

DOUBLE PENTODE

Double pentode intended for use as video output tube, sync. separator, A.G.C. amplifier or I. F. sound amplifier.

QUICK REFERENCE DATA

F section

Anode current	I_a	10 mA
Transconductance	S	8.5 mA/V
Amplification factor	μg_{2g_1}	38 -
Internal resistance	R_i	150 k Ω

L section

Anode current	I_a	30 mA
Transconductance	S	22 mA/V
Amplification factor	μg_{2g_1}	38 -
Internal resistance	R_i	33 k Ω

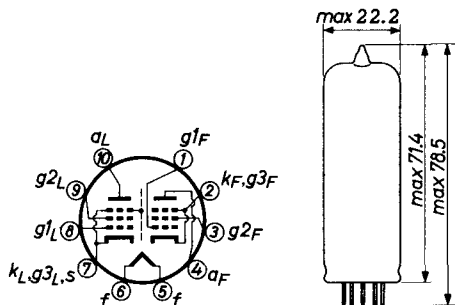
HEATING: Indirect by A.C. or D.C.; series supply

Heater current	I_f	300 mA
Heater voltage	V_f	17 V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Decal



CAPACITANCES

	L section	F section
Anode to all except grid No. 1	$C_{a(g_1)}$ 6.5	10.5 pF
Grid No. 1 to all except anode	$C_{g_1(a)}$ 12.5	10.5 pF
Anode to grid No. 1	C_{ag_1} 0.100	0.15 pF
Grid No. 1 to heater	C_{g_1f}	max. 0.15 pF

Between the two pentode sections

Anode L section to anode F section	C_{aL^aF}	max. 0.15 pF
Grid No. 1 L section to grid No. 1 F section	$C_{g_1L^g1F}$	max. 0.01 pF
Anode L section to grid No. 1 F section	C_{aL^g1F}	max. 0.10 pF
Grid No. 1 L section to anode F section	$C_{g_1L^aF}$	max. 0.005 pF

TYPICAL CHARACTERISTICS

Output pentode (L section)

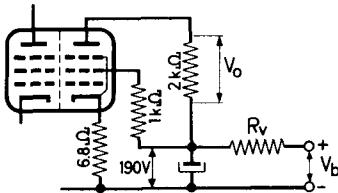
Anode voltage	V_a	170 V
Grid No. 2 voltage	V_{g_2}	170 V
Grid No. 1 voltage	V_{g_1}	-2.7 V
Anode current	I_a	30 mA
Grid No. 2 current	I_{g_2}	7 mA
Transconductance	S	22 mA/V
Internal resistance	R_i	33 k Ω
Amplification factor	$\mu_{g_2g_1}$	38 -

Amplifier pentode (F section)

Anode voltage	V_a	150 V
Grid No. 2 voltage	V_{g_2}	150 V
Grid No. 1 voltage	V_{g_1}	-2.1 V
Anode current	I_a	10 mA
Grid No. 2 current	I_{g_2}	3.0 mA
Transconductance	S	8.5 mA/V
Internal resistance	R_i	150 k Ω
Amplification factor	$\mu_{g_2g_1}$	38 -

OPERATING CHARACTERISTICS

Output pentode (L section) as video output tube



Supply voltage $V_b = 210 \quad 230 \text{ V}$

Series resistor $R_v = 390 \quad 820 \quad \Omega$

R_v should be added to avoid excessive dissipation

Input voltage (peak to peak)

$V_{ip-p} = 3.6 \text{ V}$

Output voltage (peak to peak)

$V_{op-p} = 100 \text{ V}$

Amplifier pentode (F section)

	Sync Separator	A. G. C. amplifier	I. F. amplifier
Supply voltage	V_b 200 to 250 V		
Anode resistor	R_a 50 kΩ		
Anode voltage	V_a	100 to 150 V	150 V
Grid No. 2 voltage	V_{g2} 75 V	60 V	150 V
Grid No. 1 resistor	R_{g1} 1 MΩ		
Grid No. 1 voltage	V_{g1} -2.7 V	-1.5 V	-2.1 V
Anode current	I_a 0.1 mA	1 mA	10 mA
Transconductance	S 0.2 mA/V	2.0 mA/V	8.5 mA/V

LIMITING VALUES (Design centre rating system)

Output pentode (L section)

Anode voltage	V_{a0}	max. 550 V
	V_a	max. 250 V
Anode dissipation	W_a	max. 5.1 W
Grid No.2 voltage	V_{g20}	max. 550 V
	V_{g2}	max. 250 V
Grid No.2 dissipation	W_{g2}	max. 2.5 W ¹⁾
Grid No.1 resistor	R_{g1}	max. 1 M Ω
Cathode current	I_k	max. 60 mA ²⁾
Cathode to heater voltage	V_{kf}	max. 200 V

Amplifier pentode (F section)

Anode voltage, peak ($I_a < 0.1$ mA)	V_{ap}	max. 600 V ³⁾
	V_{a0}	max. 550 V
	V_a	max. 250 V
Anode dissipation	W_a	max. 1.5 W
Grid No.2 voltage	V_{g20}	max. 550 V
	V_{g2}	max. 250 V
Grid No.2 dissipation	W_{g2}	max. 0.5 W
Grid No.1 resistor	R_{g1}	max. 1 M Ω
Cathode current	I_k	max. 15 mA
Cathode to heater voltage	V_{kf}	max. 200 V

¹⁾ During short periods $W_{g2} = \text{max. } 3.2 \text{ W}$

²⁾ During short periods $I_k = \text{max. } 85 \text{ mA}$

³⁾ Max. pulse duration 18% of a cycle, with a max. of 18 μsec .

