

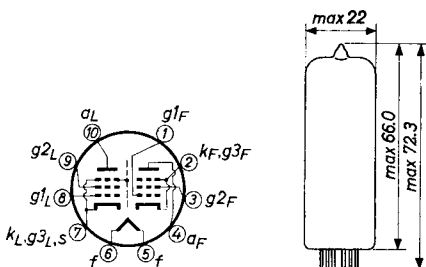
DOUBLE PENTODE FOR USE IN TELEVISION RECEIVERS

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

HEATING: indirect, series supply

Heater voltage $V_f = 17 \text{ V}$

Heater current $I_f = 0.3 \text{ A}$



Base : DECAL (Dimensions in mm)

CAPACITANCES Measured without external shield

	L section	F section
Anode to all other elements except grid No.1	$C_a = 7 \text{ pF}$	$= 11 \text{ pF}$
Grid No.1 to all other elements except anode	$C_{g_1} = 12 \text{ pF}$	$= 10 \text{ pF}$
Anode to grid No.1	$C_{ag_1} = 0.095 \text{ pF}$	$= 0.14 \text{ pF}$
Grid No.1 to heater	C_{g_1f}	$< 0.10 \text{ pF}$

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CAPACITANCES Measured without external shield (Continued)Between the two pentode sections

Anode L section to anode F section	C_{aLaF}	< 0.15 pF
Grid No.1 L section to grid No.1 F section	C_{g1Lg1F}	< 0.01 pF
Anode L section to grid No.1 F section	C_{aLg1F}	< 0.10 pF
Grid No.1 L section to anode F section	C_{g1LaF}	< 0.005 pF

TYPICAL CHARACTERISTICSOutput pentode (L section)

Anode voltage	V_a	= 170 V
Grid No.2 voltage	V_{g2}	= 170 V
Grid No.1 voltage	V_{g1}	= -2.6 V
Anode current	I_a	= 30 mA
Grid No.2 current	I_{g2}	= 6.5 mA
Mutual conductance	S	= 21 mA/V
Internal resistance	R_i	= 40 k Ω
Amplification factor of grid No.2 with respect to grid No.1	μ_{g2g1}	= 38

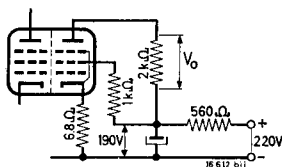
Amplifier pentode (F section)

Anode voltage	V_a	= 150 V
Grid No.2 voltage	V_{g2}	= 150 V
Grid No.1 voltage	V_{g1}	= -2.3 V
Anode current	I_a	= 10 mA
Grid No.2 current	I_{g2}	= 3.0 mA
Mutual conductance	S	= 8.5 mA/V
Internal resistance	R_i	= 160 k Ω
Amplification factor of grid No.2 with respect to grid No.1	μ_{g2g1}	= 35

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OPERATING CHARACTERISTICS

Output pentode (L section)



Input voltage (peak to peak) $V_{i\text{p-p}} = 3.6 \text{ V}$

Output voltage (peak to peak) $V_{o\text{p-p}} = 100 \text{ V}$

Amplifier pentode (F section)

	Sync Separator	A.G.C. amplifier	I.F. amplifier
$V_b =$	220 V		
$R_a =$	50 kΩ		
$V_a =$		150 V	150 V
$V_{g2} =$	75 V	60 V	150 V
$R_{g1} =$	1 MΩ		
$V_{g1} =$	-2.7 V	-1.3 V	-2.3 V
$I_a =$	0.1 mA	1 mA	10 mA
$S =$	0.25 mA/V	2.5 mA/V	8.5 mA/V

LIMITING VALUES (Design centre limits)Output pentode (L section)

Anode voltage in cold condition	V_{a0}	= max. 550 V
Anode voltage	V_a	= max. 250 V
Anode dissipation	W_a	= max. 5 W
Grid No.2 voltage in cold condition	V_{g20}	= max. 550 V
Grid No.2 voltage	V_{g2}	= max. 250 V
Grid No.2 dissipation	W_{g2}	= max. 2.5 W ¹⁾
Grid No.1 circuit resistance	R_{g1}	= max. 1 M Ω
Cathode current	I_k	= max. 60 mA ²⁾
Heater to cathode voltage	V_{kf}	= max. 200 V

