

TRIODE-FRAME OUTPUT PENTODE

Triode-pentode with separate cathodes. Triode intended for use as frame oscillator or pulse amplifier.

Pentode intended for use as frame output tube.

QUICK REFERENCE DATA

Triode section

Anode current	I_a	10.5	mA
Transconductance	S	7	mA/V
Amplification factor	μ	63	-
Cathode peak current	I_{kp}	max. 150	mA

Pentode section

Anode peak voltage	V_{ap}	max. 2	kV
Cathode current	I_k	max. 75	mA
Anode dissipation	W_a	max. 8	W

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

Heater current

I_f 300 mA

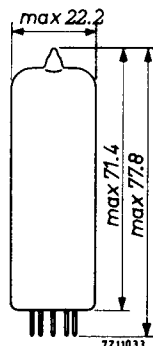
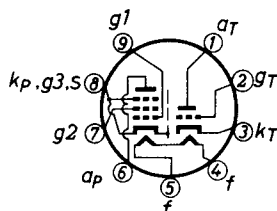
Heater voltage

V_f 17.5 V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Noval



CAPACITANCES

Grid triode to anode pentode	C_{gTap}	max. 0.05 pF
Grid triode to heater	C_{gTf}	max. 0.15 pF
Grid No.1 pentode to anode pentode	C_{g1pap}	max. 1.0 pF
Grid No.1 pentode to anode triode	C_{g1paT}	max. 0.08 pF
Grid No.1 pentode to heater	C_{g1Pf}	max. 0.20 pF

TYPICAL CHARACTERISTICS

Triode section

Anode voltage	V_a	100	100	V
Grid voltage	V_g	-0.85	0	V
Anode current	I_a	5	10.5	mA
Transconductance	S	5.5	7.0	mA/V
Amplification factor	μ	60	63	-
Internal resistance	R_i	11	9	k Ω

OPERATING CHARACTERISTICS

Pentode section

Frame output application

Anode voltage	V_a	50	65	V
Grid No.2 voltage	V_{g2}	170	210	V
Grid No.1 voltage	V_{g1}	-1	-1	V
Anode peak current	I_{ap}	200	285	mA
Grid No.2 peak current	I_{g2p}	35	45	mA

Remarks

The minimum I_{ap} value to be expected as a result of spread of the tube characteristics, tube deterioration during life and decrease of the mains voltage to 10% below the nominal value, can be derived from the curves on page 9 by decreasing by 40% the I_a values of curve A-B at the V_{g2} value occurring at the decreased mains voltage.

In order not to exceed the maximum permissible value of W_{g2} , the circuit should be designed such that at a mains voltage of 10% below nominal, V_a at the end of scan will not be lower than the value determined by curve A-B at the relevant V_{g2} value.

HUM

The equivalent pentode grid hum voltage without negative feedback is max. 10 mV when Z_{g1} (at $f = 50$ Hz) $\leq 0.5 \text{ M}\Omega$, $C_{g1-f} = 0.2 \text{ pF}$ and $V_{kf} = 150 \text{ V}_{\text{RMS}}$.

LIMITING VALUES (Design centre rating system)

Triode section

Anode voltage	V_{a0}	max. 550 V
	V_a	max. 300 V
Anode dissipation	W_a	max. 0.5 W
Cathode current		
average	I_k	max. 15 mA
peak	I_{kp}	max. 150 mA ¹⁾
peak	I_{kp}	max. 100 mA ²⁾
Grid resistor		
for fixed bias	R_g	max. 1 $\text{M}\Omega$
for automatic bias	R_g	max. 3.3 $\text{M}\Omega$
Cathode to heater voltage	V_{kf}	max. 200 V ³⁾

Remark

A cathode peak current of 100 mA will be available throughout life and at under-heating.

¹⁾ Max. pulse duration 2% of a cycle with a maximum of 400 μsec .

²⁾ Max. pulse duration 4% of a cycle with a maximum of 800 μsec .

³⁾ During warming up the D.C. component of $V_{kf} = \text{max. } 315 \text{ V}$, k pos.

