

TRIODE-PENTODE

Triode pentode intended for use as frequency changer in V.H.F. television tuners.

QUICK REFERENCE DATA

Triode section

Anode current	I_a	14 mA
Transconductance	S	5.7 mA/V
Amplification factor	μ	17 -

Pentode section

Anode current	I_a	10 mA
Transconductance	S	12 mA/V
Amplification factor	$\mu_{g_2g_1}$	70 -

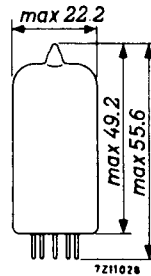
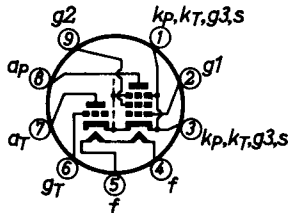
HEATING: Indirect by A. C. or D. C. ; series supply

Heater current	I_f	300 mA
Heater voltage	V_f	8 V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Noval



CAPACITANCES

Triode section

Anode to all except grid	$C_a(g)$	1.1 pF
Grid to all except anode	$C_g(a)$	2.4 pF
Anode to grid	C_{ag}	2.0 pF

Pentode section

Anode to all except grid No.1	$C_a(g_1)$	3.5 pF
Grid No.1 to all except anode	$C_{g_1(a)}$	5.8 pF
Anode to grid No.1	C_{ag_1}	0.012 pF
Grid No.1 to grid No.2	$C_{g_1g_2}$	1.7 pF

Between triode and pentode sections

Anode triode to anode pentode	C_{aT^ap}	0.125 pF
Grid triode to anode pentode	C_{gT^ap}	0.014 pF
Anode triode to grid No.1 pentode	$C_{aT^g_1P}$	max.0.010 pF
Grid triode to grid No.1 pentode	$C_{gT^g_1P}$	max.0.010 pF

TYPICAL CHARACTERISTICS

Triode section

Anode voltage	V_a	100 V
Grid voltage	V_g	-3 V
Anode current	I_a	14 mA
Transconductance	S	5.7 mA/V
Amplification factor	μ	17 -

Pentode section

Anode voltage	V_a	170 V
Grid No.2 voltage	V_{g_2}	150 V
Grid No.1 voltage	V_{g_1}	-1.2 V
Anode current	I_a	10 mA
Grid No.2 current	I_{g_2}	3.8 mA
Transconductance	S	12 mA/V
Amplification factor	$\mu_{g_2g_1}$	70 -
Internal resistance	R_i	min. 350 k Ω
Equivalent noise resistance	R_{eq}	1 k Ω

OPERATING CHARACTERISTICSTriode section as oscillator

Anode supply voltage	V_{ba}	190 V
Anode resistor	R_a	8.2 k Ω
Grid resistor	R_g	10 k Ω
Oscillator voltage	V_{osc}	4.5 V _{RMS}
Anode current	I_a	12 mA
Effective transconductance	S_{eff}	3.5 mA/V

Pentode section as mixer

Anode supply voltage	V_{ba}	190 V
Grid No.2 supply voltage	V_{bg2}	190 V
Grid No.2 resistor	R_{g2}	18 k Ω
Grid No.1 resistor	R_{g1}	100 k Ω
Oscillator voltage	V_{osc}	2.3 V _{RMS}
Anode current	I_a	8.5 mA
Grid No.2 current	I_{g2}	3.0 mA
Grid No.1 current	I_{g1}	30 μ A
Conversion conductance	S_c	4.5 mA/V
Internal resistance	R_i	0.6 M Ω

LIMITING VALUESTriode section

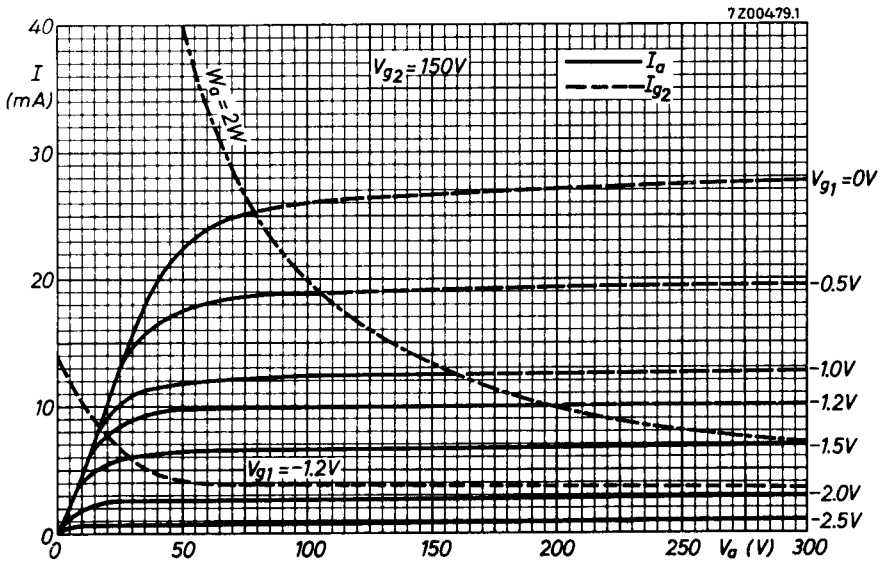
Anode voltage	V_{a_0}	max. 550 V
	V_a	max. 250 V
Anode dissipation	W_a	max. 1.5 W
Cathode current	I_k	max. 15 mA
Grid resistor	R_g	max. 0.5 M Ω
Cathode to heater voltage	V_{kf}	max. 100 V ¹⁾