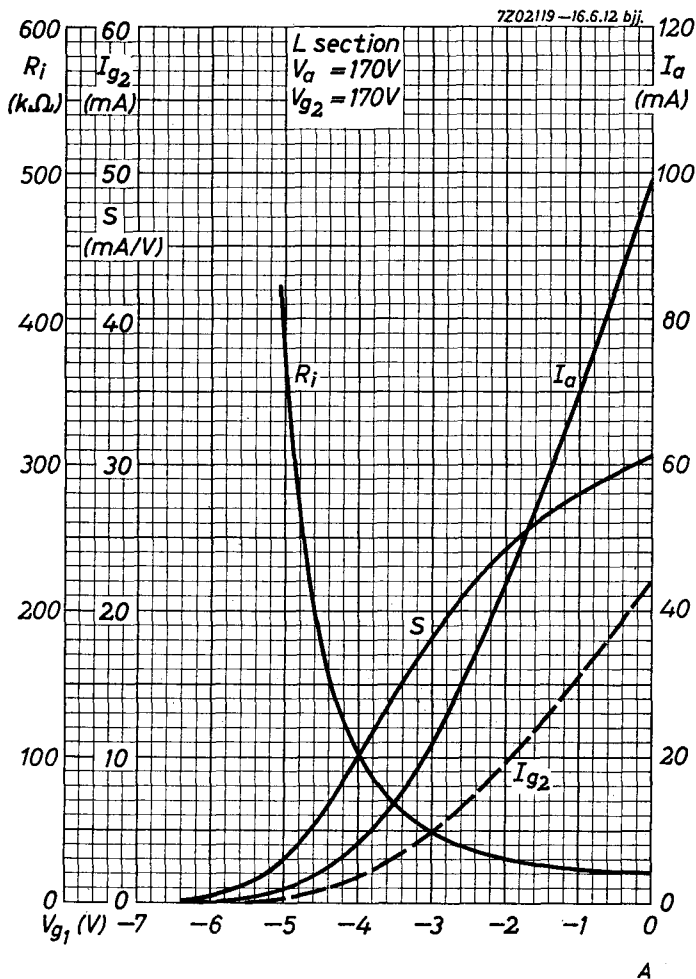
Amplifier pentode (F section)

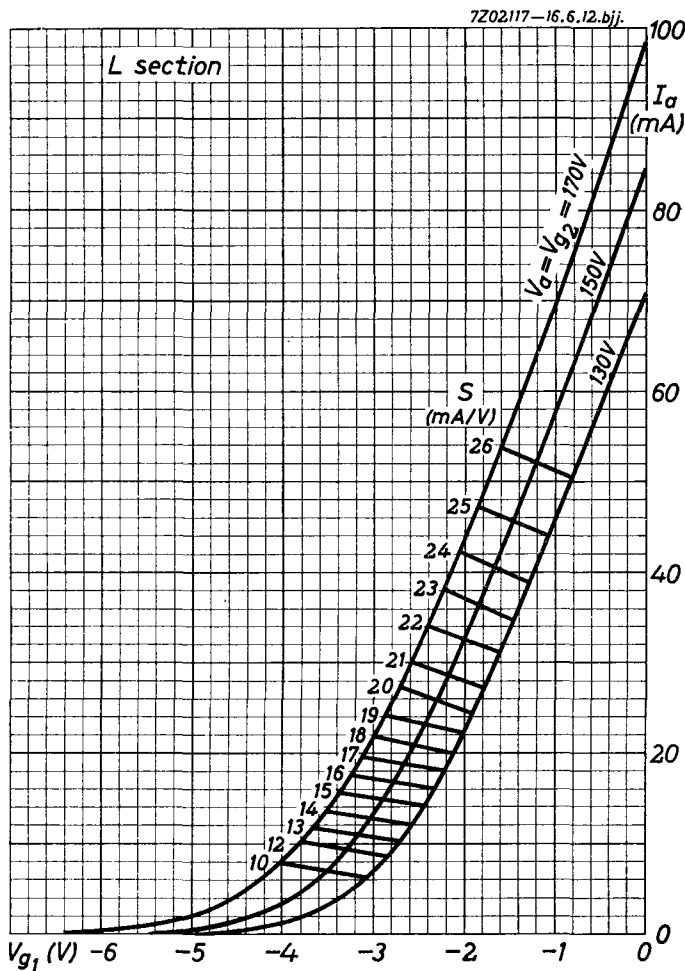
Anode voltage in cold condition	V_{a0}	= max. 550 V
Anode voltage	V_a	= max. 250 V
Anode dissipation	W_a	= max. 1.5 W
Grid No.2 voltage in cold condition	V_{g20}	= max. 550 V
Grid No.2 voltage	V_{g2}	= max. 250 V
Grid No.2 dissipation	W_{g2}	= max. 0.5 W
Grid No.1 circuit resistance	R_{g1}	= max. 1 M Ω
Cathode current	I_k	= max. 15 mA
Heater to cathode voltage	V_{kf}	= max. 200 V