LIMITING VALUES (continued)

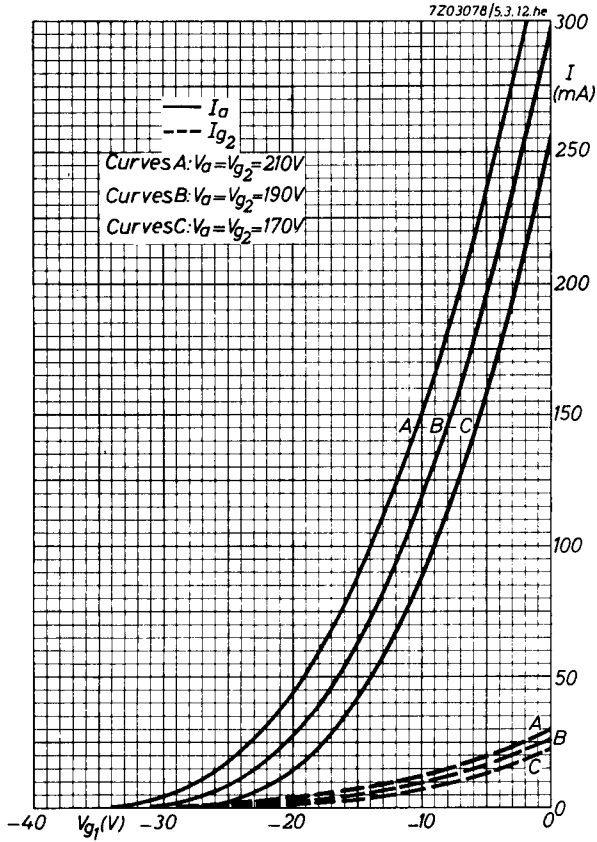
Pentode section

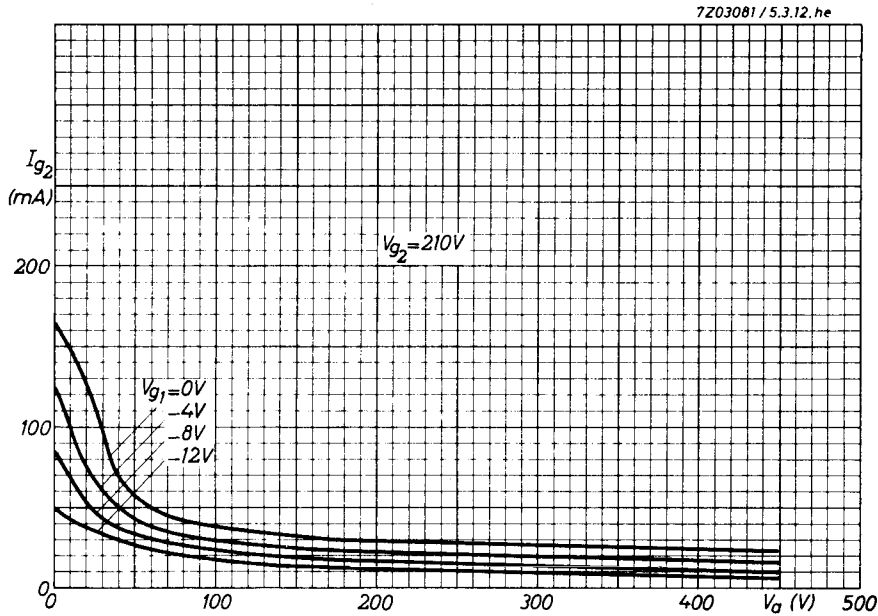
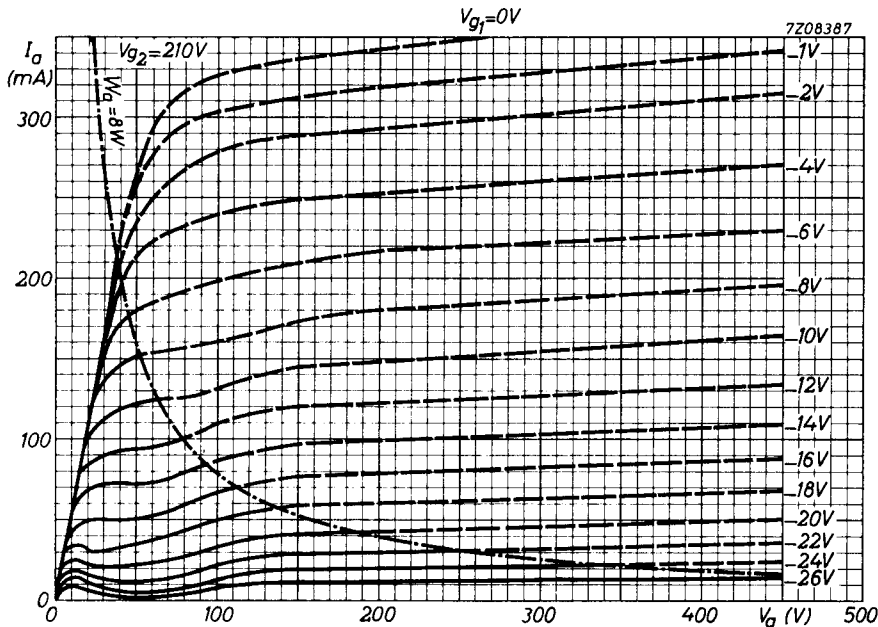
Anode voltage	V_{a0}	max. 550 V
	V_a	max. 300 V
Anode peak voltage	V_{ap}	max. 2 kV ¹⁾
Grid No. 2 voltage	V_{g20}	max. 550 V
	V_{g2}	max. 250 V
Anode dissipation	W_a	max. 8 W ²⁾
Grid No. 2 dissipation	W_{g2}	max. 1.5 W ³⁾
Cathode current	I_k	max. 75 mA
Grid No. 1 resistor		
for fixed bias	R_{g1}	max. 1.0 MΩ
for automatic bias	R_{g1}	max. 2.2 MΩ
Cathode to heater voltage	V_{kf}	max. 200 V

