

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

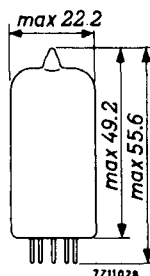
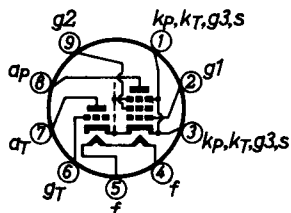
Heater voltage

V_f 8 V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Noval



CAPACITANCESTriode 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_{aTg_1P}	max.0.010	pF
Grid triode to grid No.1 pentode	C_{gTg_1P}	max.0.010	pF

TYPICAL CHARACTERISTICSTriode 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	$k\Omega$
Grid resistor	R_g	10	$k\Omega$
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	$k\Omega$
Grid No.1 resistor	R_{g1}	100	$k\Omega$
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	μA
Conversion conductance	S_c	4.5	mA/V
Internal resistance	R_i	0.6	$M\Omega$

LIMITING VALUESTriode section

Anode voltage	V_{a0}	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⁾

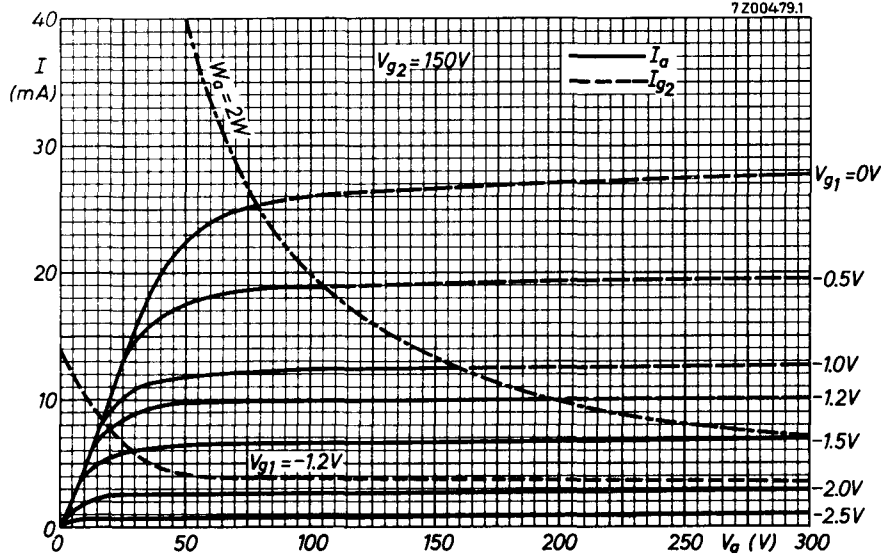
Pentode section

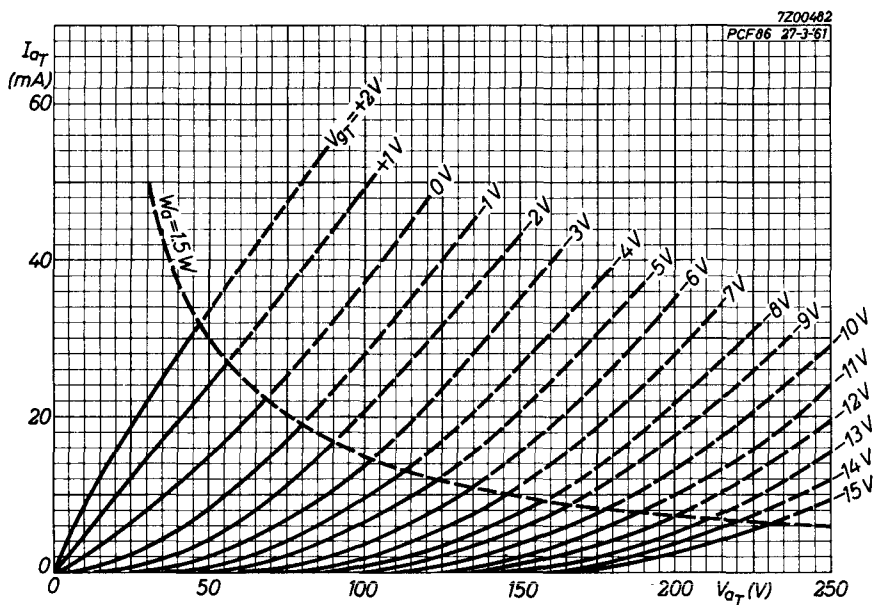
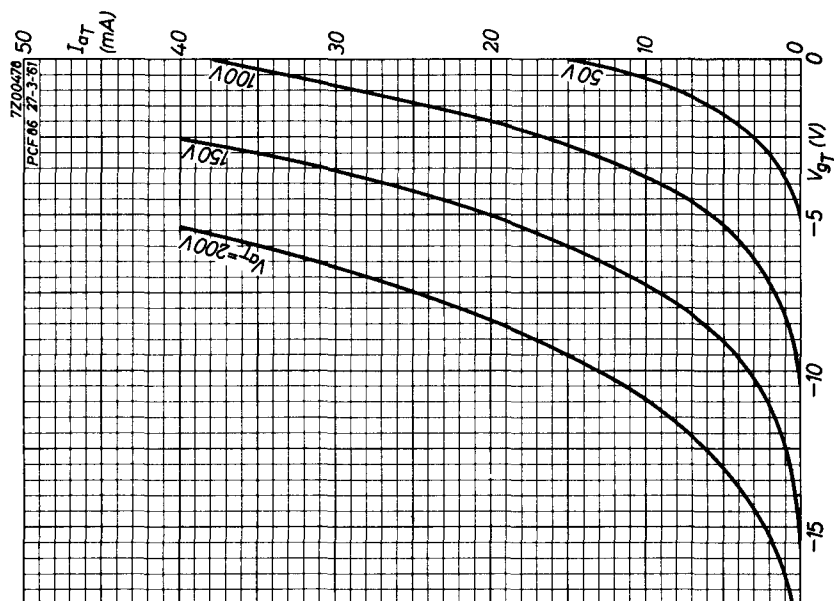
Anode voltage	V_{a0}	max. 550 V
	V_a	max. 250 V
Grid No.2 voltage	V_{g20}	max. 550 V
	V_{g2}	max. 150 V
Anode dissipation	W_a	max. 2.0 W
Grid No.2 dissipation	W_{g2}	max. 0.5 W
Cathode current	I_k	max. 18 mA
Grid No.1 resistor	R_{g1}	max. 0.5 M Ω
Cathode to heater voltage	V_{kf}	max. 100 V ¹⁾

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}.

7Z00479.1





PHILIPS

Data handbook



**Electronic
components
and materials**

PCF86

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1	1	1969.12
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7	FP	1999.07.31