

## 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	$\mu$	17 -

#### Pentode section

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

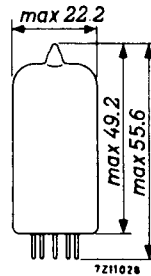
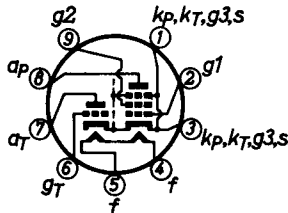
**HEATING:** Indirect by A. C. or D. C. ; series supply

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	$\mu$	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 $\Omega$
Equivalent noise resistance	$R_{eq}$	1 k $\Omega$

**OPERATING CHARACTERISTICS**Triode 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 <sub>RMS</sub>
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 <sub>RMS</sub>
Anode current	$I_a$	8.5 mA
Grid No.2 current	$I_{g2}$	3.0 mA
Grid No.1 current	$I_{g1}$	30 $\mu$ A
Conversion conductance	$S_c$	4.5 mA/V
Internal resistance	$R_i$	0.6 M $\Omega$

**LIMITING VALUES**Triode section

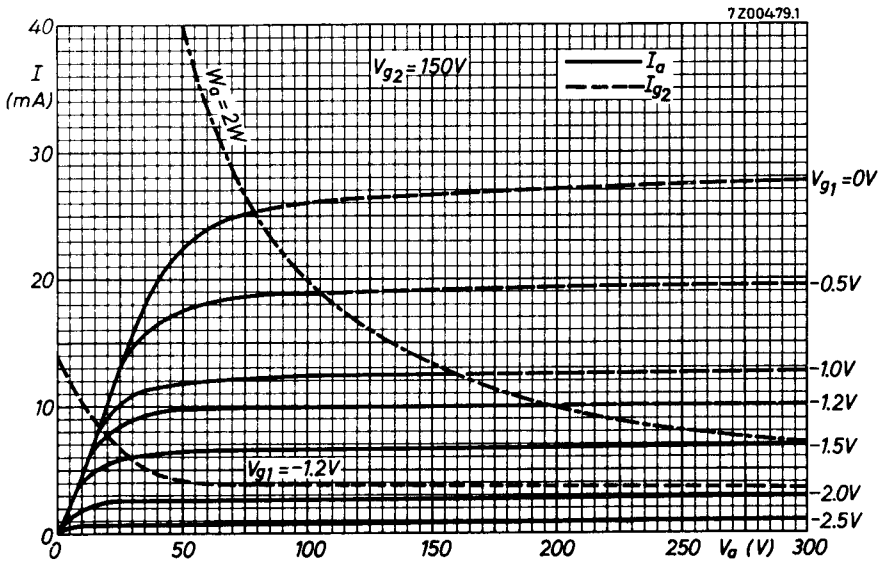
Anode voltage	$V_{a_0}$	max. 550 V
	$V_a$	max. 250 V
Anode dissipation	$W_a$	max. 1.5 W
Cathode current	$I_k$	max. 15 mA
Grid resistor	$R_g$	max. 0.5 M $\Omega$
Cathode to heater voltage	$V_{kf}$	max. 100 V <sup>1)</sup>

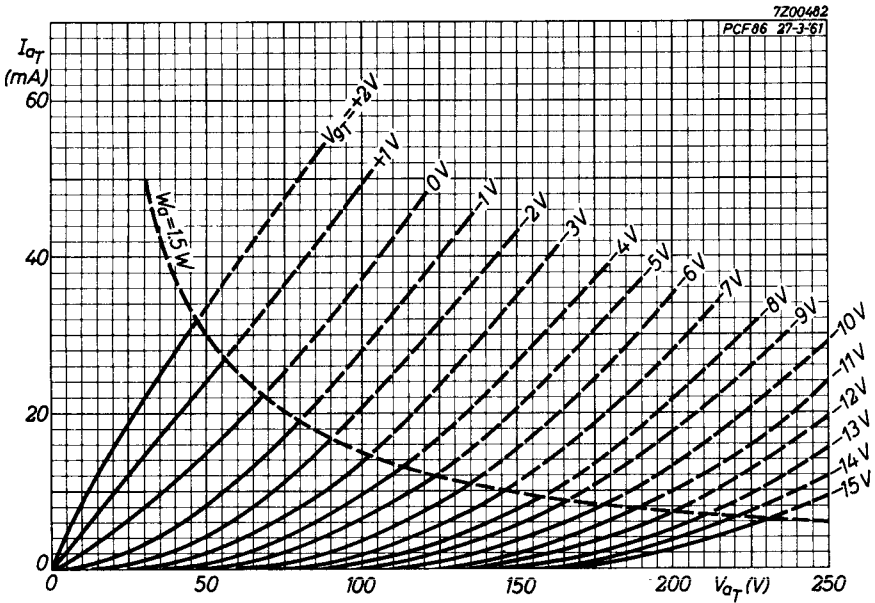
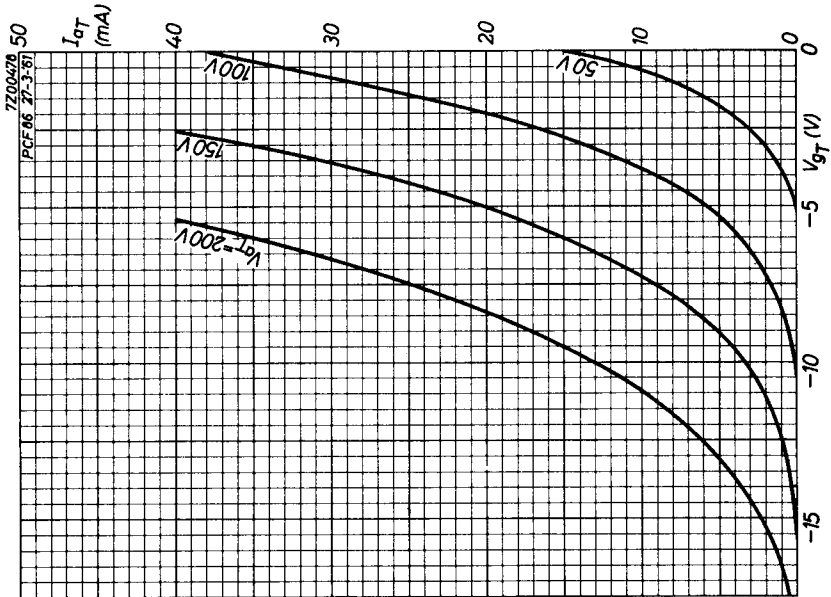
Pentode section

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 $\Omega$
Cathode to heater voltage	$V_{kf}$	max. 100 V <sup>1)</sup>

<sup>1)</sup> To fulfil the modulation hum requirements in intercarrier receivers,  $V_{kf}$  should not exceed 75 V<sub>RMS</sub>.

With respect to modulation hum in A.M. sound receivers,  $V_{kf}$  should not exceed 50 V<sub>RMS</sub>.





# PHILIPS

Data handbook



Electronic  
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## PCF86

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