

## LINE OUTPUT PENTODE

Pentode intended for use as line output tube in television receivers.

QUICK REFERENCE DATA		
Anode peak voltage	$V_{ap}$	max. 7 kV
Cathode current	$I_k$	max. 200 mA
Drive at $V_{ap} = 7$ kV		min. 120 V

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

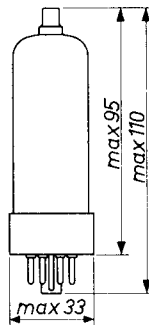
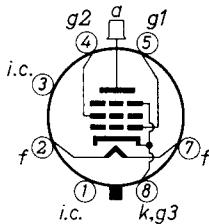
Heater current	$I_f$	300 mA
Heater voltage	$V_f$	25 V

### DIMENSIONS AND CONNECTIONS

Base: Octal

Top cap: Type 1

Dimensions in mm



### CAPACITANCES

Anode to all except grid No. 1

$$C_a(g_1) \quad 8 \text{ pF}$$

Grid No. 1 to all except anode

$$C_{g_1(a)} \quad 17.5 \text{ pF}$$

Anode to grid No. 1

$$C_{ag_1} \quad \text{max. } 1.1 \text{ pF}$$

**TYPICAL CHARACTERISTICS**

Anode voltage	$V_a$	100 V
Grid No.2 voltage	$V_{g2}$	100 V
Grid No.1 voltage	$V_{g1}$	-8.2 V
Anode current	$I_a$	100 mA
Grid No.2 current	$I_{g2}$	7 mA
Transconductance	S	14 mA/V
Amplification factor	$\mu_{g2g1}$	5.6
Internal resistance	$R_i$	5 k $\Omega$

**REMARKS**

On pages D to M curves are given for nominal new tubes. On designing a line output circuit it has to be taken into account that due to tube spread and deterioration during life the current may be reduced by 25%.

When the tube is operated below the knee of its  $I_a-V_a$  characteristic the screen grid series resistor must have a minimum value of 2.2 k $\Omega$  to avoid the occurrence of Barkhausen oscillations.

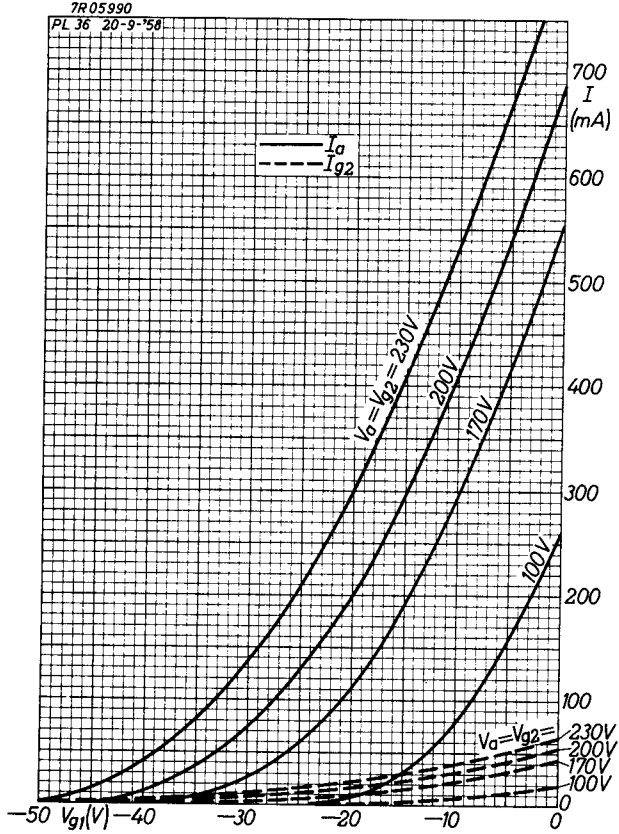
The min. drive at  $V_{ap} = 5$  kV is 100 V  
 and at  $V_{ap} = 7$  kV 120 V

