

## TRIODE-PENTODE

Triode pentode intended for use in T.V. receivers; triode section as line-blocking oscillator, part of a multivibrator, sync separator, pulse amplifier or A.G.C. delay diode; pentode section with remote cut-off as video I.F. amplifier.

### QUICK REFERENCE DATA

<u>Pentode section</u>			
Anode current	$I_a$	13	mA
Transconductance	S	12.6	mA/V
Amplification factor	$\mu_{g_2g_1}$	45	-
<u>Triode section</u>			
Anode current	$I_a$	14	mA
Transconductance	S	4.8	mA/V
Amplification factor	$\mu$	17.5	-
Cathode peak current	$I_{kp}$	max. 50	mA

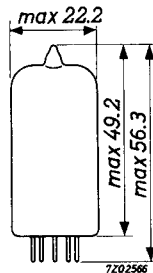
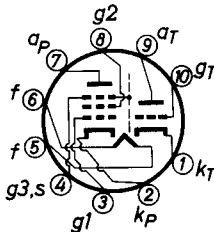
**HEATING:** Indirect by A.C. or D.C.; series supply

Heater current	$I_f$	300	mA
Heater voltage	$V_f$	8.5	V

### DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Decal



**CAPACITANCES**

Pentode section

Anode to all except grid No.1	$C_{a(g_1)}$	3.3 pF
Grid No.1 to all except anode	$C_{g_1(a)}$	6.0 pF
Grid No.1 to cathode	$C_{kg_1}$	3.7 pF
Anode to grid No.1	$C_{ag_1}$	0.0056 pF
Grid No.1 to grid No.2	$C_{ag_1}$	max. 0.008 pF
	$C_{g_1g_2}$	1.7 pF

Triode section

Anode to all except grid	$C_{a(g)}$	3.0 pF
Grid to all except anode	$C_{g(a)}$	2.1 pF
Anode to grid	$C_{ag}$	2.0 pF

Between pentode and triode sections

Pentode anode to triode anode	$C_{aPaT}$	max. 0.015 pF
Pentode grid No.1 to triode anode	$C_{g_1PaT}$	max. 0.0012 pF
Pentode grid No.1 to triode grid	$C_{g_1PgT}$	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	$V_{g_2}$	110 V
Grid No.1 voltage	$V_{g_1}$	-1.4 V
Anode current	$I_a$	13 mA
Grid No.2 current	$I_{g_2}$	5.3 mA
Transconductance	S	12.6 mA/V
Amplification factor	$\mu_{g_2g_1}$	45 -

Triode section

Anode voltage	$V_a$	100 V
Grid voltage	$V_g$	-2 V
Anode current	$I_a$	14 mA
Transconductance	S	4.8 mA/V
Amplification factor	$\mu$	17.5 -

## OPERATING CHARACTERISTICS

Pentode section as video I.F. amplifier ( $g_3$  connected to earth)

Supply voltage	$V_b$	210	230	250	V
Anode resistor	$R_a$	3.9	5.6	6.8	$k\Omega$
Grid No.2 resistor	$R_{g_2}$	18	22	27	$k\Omega$
Cathode resistor	$R_k$	79	79	76	$\Omega$
Anode current	$I_a$	13.2	13.2	12.8	mA
Grid No.2 current	$I_{g_2}$	5.4	5.4	5.2	mA
Transconductance	S	12.6	12.6	12.6	mA/V
Grid No.1 voltage at 0.1 S	$V_{g_1}$	-5.1	-5.4	-5.7	V
Grid No.1 voltage at 0.01 S	$V_{g_1}$	-19	-20.5	-22	V
Grid No.1 input resistance at 40 MHz	$r_{g_1}$	7.4	7.4	7.4	$k\Omega$

Triode section as line-blocking oscillator

Anode voltage	$V_a$	30	V
Peak cathode current	$I_{k_p}$	40	mA
Peak anode current	$I_{a_p}$	25	mA
Peak grid current	$I_{g_p}$	15	mA

Triode section as sync. separator

Anode supply voltage	$V_{b_a}$	130 to 150	V
Anode resistor	$R_a$	33	$k\Omega$
Grid current	$I_g$	1	$\mu A$
Anode current	$I_a$	min. 2	mA

