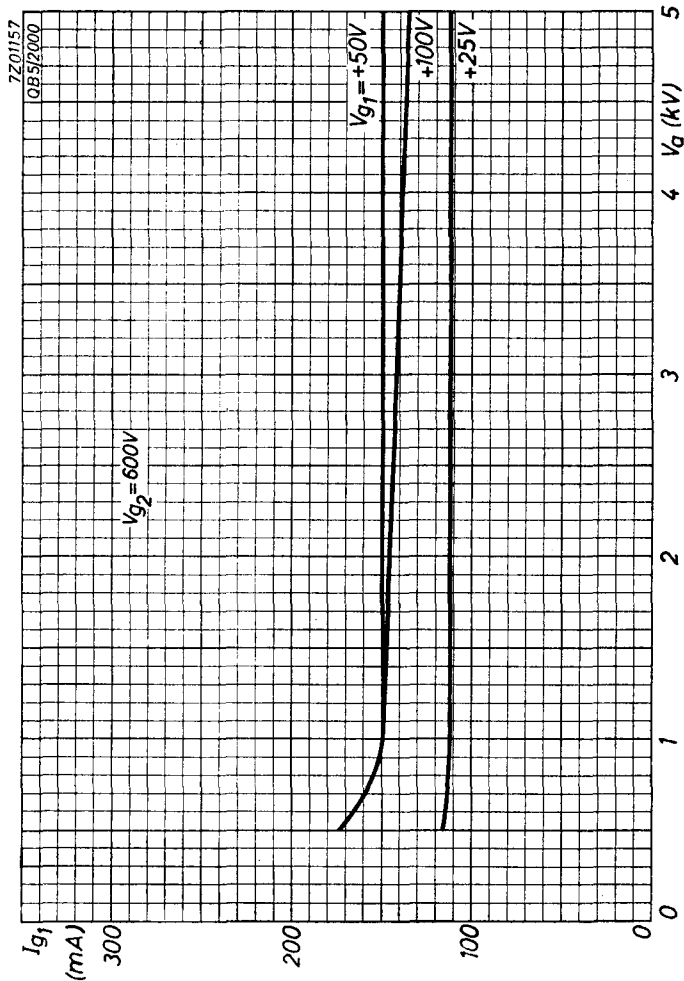
			zero signal	single tone signal	double tone signal	
Peak H.F. grid voltage	$V_{g1 p}$	=	0	100	100	V
Anode current	I_a	=	150	465	330	mA
Grid No.2 current	I_{g2}	=	8	85	40	mA
Grid No.1 current	I_{g1}	=	0	0	0	mA
Anode input power	W_{1a}	=	600	1860	1320	W
Grid No.2 dissipation	W_{g2}	=	4.8	51	24	W
Anode dissipation	W_a	=	600	560	670	W
Output power	W_o	=	0	1300	650	W
Driving power	W_{dr}	=	0	0	0	W
Efficiency	η	=	-	69	49	%
Peak envelope power	$W_o(\text{PEP})$	=			1300	W
Intermodulation distortion						
of the third order	d_{13}	=				<-35 dB ²⁾
of the fifth order	d_{15}	=				<-40 dB ²⁾

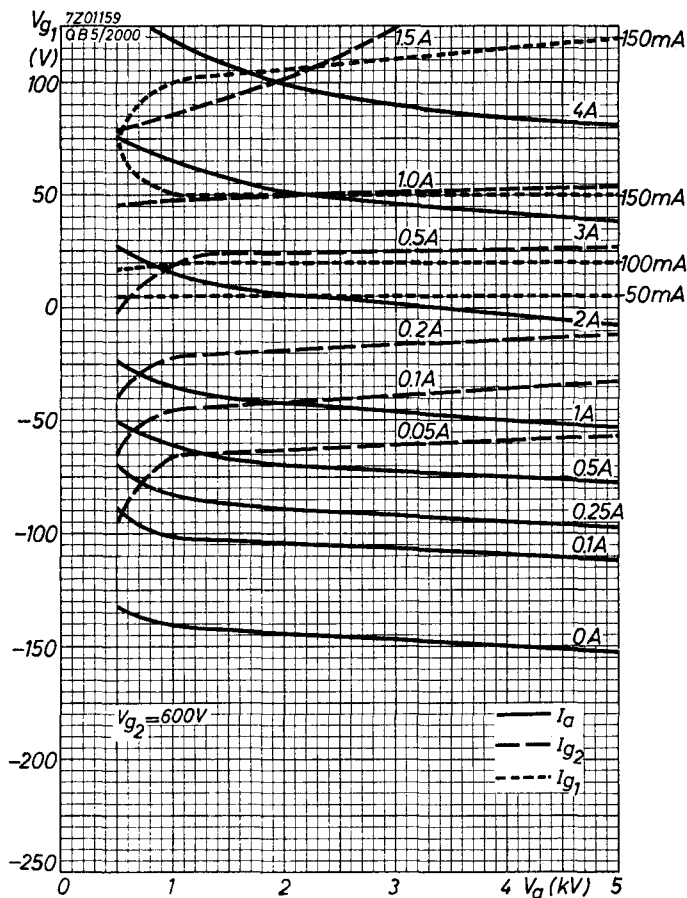
¹⁾ To be adjusted so that $I_a = 150 \text{ mA}$ at $V_{g1 p} = 0 \text{ V}$

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 %











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5	A	1962.12.12
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7	C	1962.12.12
8	D	1962.12.12
9	FP	2000.01.15