

TRIODE-PENTODE

Triode-pentode intended for use in television receivers; triode section as limiter, noise detector, A.G.C. amplifier, sync. separator and pulse-amplifier; pentode section as sound I.F. amplifier and video I.F. amplifier.

QUICK REFERENCE DATA

Pentode section

Anode current	I_a	13 mA
Transconductance	S	14 mA/V
Amplification factor	$\mu_{g_2g_1}$	53 -

Triode section

Anode current	I_a	8.5 mA
Transconductance	S	5.2 mA/V
Amplification factor	μ	57 -

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

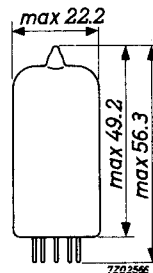
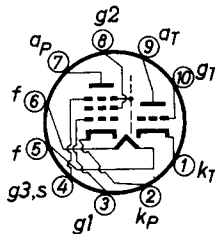
Heater current I_f 300 mA

Heater voltage V_f 8.5 V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Decal



CAPACITANCES

Triode section

Grid to all except anode	$C_{g(a)}$	2.1 pF
Anode to all except grid	$C_{a(g)}$	3.0 pF
Anode to grid	C_{ag}	2.2 pF

Pentode section

Grid No.1 to all except anode	$C_{g_1(a)}$	6.0 pF
Anode to all except grid No.1	$C_{a(g_1)}$	3.3 pF
Anode to grid No.1	C_{ag_1}	0.0056 pF
	$C_{ag_1 \text{ max.}}$	0.008 pF
Grid No.1 to grid No.2	$C_{g_1g_2}$	1.7 pF
Grid No.1 to cathode	C_{g_1k}	3.7 pF

Between triode and pentode sections

Pentode anode to triode anode	C_{aP-aT}	max. 0.015 pF
Pentode grid No.1 to triode anode	C_{g_1P-aT}	max. 0.0012 pF
Pentode grid No.1 to triode grid	C_{g_1P-gT}	max. 0.0015 pF

TYPICAL CHARACTERISTICS

Pentode section

Anode voltage	V_a	160 V
Grid No.3 voltage	V_{g_3}	0 V
Grid No.2 voltage	V_{g_2}	135 V
Grid No.1 voltage	V_{g_1}	-1.7 V
Anode current	I_a	13 mA
Grid No.2 current	I_{g_2}	5.3 mA
Transconductance	S	14 mA/V
Amplification factor	$\mu_{g_2g_1}$	53 -

Triode section

Anode voltage	V_a	170 V
Grid voltage	V_g	-1.0 V
Anode current	I_a	8.5 mA
Transconductance	S	5.2 mA/V
Amplification factor	μ	57 -

OPERATING CHARACTERISTICSPentode section as sound or video I.F. amplifier (g_3 connected to earth)

Supply voltage	V_b	210	230	V
Anode resistor	R_a	3.9	5.6	$k\Omega$
Grid No.2 resistor	R_{g_2}	15	22	$k\Omega$
Cathode resistor	R_k	91	83	Ω
Anode current	I_a	13.0	12.5	mA
Grid No.2 current	I_{g_2}	5.3	5.1	mA
Transconductance	S	14	14	mA/V
Input resistance at 40 MHz	r_{g_1}	6.6	6.6	$k\Omega$

Triode section as sync separator

Anode supply voltage	V_b	130 to 150	V
Anode resistor	R_a	33	$k\Omega$
Grid current	I_g	1	μA
Anode current	I_a	min. 2	mA

LIMITING VALUES (Design centre rating system)