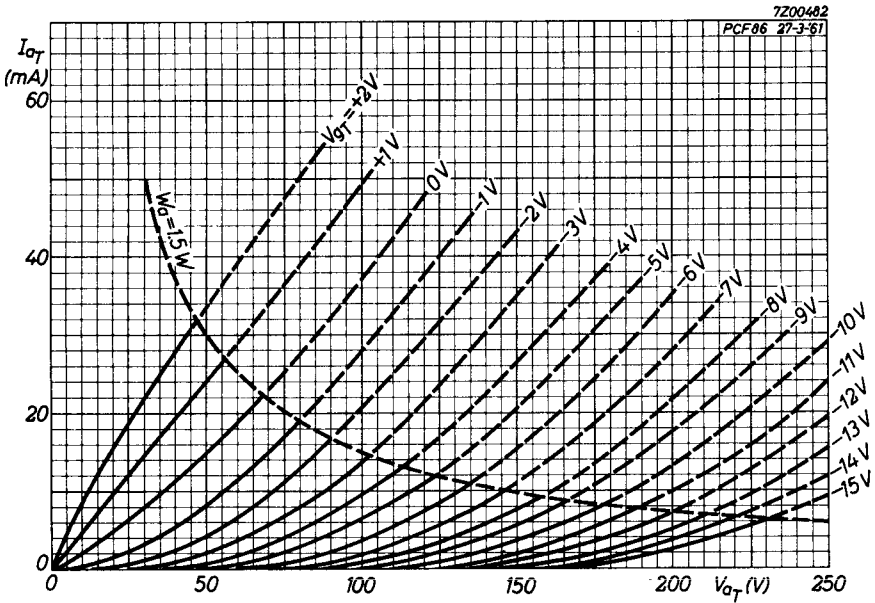
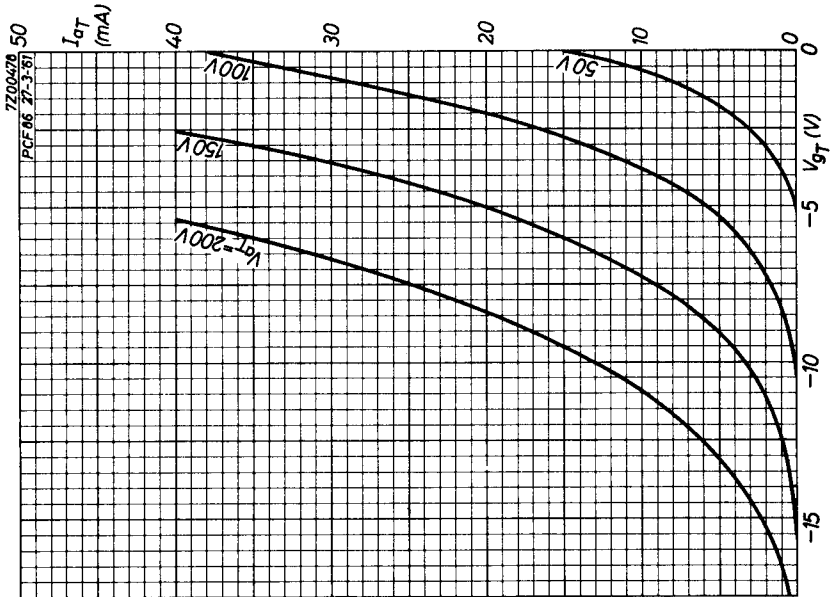
Pentode section

Anode voltage	V_{a_0}	max. 550 V
	V_a	max. 250 V
Grid No.2 voltage	$V_{g_{2_0}}$	max. 550 V
	V_{g_2}	max. 150 V
Anode dissipation	W_a	max. 2.0 W
Grid No.2 dissipation	W_{g_2}	max. 0.5 W
Cathode current	I_k	max. 18 mA
Grid No.1 resistor	R_{g_1}	max. 0.5 M Ω
Cathode to heater voltage	V_{kf}	max. 100 V ¹⁾

¹⁾ To fulfil the modulation hum requirements in intercarrier receivers, V_{kf} should not exceed 75 V_{RMS}.

With respect to modulation hum in A.M. sound receivers, V_{kf} should not exceed 50 V_{RMS}.





PHILIPS

Data handbook



Electronic
components
and materials

PCF86

page	sheet	date
1	1	1969.12
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4	4	1969.12
5	5	1969.12
6	6	1969.01
7	FP	1999.07.31