

FERRANTI

R.F. PENTODE

A directly heated R.F. Pentode, designed for use as an I.F. Amplifier Frequency Changer or self-oscillating mixer in f.m./a.m. Battery Operated Receivers. The filament is suitable only for d.c. operation.

PHYSICAL DETAILS.

Base	...	B7G—All Glass.
Max. Overall Length	...	54.5 mm. ($2\frac{1}{2}$ in.).
Max. Seated Height	...	47.5 mm. ($1\frac{3}{4}$ in.).
Max. Diameter	...	19.0 mm. ($\frac{3}{4}$ in.).
Mounting Position	...	Any.

BASE CONNECTIONS.

Pin 1—Filament (–), and Internal Shield.	Pin 4—Suppressor Grid (g_3).
Pin 2—Anode.	Pin 5—Filament (+), and Internal Shield.
Pin 3—Screen Grid (g_2).	Pin 6—Control Grid (g_1).
Pin 7—Filament (+).	

FILAMENT*

Filament Voltage	...	1.4 volts.
Filament Current	...	25 mA.

RATINGS.

Max. H.T. Supply Voltage	...	120 volts.
Max. Anode Voltage	...	120 volts.
Max. Screen Voltage	...	90 volts.
Max. Anode Dissipation	...	0.25 watts.
Max. Screen Dissipation	...	0.15 watts.
Max. Cathode Current	...	2.5 mA.
Max. R_{g1-f}	...	3.0 M Ω
Max. R_{g3-f}	...	1.5 M Ω
Max. V_{g1} ($I_{g1} = +0.3 \mu A$)	...	0 volts.

CHARACTERISTICS.

†Anode Voltage	...	64	64	85	volts.
Oscillator Voltage	...	0	0	0	volts.
Screen Feed Resistor	...	1.5	4.7	33	k Ω
Screen Voltage	...	63	61	62	volts.
Grid Bias Voltage	...	0	0	0	volts.
Anode Current	...	1.7	1.6	1.7	mA.
Screen Current	...	780	725	700	μA .
Mutual Conductance	...	880	870	940	900 $\mu A/volt$
Anode Impedance	...	250	270	450	525 k Ω
Inner μ (μ_{g1-g2})	...	20	20	20	20
V_{g1} ($g_m = 10 \mu A/volt$)	...	–3.8	–3.8	–5.0	–5.0 volts.

TYPICAL OPERATION.

As Frequency Changer with oscillator voltage on g_3 .

†Anode Voltage	...	64	85	volts.
Screen Feed Resistor	...	4.7	47	k Ω
Screen Voltage	...	58	47	volts.
Oscillator Feed Resistor	...	300	300	k Ω
Grid Bias Voltage	...	0	0	volts.
Anode Current	...	0.67	0.54	mA.
Screen Current	...	1.25	0.8	mA.
Oscillator Voltage	...	12	12	volts (r.m.s.).
Conversion Conductance	...	280	265	$\mu A/V$.
Anode Impedance	...	300	500	k Ω
V_{g1} ($g_m = 10 \mu A/volt$)	...	–3.5	–4.6	volts.

As Self-oscillating Mixer (triode connection);

†Anode Voltage	...	64	85	volts.
Anode Current	...	1.3	1.9	mA.
R_{g-f}	...	1.0	1.0	M Ω
Control Grid Current	...	3.1	4.4	μA .
Oscillator Voltage	...	3.0	4.0	volts.
Conversion Conductance	...	465	500	$\mu A/volt$.
Anode Impedance	...	29	26	k Ω

CAPACITANCES.

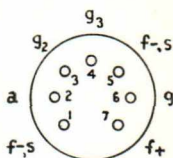
	Pentode connection	Triode connection
C_{in}	...	3.7 pF.
C_{out}	...	1.1 pF.
C_{a-g1}	...	7.5 pF.
$C_{in(g2)}$	...	<0.01 pF.
C_{g1-g3}	...	5.2 pF.
C_{g1-g2}	...	<0.1 pF.
		2.5 pF.

*Series filament chain operation not recommended.

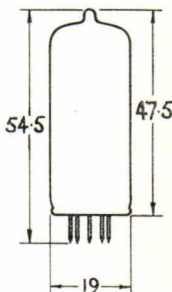
†Based on supply voltages of 67.5 volts, and 90 volts decreased by the negative bias for the output valve.

§ g_2 and g_3 connected to anode.

DF97



Base
Connections
Underside View
of Base



All dimensions
shown are in
millimetres
(max.).



DF97