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

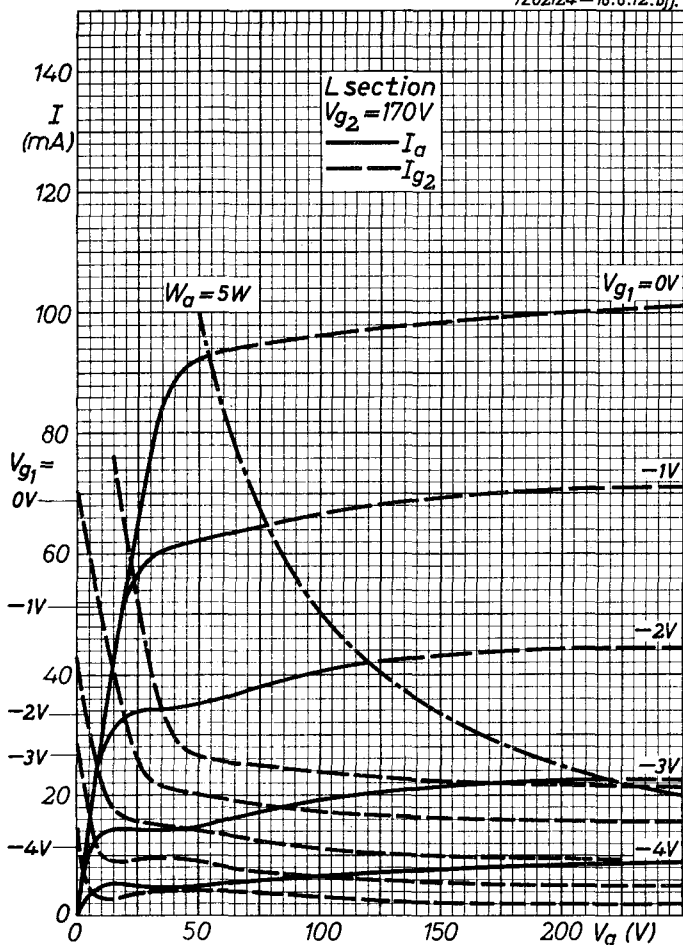
2) During short periods I_k = max. 85 mA