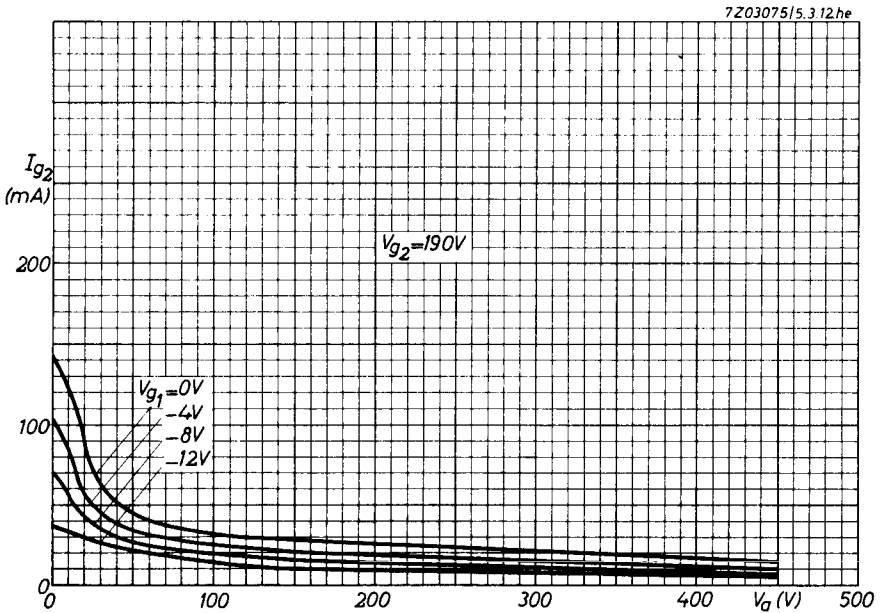
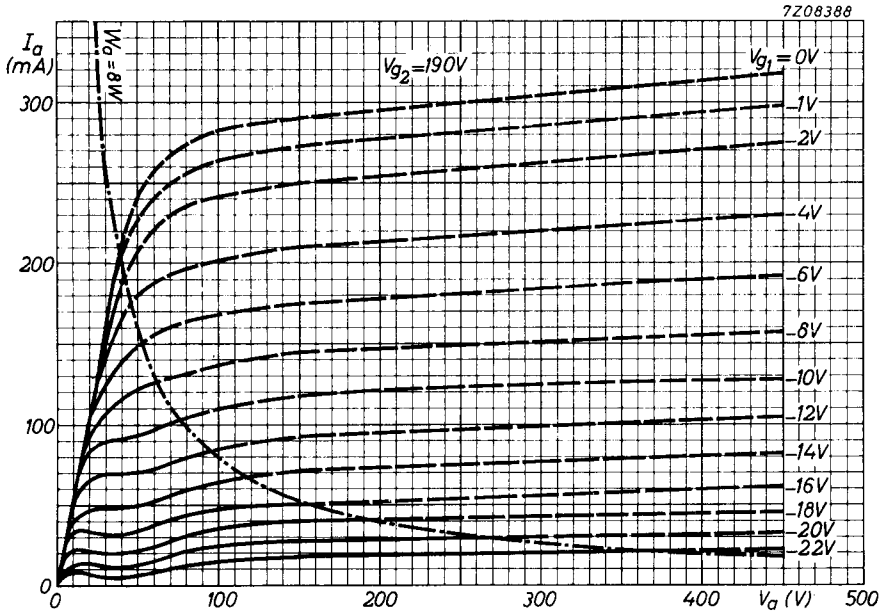
¹⁾ Max. pulse duration 5% of a cycle with a maximum of 1 ms.

