

FERRANTI HEPTODE

A directly heated Heptode, designed for use as a Frequency Changer in Battery Operated Receivers, suitable for A.V.C. It has a high conversion conductance coupled with a low oscillator drive voltage. The filament is suitable only for DC. operation.

PHYSICAL DETAILS.

Base	...	...	B7G.
Max. Overall Length	...	...	54.5 mm. (2 $\frac{1}{2}$ in.).
Max. Seated Height	...	...	47.5 mm. (1 $\frac{7}{8}$ in.).
Max. Diameter	...	...	19 mm. ($\frac{3}{4}$ in.).

Mounting position—Any.

BASE CONNECTIONS.

Pin 1—Filament (-).	Pin 5—Screen Grid (g_4).
Pin 2—Anode.	Pin 6—Control Grid (g_3).
Pin 3—Oscillator Anode (g_2).	Pin 7—Filament (+), and
Pin 4—Oscillator Grid (g_1).	Suppressor Grid (g_5).

FILAMENT.

Filament Voltage	...	...	1.4 volts.
Filament Current	...	...	50 mA.

RATINGS.

Max. H.T. Supply Voltage	...	120 volts.
Max. Anode Voltage	...	90 volts.
Max. Oscillator Anode Voltage	...	60 volts.
Max. Screen Voltage	...	90 volts.
Max. Cathode Current	...	4.0 mA.
Max. R_{g3-f}	...	3 M Ω
Max. R_{g1-f}	...	35 k Ω

TYPICAL OPERATION AND CHARACTERISTICS.

* Anode Voltage = V_b	...	85 volts.
Control Grid Voltage	...	0 volts.
Screen Feed Resistor	...	180 k Ω
Oscillator Anode Feed Resistor	...	33 k Ω
Oscillator Grid Resistor	...	27 k Ω
Screen Voltage	...	60 volts. (approx.).
Oscillator Anode Voltage	...	30 volts (approx.).
Oscillator Grid Voltage	...	4 volts (r.m.s.).
Total Cathode Current	...	2.55 mA.
Anode Current	...	0.7 mA.
Screen Current	...	0.15 mA.
Oscillator Anode Current	...	1.6 mA.
† Oscillator Grid Current	...	100 μ A.
Conversion Conductance (g_c)	...	325 μ A/volt.
Anode Impedance	...	0.65 M Ω
Control Grid Voltage	...	(for 100 : 1 reduction in g_c) -6 volts.

OSCILLATOR SECTION‡

* Anode Voltage = V_b	...	85 volts.
Screen Voltage	...	64 volts.
Control Grid Voltage	...	0 volts.
Oscillator Anode Voltage	...	30 volts.
Oscillator Anode Current	...	2.5 mA.
Mutual Conductance (g_{1-g_2})	...	0.9 mA/V.
Inner M μ (μ_{g1-g_2})	...	7.5

CAPACITANCES.

C_{g1-all}	...	4 pF.	C_{a-g_3}	...	<0.4 pF.
C_{g2-all}	...	5 pF.	C_{g1-g_2}	...	3.0 pF.
C_{g3-all}	...	7.5 pF.	C_{g1-g_3}	...	<0.2 pF.
C_{a-all}	...	8.5 pF.	C_{g2-g_3}	...	1.6 pF.

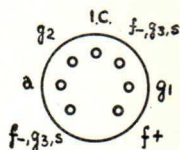
*Based on supply voltage of 90V decreased by the negative bias for the output valve.

†Optimum value. In a typical circuit g_1 will be between 50 μ A and 250 μ A.

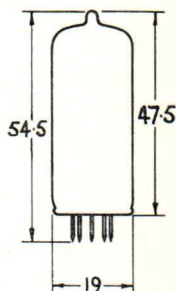
‡With oscillator Grid (g_1) connected to filament (+).

DK92

IAC6



Base
Connections
Underside View
of Base



All dimensions
shown are in
millimetres (max.).



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