

OUTPUT PENTODE

PL84

Output pentode rated for 12W anode dissipation with 300mA heater for use as a frame output valve in television receivers.

HEATER

I_h	300	mA
V_h	15	V

CAPACITANCES

C_{in}	11.8	pF
C_{out}	6.0	pF
C_{a-g1}	< 0.6	pF
C_{g1-h}	< 0.25	pF

CHARACTERISTICS

V_a	170	200	V
V_{g2}	170	200	V
I_a	70	60	mA
I_{g2}	3.5	3.0	mA
V_{g1}	-12.5	-17.3	V
g_m	11	8.8	mA/V
r_a	26	28	kΩ
μ_{g1-g2}	8.0	8.0	

OPERATION AS FRAME OUTPUT VALVE

See nomogram on page C1 and notes on page D2.

LIMITING VALUES

$V_{a(b)} \text{ max.}$	550	V
$V_a \text{ max.}$	250	V
*+ $V_{a(pk)} \text{ max.}$	2.0	kV
- $V_{a(pk)} \text{ max.}$	500	V
$p_a \text{ max.}$	12	W
$V_{g2(b)} \text{ max.}$	550	V
$V_{g2} \text{ max.}$	200	V
$p_{g2} \text{ max.}$	1.75	W
$I_k \text{ max.}$	100	mA
$R_{g1-k} \text{ max. (fixed bias)}$	500	kΩ
$R_{g1-k} \text{ max. (cathode bias)}$	1.0	MΩ
$R_{g1-k} \text{ max. (frame output)}$	3.3	MΩ
$R_{h-k} \text{ max.}$	200	V
$R_{h-k} \text{ max.}$	20	kΩ

*Max. pulse duration 4% of one cycle with a maximum of 800μs.

PEAK ANODE CURRENT NOMOGRAM

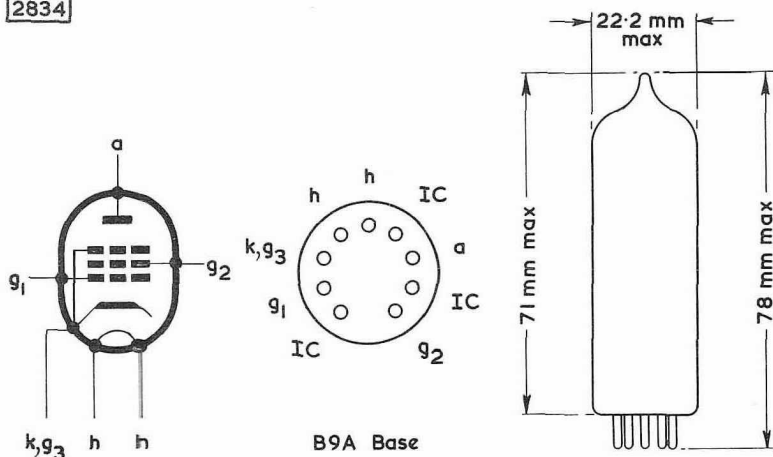
The nomogram shown on the following page gives directly the values of peak anode current and corresponding values of anode voltage at end of scan for various values of screen-grid voltage.

