

FERRANTI

DOUBLE DIODE PENTODE

An indirectly heated double diode variable-mu pentode designed for use as detector, A.V.C. diode and R.F., I.F., or A.F. Amplifier.

PHYSICAL DETAILS.

Base	...	...	B9A—All Glass.
Max. Overall Length	...	...	67.5 mm. ($2\frac{3}{4}$ in.).
Max. Seated Height	...	...	60.5 mm. ($2\frac{3}{8}$ in.).
Max. Diameter	...	...	22.2 mm. ($\frac{7}{8}$ in.).
Mounting Position	...	...	Any.

BASE CONNECTIONS.

Pin 1—Screen Grid (g_2).	Pin 5—Heater.
Pin 2—Control Grid (g_1).	Pin 6—Pentode Anode.
Pin 3—Cathode.	Pin 7—Diode Anode 1.
Pin 4—Heater.	Pin 8—Diode Anode 2.
Pin 9—Suppressor Grid (g_3).	

HEATER.

Heater Voltage	...	...	6.3 volts.
Heater Current	...	...	0.3 amp.

RATINGS.

Max. H.T. Supply Voltage	...	550 volts.
Max. Anode Voltage	...	300 volts.
Max. Screen Voltage ($I_a < 2.5$ mA)	...	300 volts.
Max. Screen Voltage ($I_a = 5$ mA)	...	125 volts.
Max. Anode Dissipation	...	1.5 watts.
Max. Screen Dissipation	...	0.3 watts.
Max. Control Grid Voltage ($I_{g1} = +0.3 \mu A$)	...	-1.3 volts.
Max. Cathode Current	...	10 mA.
Max. V_{h-k}	...	100 volts.
*Max. R_{g1-k}	...	3 M Ω
Max. R_{h-k}	...	20 k Ω
Peak Diode Anode Voltage	...	200 volts.
Max. Diode Anode Current	...	0.8 mA.

TYPICAL OPERATION.

PENTODE SECTION.

Anode Voltage	...	250 volts.
Screen Grid Resistor (R_{g2})	...	95 k Ω
Suppressor Grid Voltage	...	0 volts.
Control Grid Voltage	...	-2 volts.
Anode Current	...	5 mA.
Screen Current	...	1.75 mA.
Mutual Conductance	...	2.2 mA/V.
Anode Impedance	...	1.5 M Ω
Inner μ (μ_{g1-g2})	...	18
V_{g1} for $g_m = 0.022$ mA/V.	...	-41.5 volts.

Resistance Coupled Amplifier.

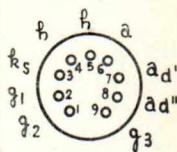
Supply Voltage	...	250	250	250	volts.
Anode Load Resistor	...	220	220	100	k Ω
Screen Feed Resistor	...	820	100	470	k Ω
Auto Bias Resistor	...	1.8	0	0	k Ω
Grid Resistor	...	0	10	10	M Ω
Peak Output Voltage	...	19	19	19	volts.
Stage Gain	...	110	160	110	
Grid Resistor for following Valve	...	680	680	330	k Ω
Total Distortion	...	5	5	5	%

CAPACITANCES.

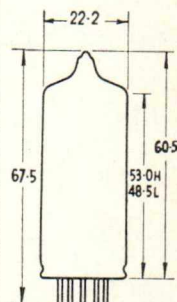
C_{in}	...	...	4.0 pF.
C_{out}	...	...	4.9 pF.
C_{a-g}	...	...	<0.0025 pF.
$C_{ad-ad'}$	...	...	<0.35 pF.
C_{ad-k}	...	...	2.2 pF.
$C_{ad-k'}$	...	...	2.35 pF.
C_{g1-h}	...	...	<0.07 pF.
$C_{ad'-g1} = C_{ad''-g1}$	...	...	<0.001 pF.

*If grid current biasing is employed R_{g1-k} may be increased up to 22 M Ω

EBF80



Base
Connections
Underside View
of Base



All dimensions
shown are in
millimetres
(max.).



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