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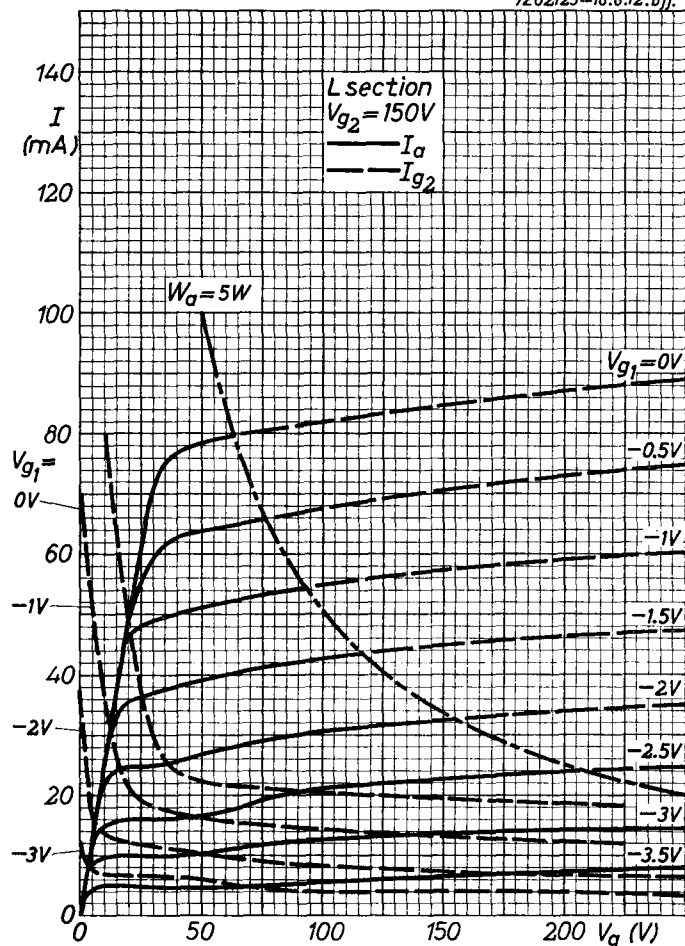




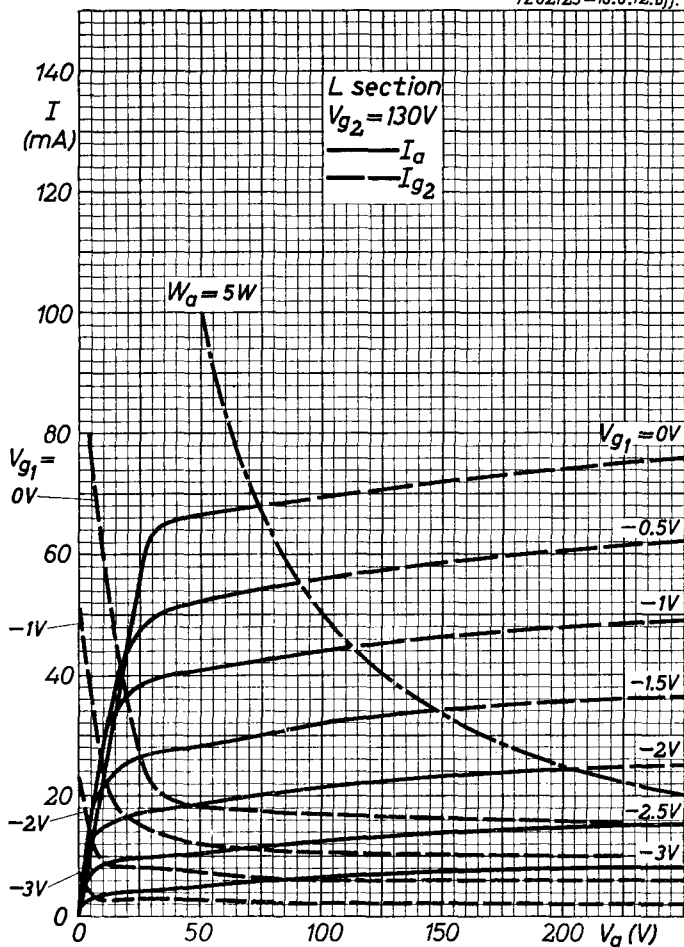
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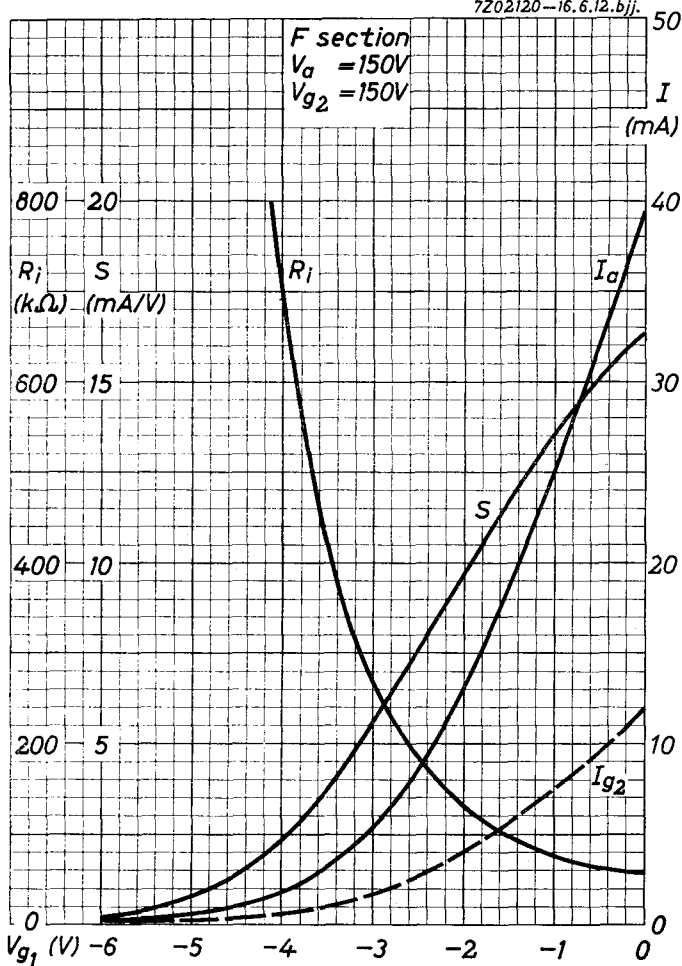