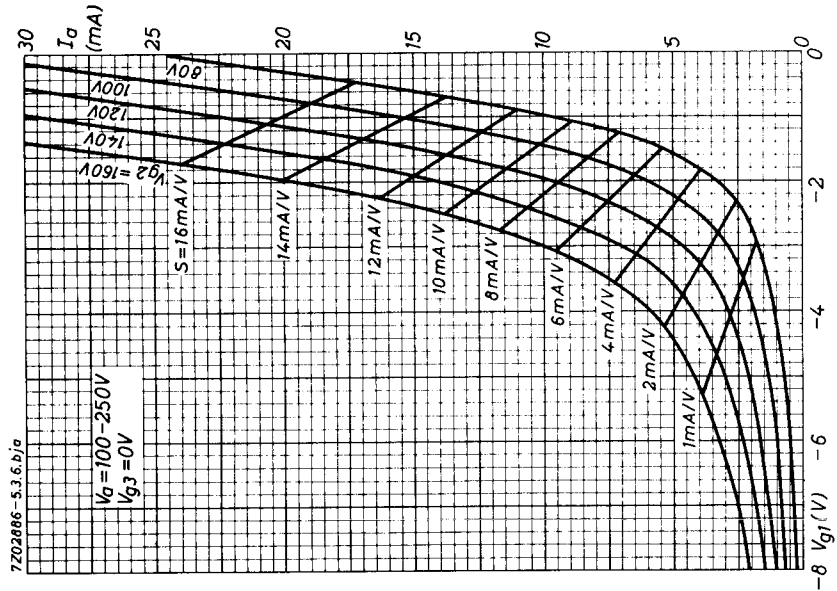
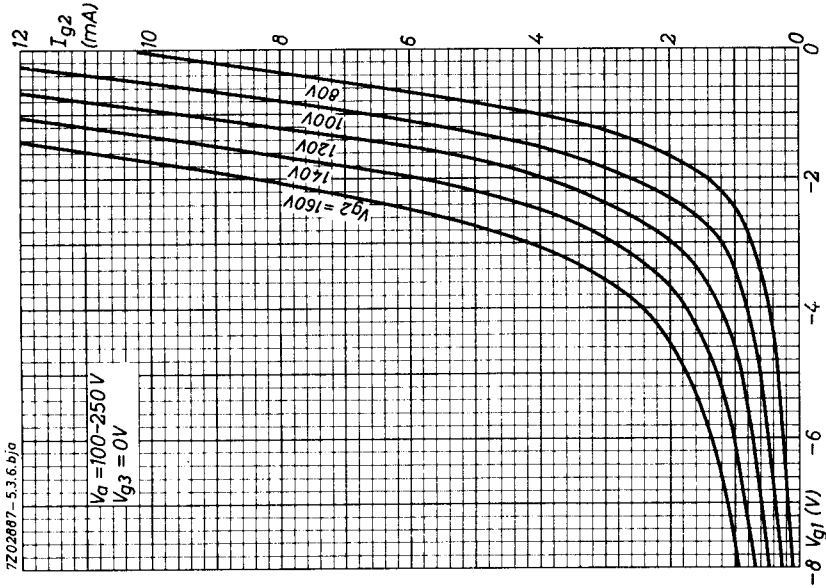
**LIMITING VALUES** (Design centre rating system)Pentode section