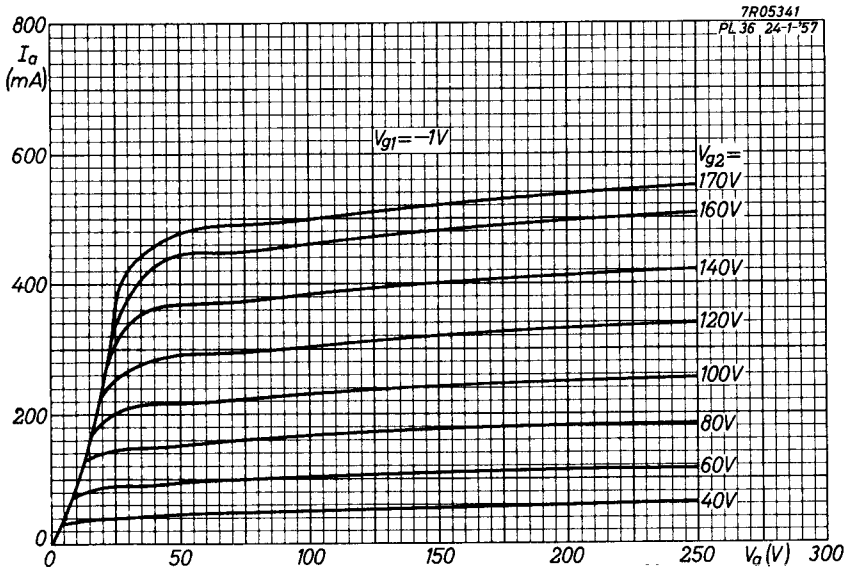
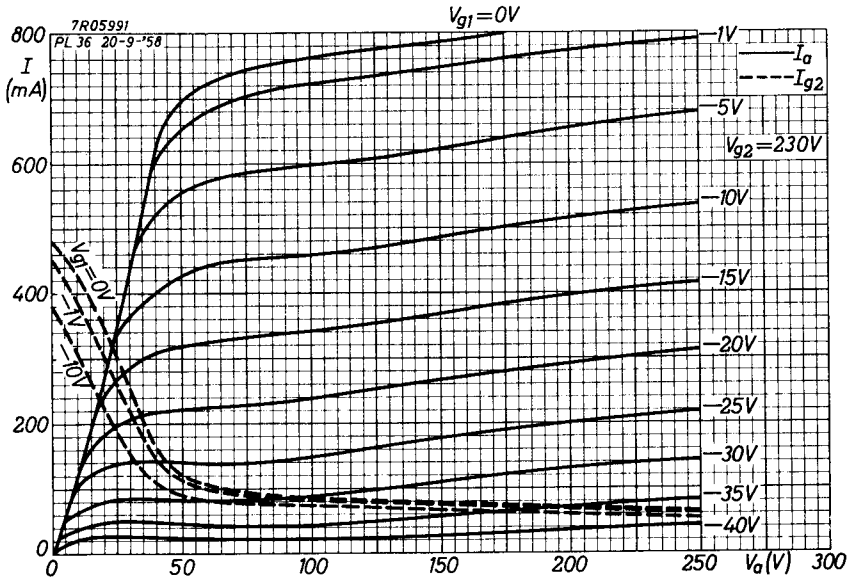
**LIMITING VALUES** (Design centre rating system)

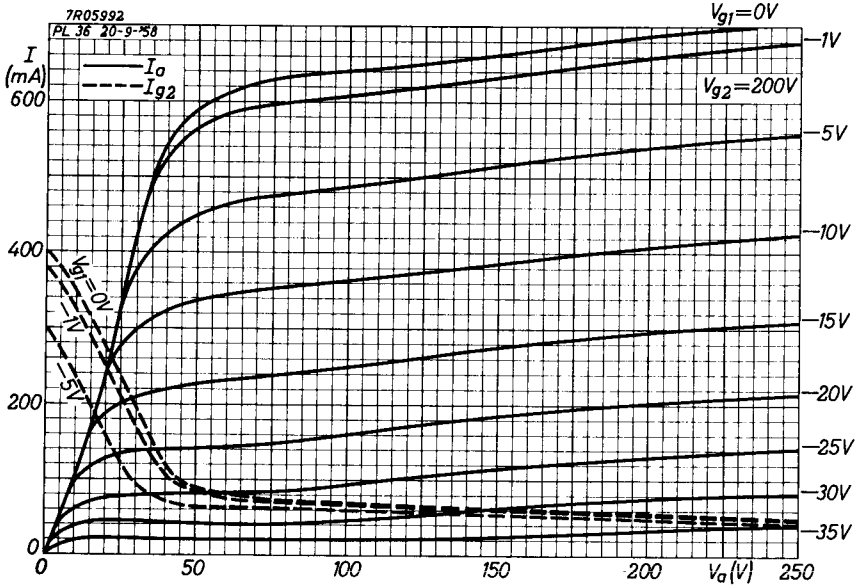
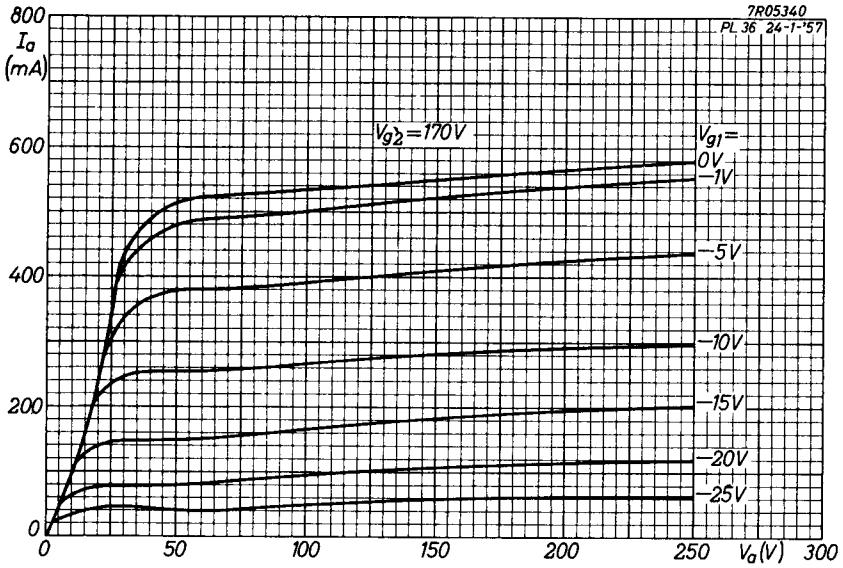
Anode voltage	$V_{a0}$	max. 550 V
	$V_a$	max. 250 V
Anode peak voltage		
positive	$V_{ap}$	max. 7 kV <sup>1)</sup>
negative	$-V_{ap}$	max. 1.5 kV <sup>1)</sup>
Grid No.2 voltage	$V_{g20}$	max. 550 V
	$V_{g2}$	max. 250 V
Grid No.1 peak voltage	$V_{g1p}$	max. 1 kV <sup>1)</sup>
Anode dissipation	$W_a$	} See page 7
Grid No.2 dissipation	$W_{g2}$	
Anode + grid No.2 dissipation	$W_a+W_{g2}$	
Cathode current	$I_k$	max. 200 mA
Grid No.1 resistor	$R_{g1}$	max. 0.5 M $\Omega$ <sup>2)</sup>
Cathode to heater voltage		
A. C. value	$V_{kf}$	max. 250 $V_{RMS}$
D. C. value, k pos.	$V_{kf}$	max. 250 V
D. C. value, k neg.	$V_{kf}$	max. 200 V