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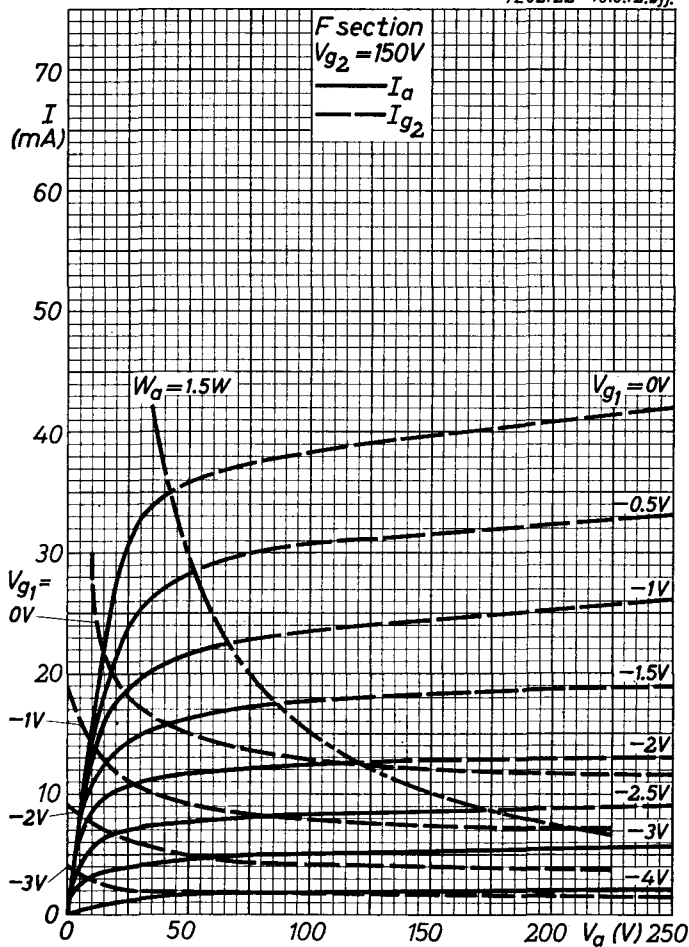


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F section
 $V_a = 150V$
 $V_{g2} = 150V$