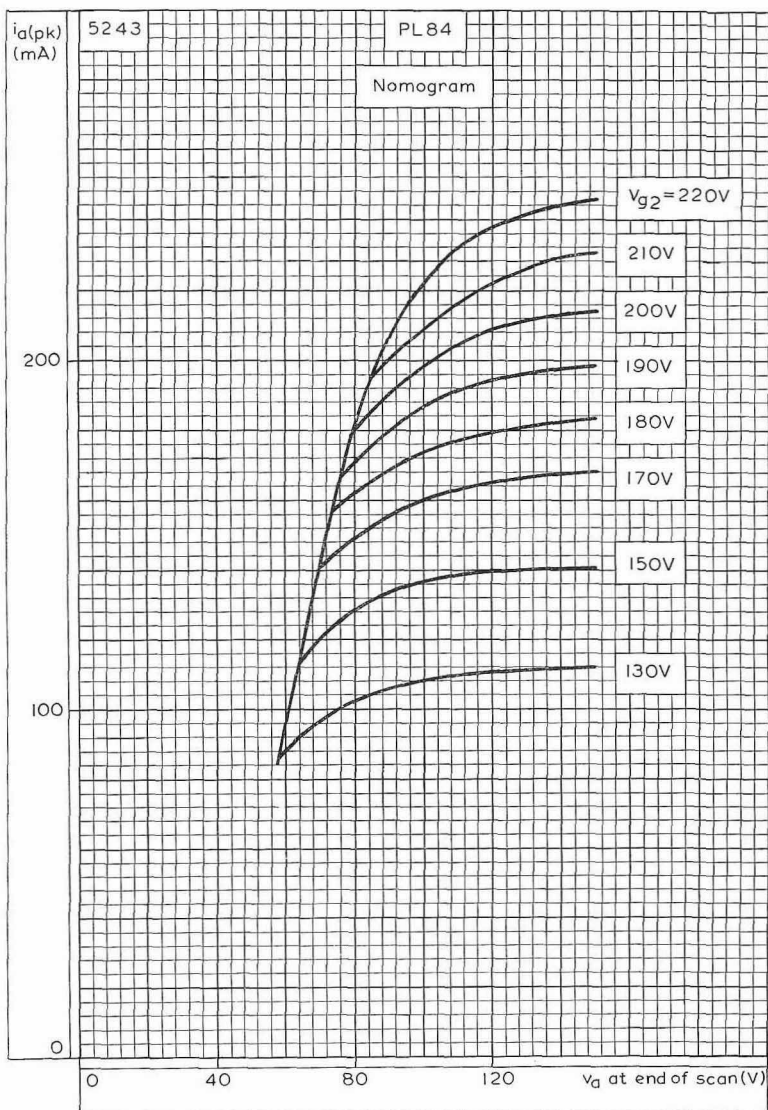
No indication of anode and screen-grid dissipation limits is given in the nomogram: these must be checked independently.

Example

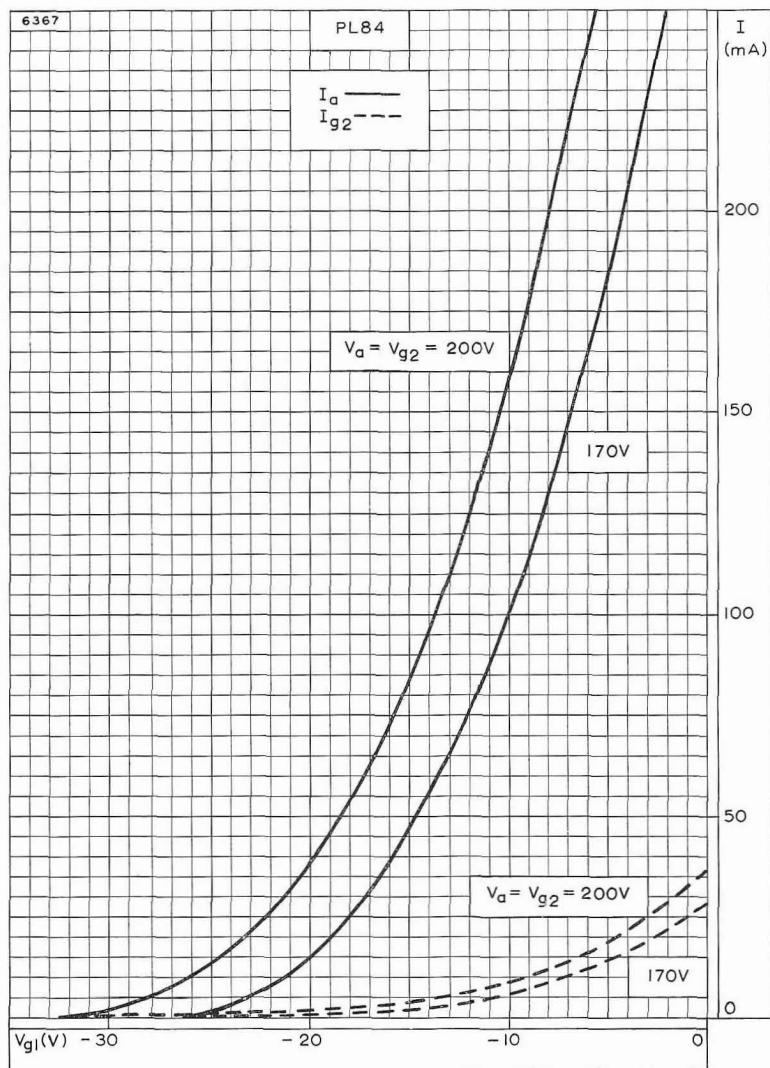
Suppose the screen-grid voltage is 170V. From the nomogram, the optimum working conditions at $V_{g2} = 170V$ are $i_{a(pk)} = 140mA$, and v_a at end of scan = 70V. If the designer requires a peak current of 160mA, the corresponding v_a at end of scan is 100V.