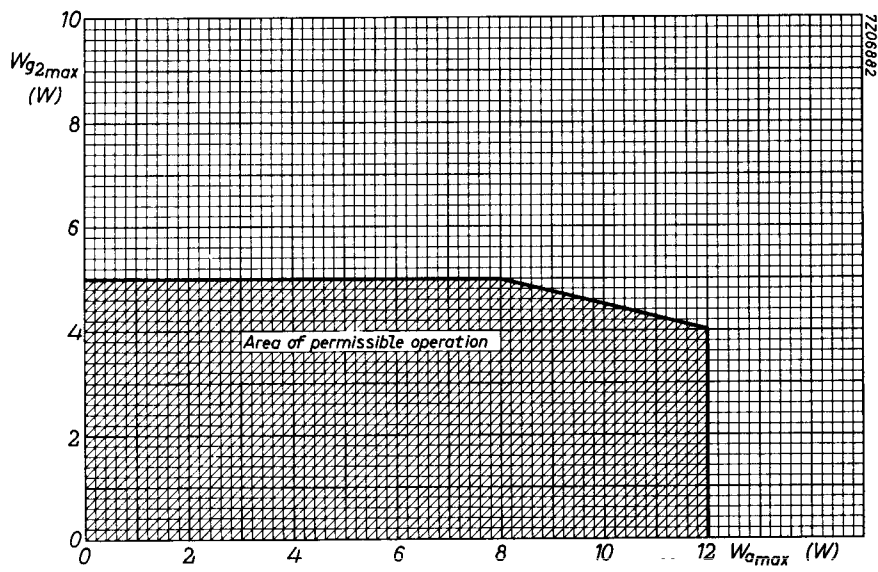
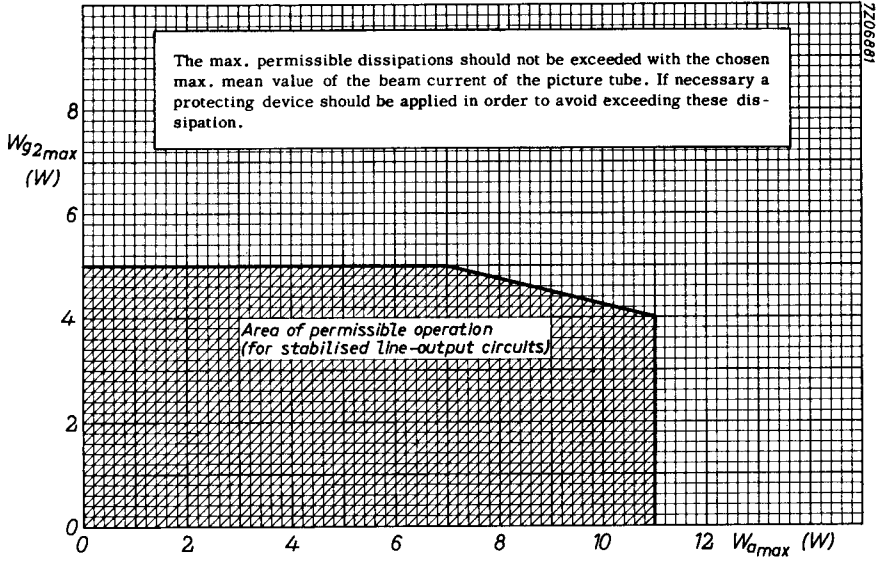
<sup>1)</sup> Valid for application in line output circuits where the max. pulse duration is 22% of a cycle with a max. of 18  $\mu s$ .

<sup>2)</sup>  $R_{g1}$  = max. 2.2 M $\Omega$  for line output application only.









# PHILIPS

Data handbook



Electronic  
components  
and materials

## PL36

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