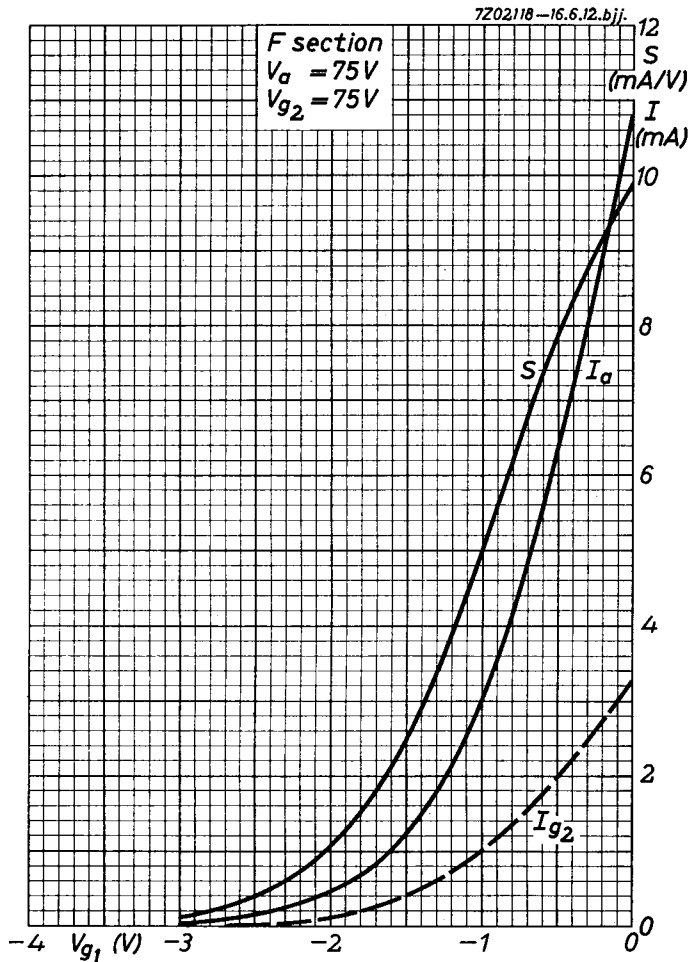


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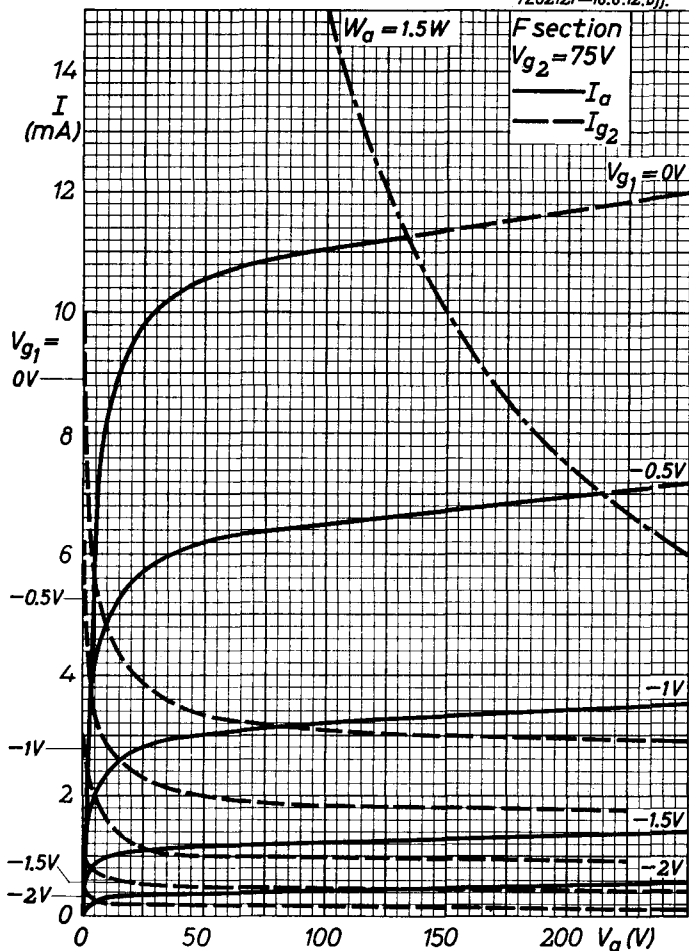


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F section
 $V_a = 75V$
 $V_{g2} = 75V$



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