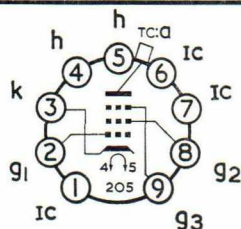


LINE OUTPUT PENTODE



B9A Base, CT1 Cap

GENERAL

This output pentode is primarily intended for use in the line timebase of AC/DC portable television receivers.

Heater Current	I_h	0.3	A
Heater Voltage	V_h	21.5	V

DESIGN CENTRE RATINGS

Maximum Anode Dissipation	$P_a(\max)$	7.5	W
For $P_{g2} \leq 2.0W$		5.0	W
For $P_{g2} = 4.5W$			
Maximum Anode and Screen Grid Dissipation	$P_{(a+g2)}(\max)$	See Rating Chart	
Maximum Screen Grid Dissipation	$P_{g2}(\max)$	4.5	W
For $P_a \leq 5.0W$		2.0	W
For $P_a = 7.5W$			
Maximum Anode Supply Voltage	$V_{a(b)}(\max)$	650	V
Maximum Anode Voltage	$V_a(\max)$	250	V
Maximum Peak Anode Voltage	$V_a(pk)(\max)$	7.0*	kV
Maximum Screen Grid Supply Voltage	$V_{g2}(b)(\max)$	550	V
Maximum Screen Grid Voltage	$V_{g2}(\max)$	250	V
Maximum Peak Control Grid Voltage	$V_{g1}(pk)(\max)$	1.0	kV
Maximum Heater to Cathode Voltage	$V_{h-k}(\max)$	200	V
Maximum Cathode Current	$I_k(\max)$	180	mA
Maximum Control Grid to Cathode Resistance	$R_{g1-k}(\max)$	500†	kΩ
Maximum Heater to Cathode Resistance	$R_{h-k}(\max)$	20	kΩ
Maximum Bulb Temperature	$T_{bulb}(\max)$	240	°C

* Maximum pulse duration 22 per cent of one cycle, with a maximum of 18 μs .

† In line timebase applications $R_{g1-k}(\max)$ may be 2.2 MΩ.

INTER-ELECTRODE CAPACITANCES§

Input	C_{in}	14	pF
Output	C_{out}	6.0	pF
Anode to Grid 1	C_{a-g1}	<0.8	pF
Grid 1 to Heater	C_{g1-h}	<0.2	pF
Anode to Cathode	C_{a-k}	<0.1	pF

§ Measured without an external shield.

CHARACTERISTICS

Anode Voltage	V_a	170	V
Screen Grid Voltage	V_{g2}	170	V
Control Grid Voltage	V_{g1}	-24.5	V
Anode Current	I_a	45	mA
Screen Grid Current	I_{g2}	2.2	mA
Mutual Conductance	g_m	6.0	mA/V
Inner Amplification Factor	μ_{g1-g2}	4.9	
Valve Anode Resistance ($\delta V_a / \delta I_a$)	r_a	11.5	kΩ

LINE OUTPUT VALVE CIRCUIT DESIGN

It is recommended that the valve be operated so that the anode potential at the end of the scan is above the knee of the anode characteristic. An effective feedback stabilising circuit should be employed.