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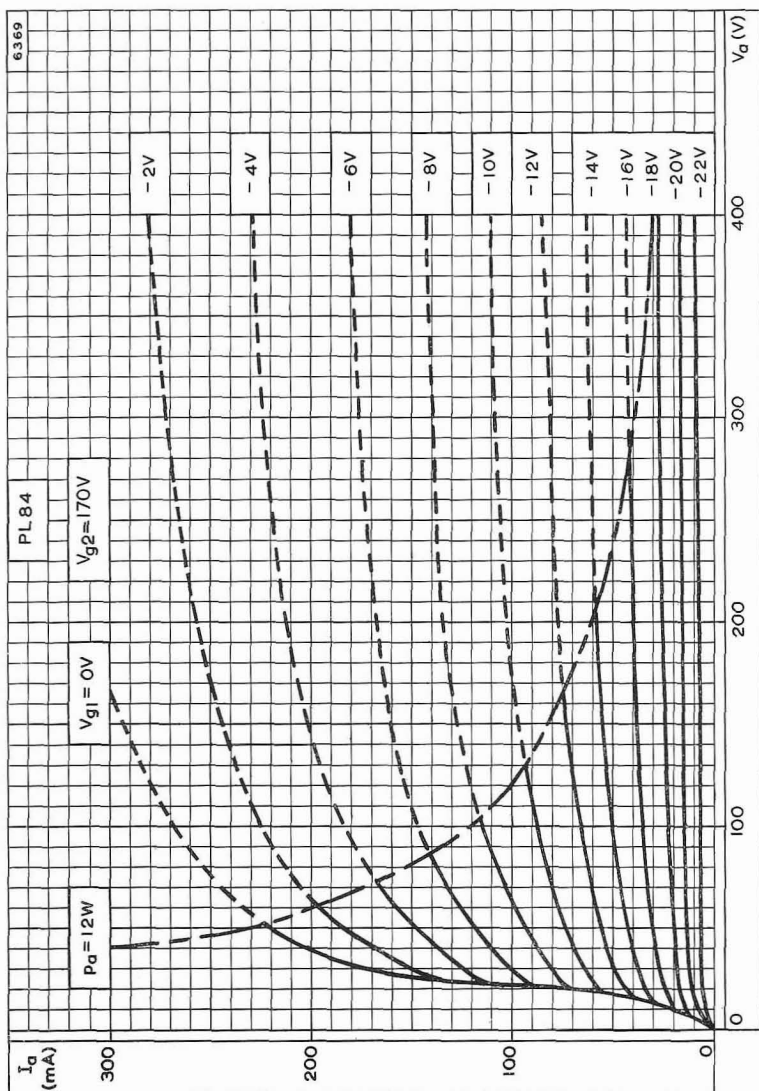