²⁾ For a nominal tube at the worst probable operating conditions and at normal picture height W_a should not exceed 10.5 W.

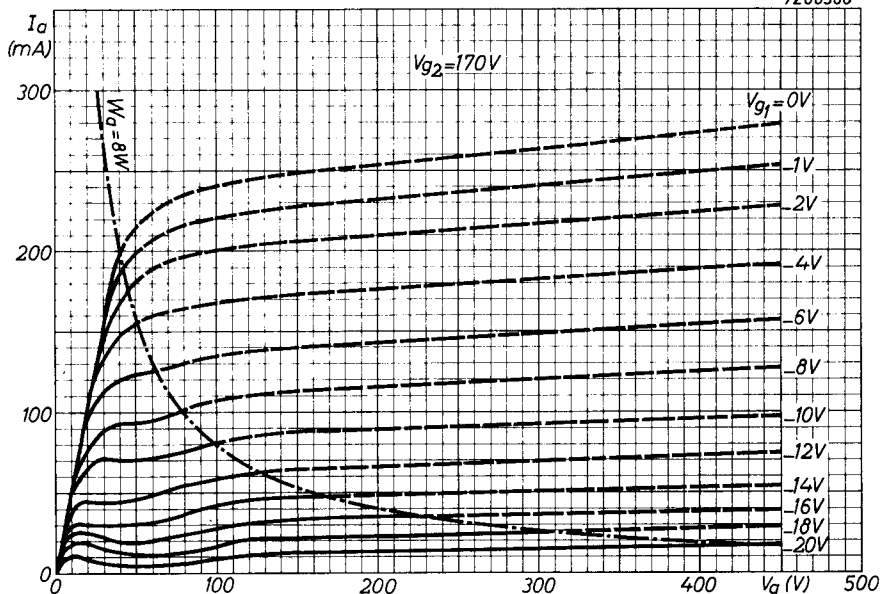
³⁾ For a nominal tube at the worst probable operating conditions and at normal picture height W_{g2} should not exceed 2 W.



