

Ferranti

DOUBLE DIODE PENTODE

An indirectly heated double diode variable-mu pentode. The pentode is designed for use as an R.F. or I.F. Amplifier, and the diodes for a.m. detection.

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.

Pentode Section.

Max. H.T. Supply Voltage	...	...	550 volts
Max. Anode Voltage	...	...	300 volts
Max. Screen Voltage ($I_a < 4$ mA.)	...	...	300 volts
Max. Screen Voltage ($I_a > 8$ mA.)	...	...	125 volts
Max. Anode Dissipation	...	...	2.25 watts
Max. Screen Grid Dissipation	...	...	0.45 watts
Max. Control Grid Voltage ($I_{g1} = +0.3 \mu A.$)	...	...	-1.3 volts
Max. Cathode Current	...	...	16.5 mA
Max. V_{h-k}	...	...	100 volts
Max. R_{h-k}	...	...	20 k Ω
*Max. R_{g1-k}	...	...	3 M Ω
Max. R_{g3-k}	...	...	10 k Ω

Diode Sections.

Peak Diode Anode Voltage	...	...	200 volts
Max. Mean Diode Anode Current	...	...	0.8 mA
Max. Peak Diode Anode Current	...	...	5.0 mA

TYPICAL OPERATION. As R.F. or I.F. Amplifier.

$V_a = V_b$	...	200	250	200	250	volts
V_{g3}	...	0	0	0	0	volts
R_{g2}	...	30	56	47	82	k Ω
R_k	...	105	170	—	—	ohms
V_{g1}	...	-1.5	-2.0	0.5†	0.5†	volts
I_a	...	11	9.0	9.5	8.0	mA
I_{g2}	...	3.3	2.7	2.8	2.2	mA
g_m	...	4.5	3.8	5.0	3.8	mA/V
r_a	...	0.6	1.0	0.6	0.8	M Ω
R_{eq}	...	3.5	4.0	2.5	2.3	k Ω
g_m ($V_{g1} = -20$)	...	120	200	115	180	$\mu A/V$

CAPACITANCES.

Pentode Section.

C_{in}	...	5.0 pF
C_{out}	...	5.2 pF
C_{a-g1}	...	<0.0025 pF
C_{g1-h}	...	0.05 pF

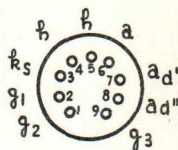
Diode Sections.

$C_{ad'-k} = C_{ad''-k}$	...	2.5 pF
$C_{ad'-ad''}$	...	<0.25 pF
$C_{ad'-h}$	...	<0.015 pF
$C_{ad''-h}$	...	<0.003 pF
$C_{ad'-g1}$	...	<0.0025 pF
$C_{ad''-g1}$	...	<0.001 pF
$C_{ad'-ap}$	...	<0.15 pF
$C_{ad''-ap}$	...	<0.025 pF

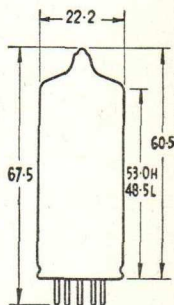
*If grid current biasing is employed R_{g1-k} may be increased up to 22 M Ω

†This bias voltage is produced by the grid current through the grid resistor and the diode current. If attenuation occurs due to the high resistance of the grid cathode path, the negative bias should be increased to approx -1.5 volts for $V_a = 200$ or to -2 volts if $V_a = 250$.

EBF89



Base Connections
Underside View
of Base



All dimensions
shown are in
millimetres
(max.).

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