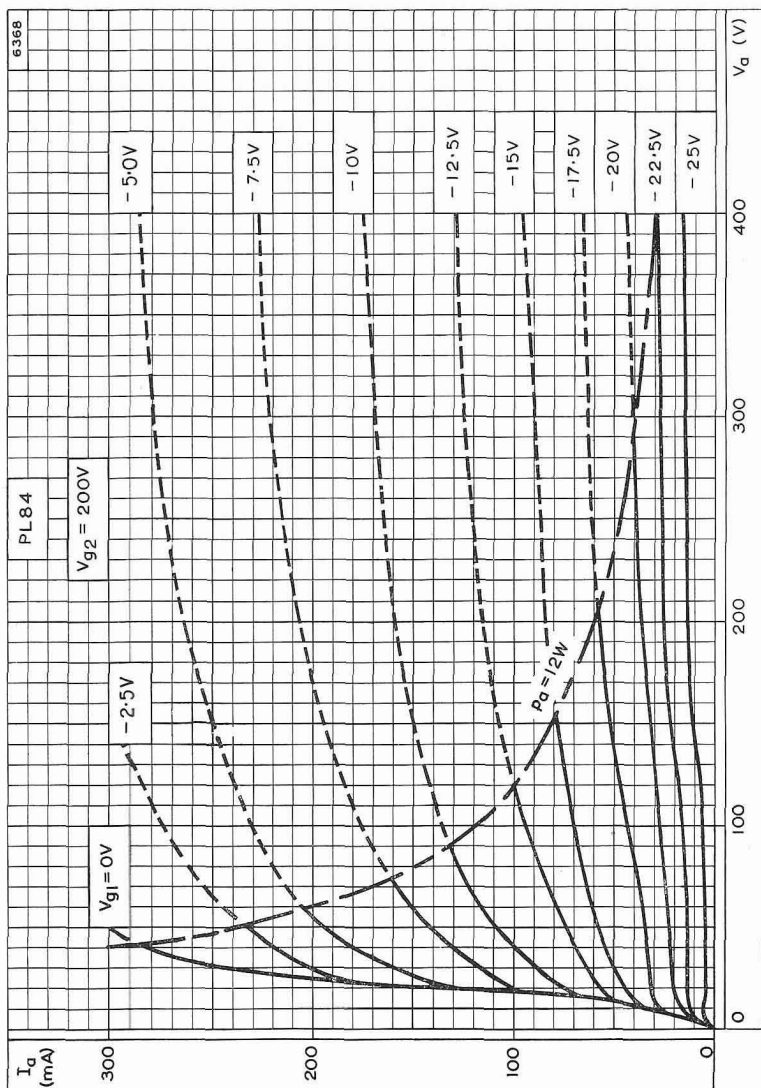
PEAK ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE AT THE END OF SCAN



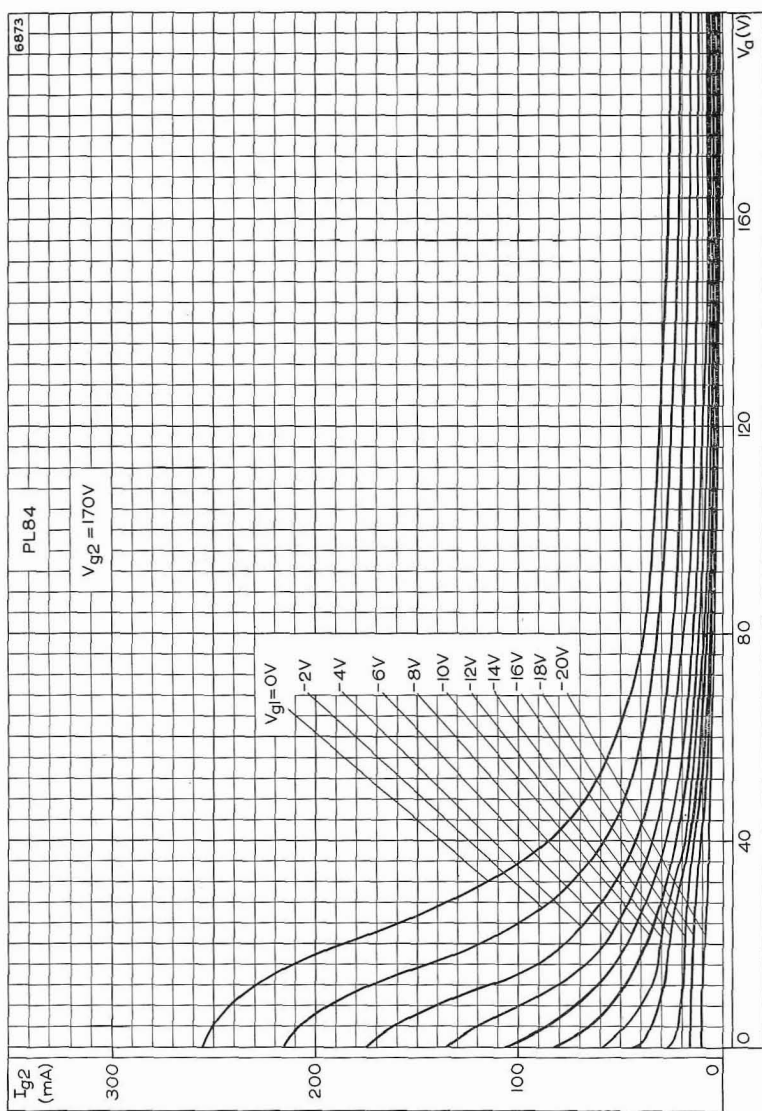
ANODE AND SCREEN-GRID CURRENTS PLOTTED AGAINST CONTROL-GRID VOLTAGE FOR VARIOUS ANODE AND SCREEN-GRID VOLTAGES