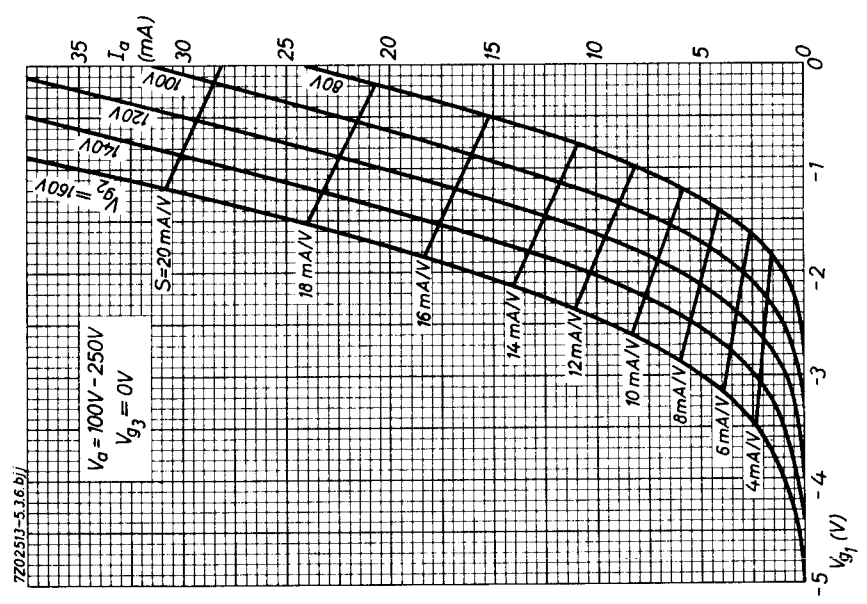
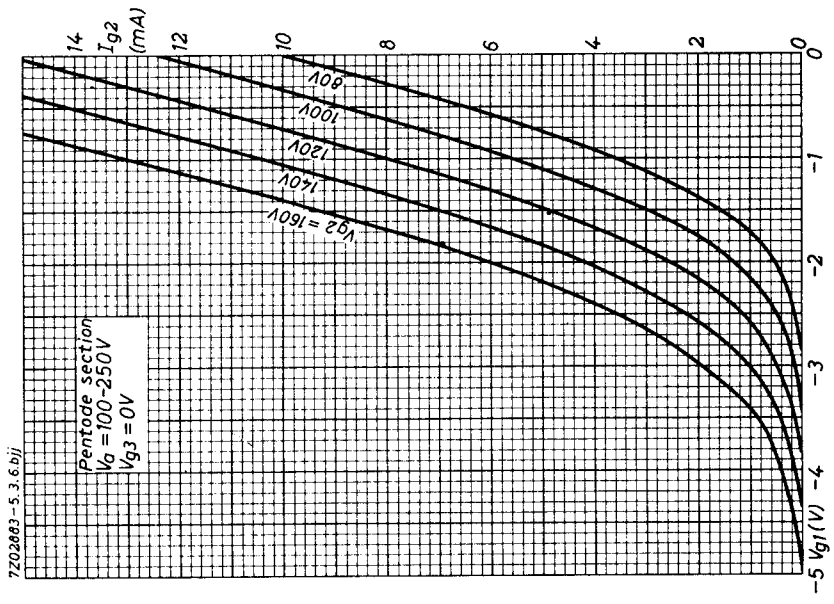
Pentode section

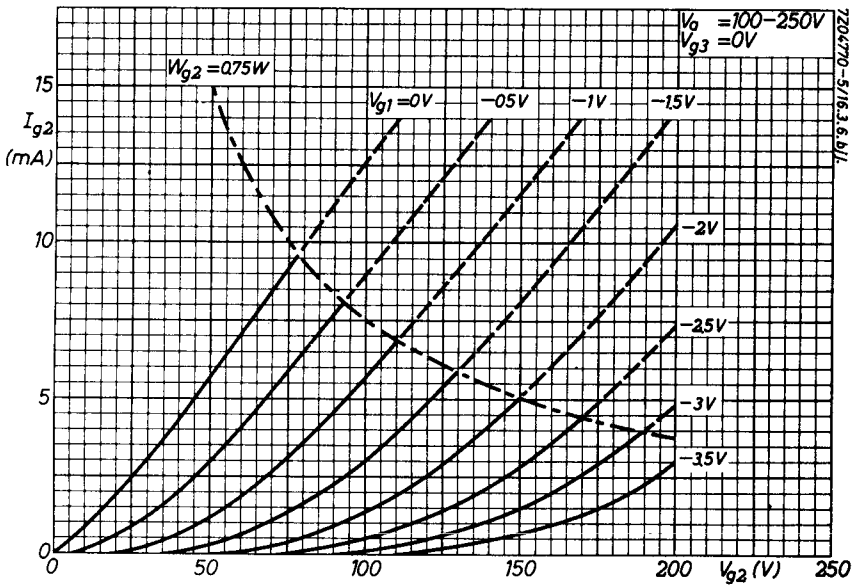
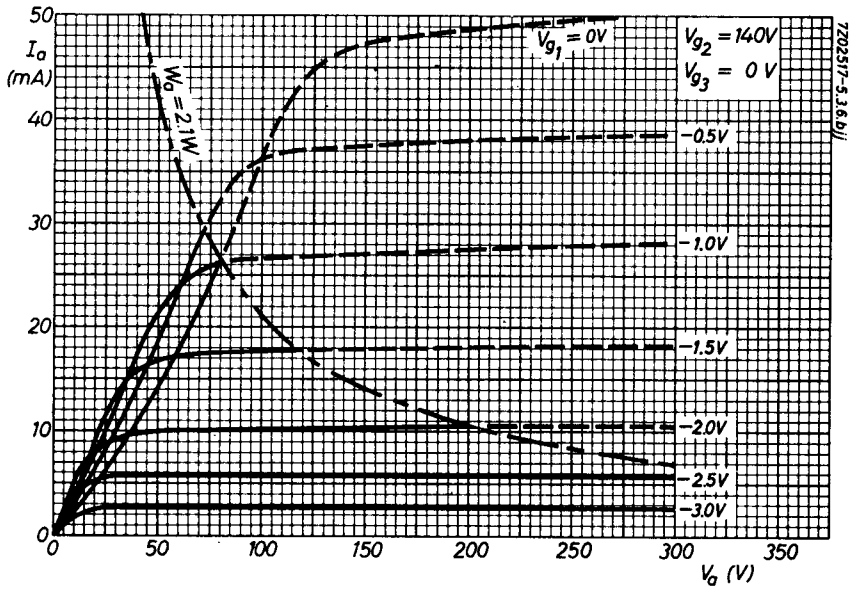
Anode voltage	V_{a0}	max. 550 V
	V_a	max. 250 V
Anode dissipation	W_a	max. 2.1 W
Cathode current	I_k	max. 20 mA
Grid No.2 voltage	V_{g20}	max. 550 V
	V_{g2}	max. 250 V
Grid No.2 dissipation	W_{g2}	max. 0.75 W
Cathode to heater voltage	V_{kf}	max. 150 V
Grid No.1 resistor	R_{g1}	max. 1 M Ω