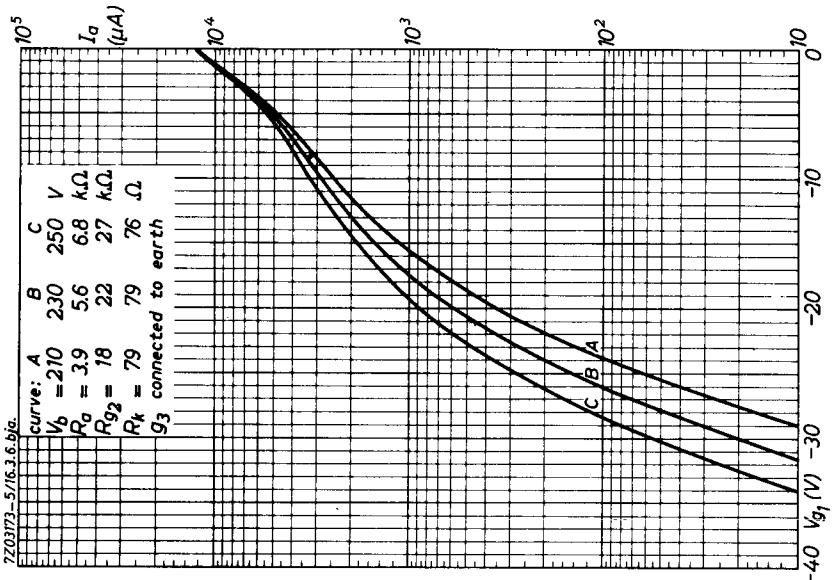
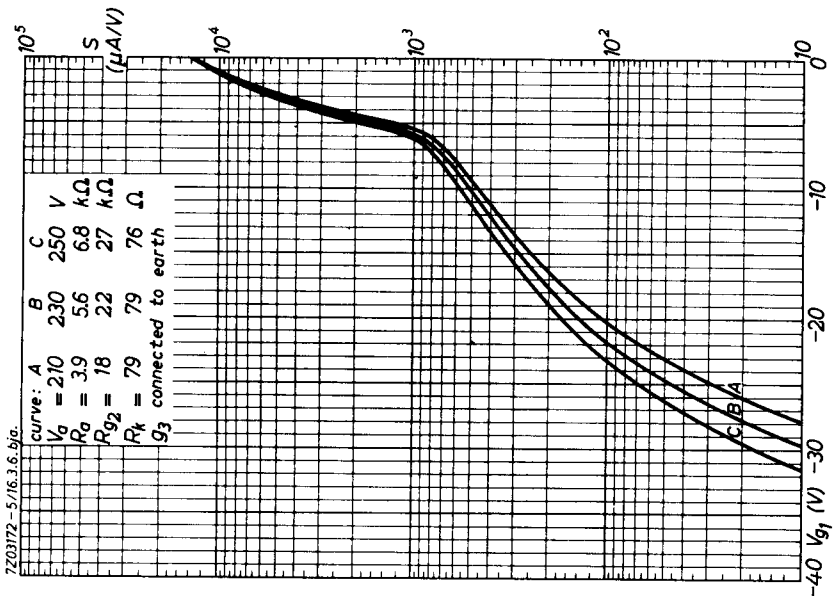
Anode voltage	$V_{a0}$	max. 550 V
	$V_a$	max. 250 V
Anode dissipation	$W_a$	max. 2.1 W
Grid No.2 voltage	$V_{g20}$	max. 550 V
	$V_{g2}$	max. 250 V
Grid No.2 dissipation	$W_{g2}$	max. 0.7 W
Grid No.1 resistor	$R_{g1}$	max. 1 M $\Omega$
Cathode current	$I_k$	max. 20 mA
Cathode to heater voltage	$V_{kf}$	max. 150 V