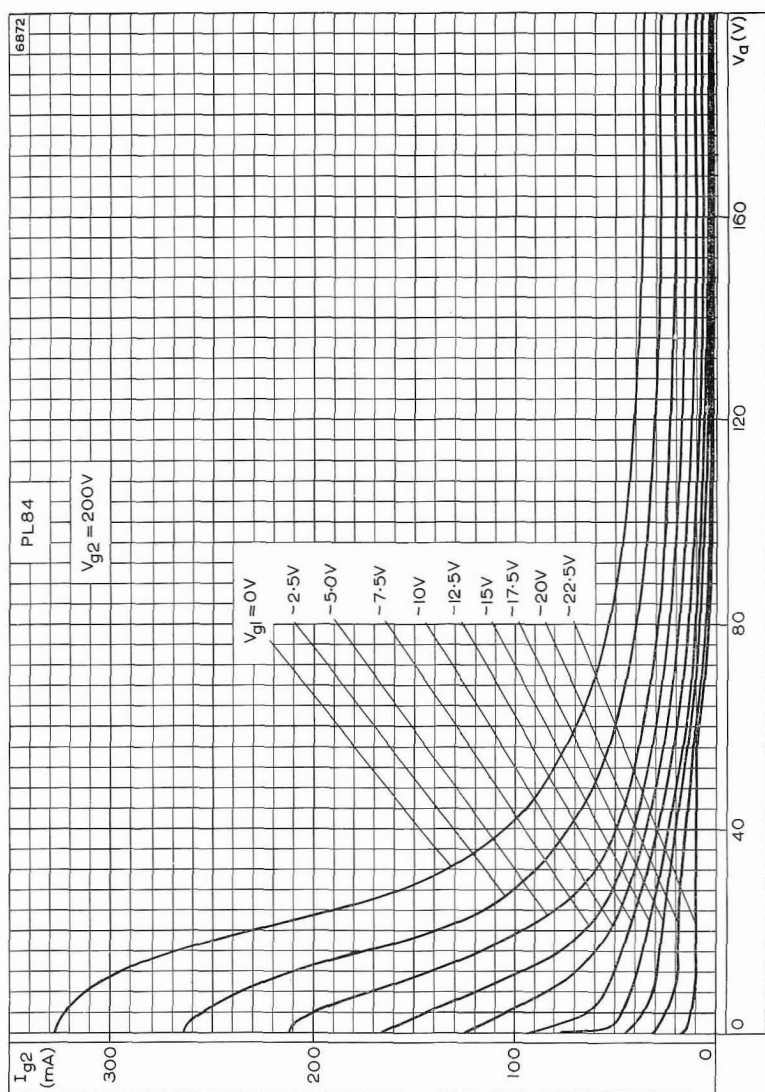
ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. $V_{g2} = 170V$



ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. $V_{g2} = 200V$



SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. $V_{g2} = 170V$



SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. $V_{g2} = 200V$