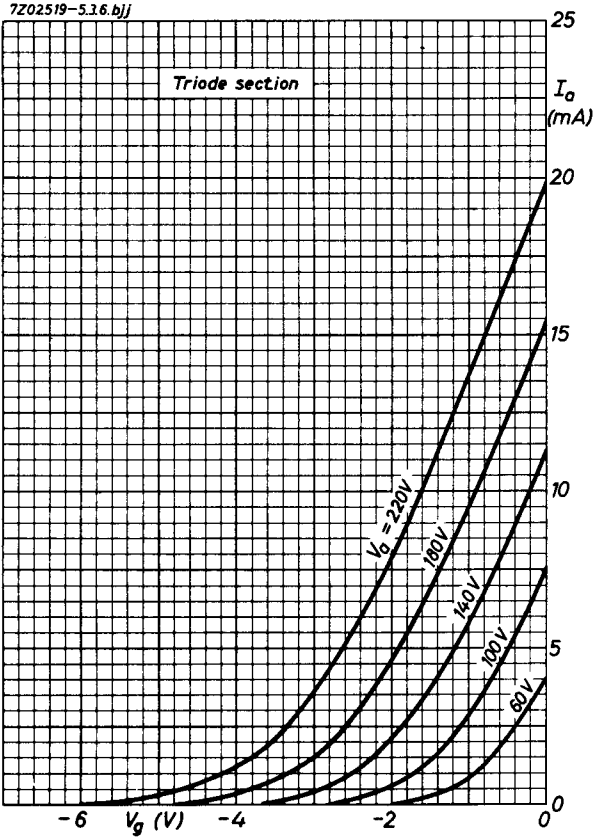
Triode section

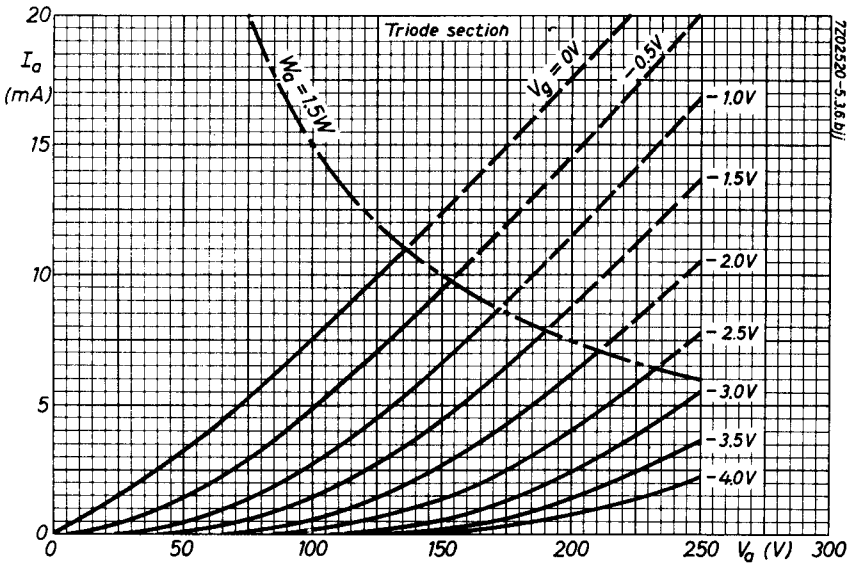
Peak anode voltage ($I_a < 0.1$ mA)	V_{ap}	max. 600 V ¹⁾
Anode voltage	V_{a0}	max. 550 V
	V_a	max. 250 V
Anode dissipation	W_a	max. 1.5 W
Cathode current	I_k	max. 18 mA
Grid resistor	R_g	max. 1 M Ω
Cathode to heater voltage:		
cathode negative with respect to heater	V_{kf}	max. 150 V
cathode positive with respect to heater	V_{kf}	max. 200 V + max. 150 V _{RMS}

¹⁾ Max. pulse duration is 18 % of a cycle but max. 18 μ sec.









PHILIPS

Data handbook



Electronic
components
and materials

PCF200

page	sheet	date
1	1	1969.12
2	2	1969.12
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8	8	1969.12
9	FP	1999.08.01