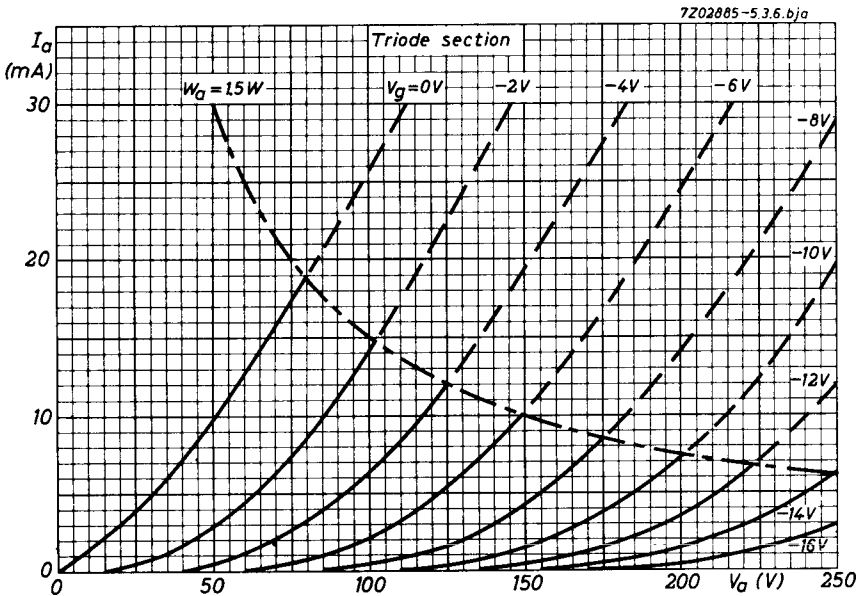
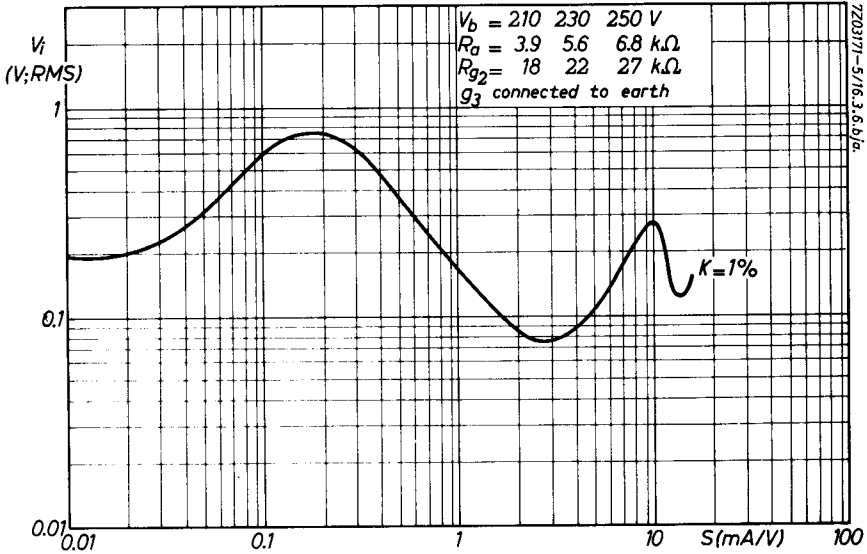
Triode section

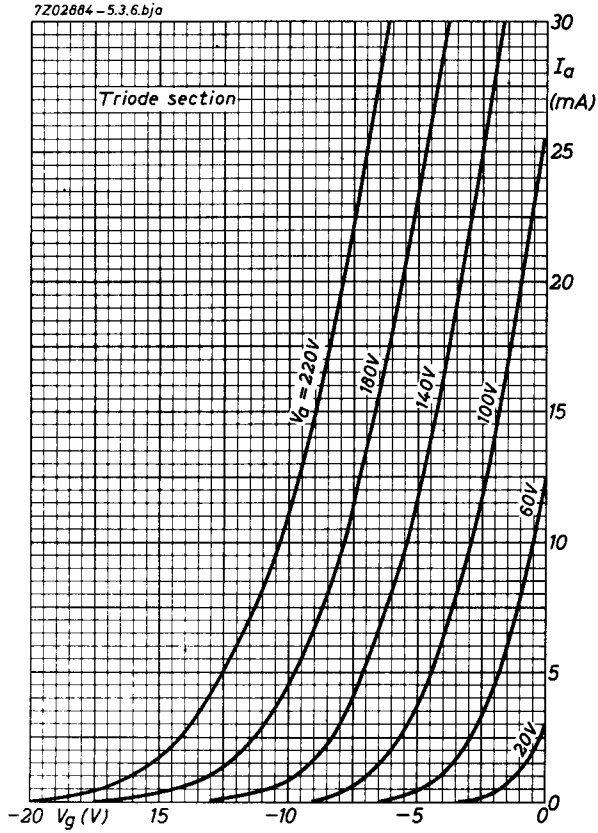
Anode voltage	$V_{a0}$	max. 550 V
	$V_a$	max. 250 V
Anode dissipation	$W_a$	max. 1.5 W
Grid resistor	$R_g$	max. 1 M $\Omega$
Cathode current	$I_k$	max. 18 mA
Peak cathode current	$I_{kp}$	max. 50 mA <sup>1)</sup>
Cathode to heater voltage	$V_{kf}$	max. 150 V

<sup>1)</sup> Maximum pulse duration 10% of a cycle but max. 10  $\mu$ s.











# PHILIPS

Data handbook



Electronic  
components  
and materials

## PCF201

<b>page</b>	<b>sheet</b>	<b>date</b>
1	1	1969.12
2	2	1969.12
3	3	1969.12
4	4	1969.12
5	5	1969.12
6	6	1969.12
7	7	1969.12
8	8	1969.12
9	FP	1999.08.01