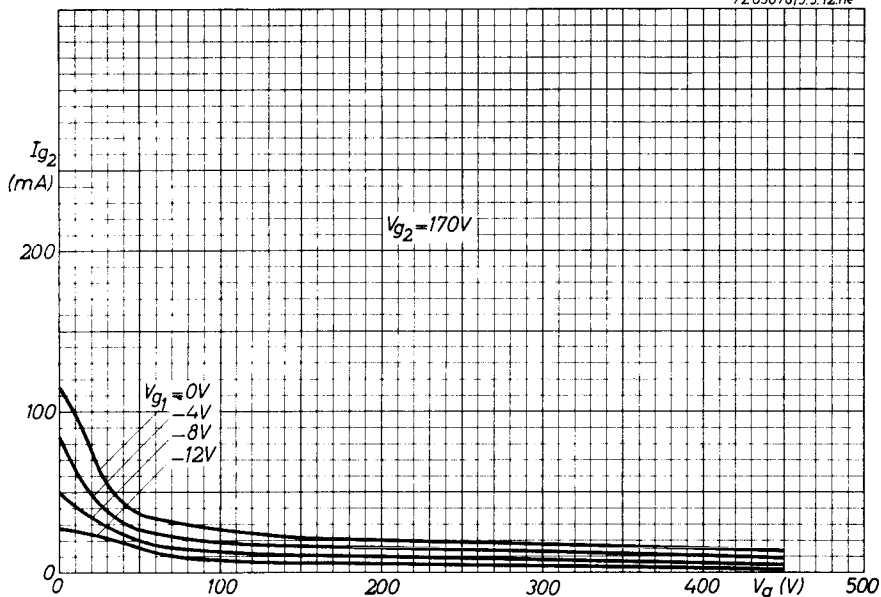




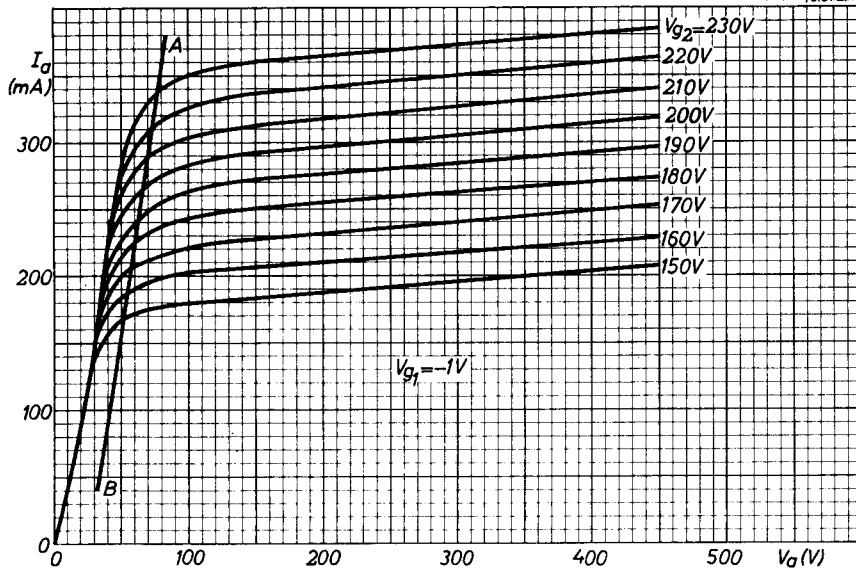
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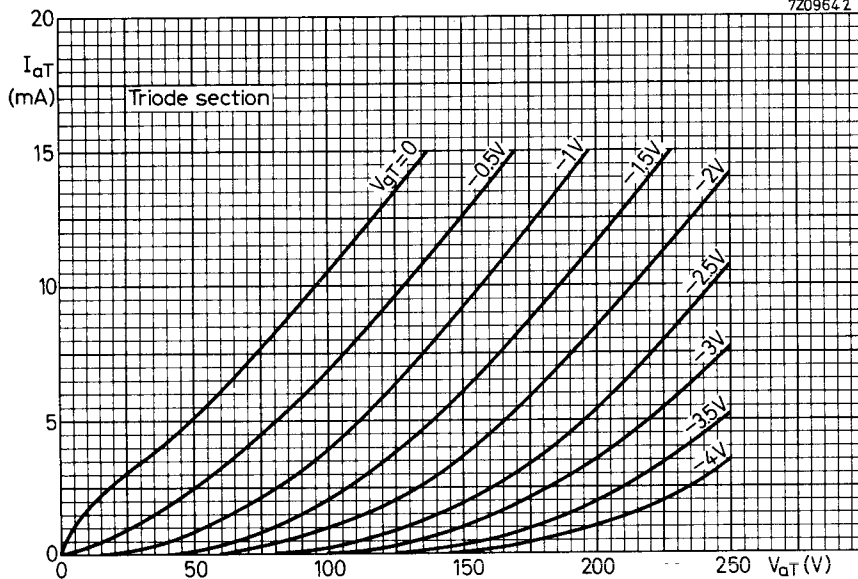
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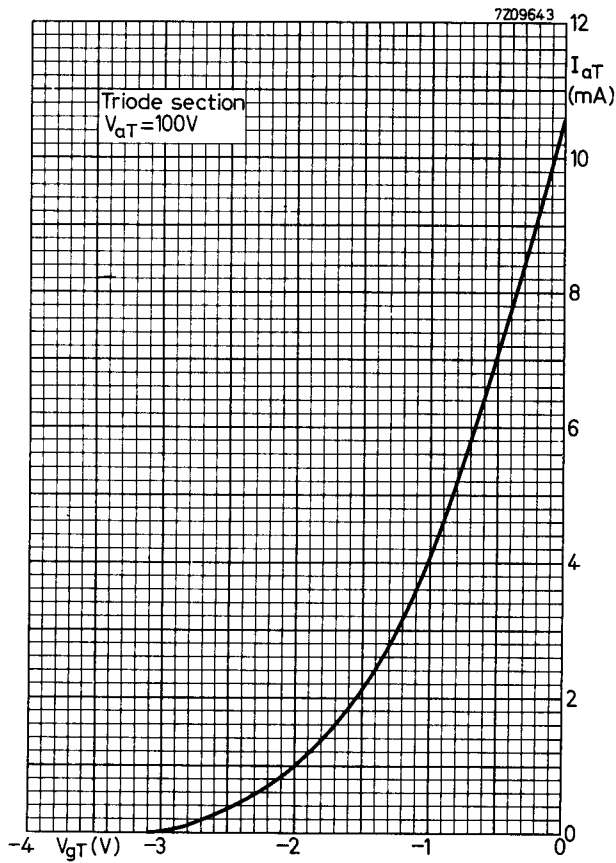


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PHILIPS

Data handbook



**Electronic
components
and materials**

PCL85 PCL805

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