



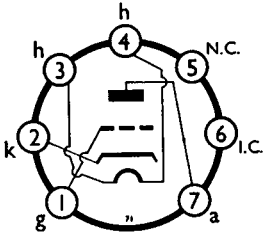
**MINIATURE
PLANAR TRIODE
6.3V INDIRECTLY HEATED**

A1714
APRIL, 1954

A low noise triode with planar electrodes for use as an R.F. oscillator or amplifier at frequencies up to 1000 Mc/s.

A1714 is the commercial equivalent of CV408.

BASE CONNECTIONS AND VALVE DIMENSIONS



View from underside of base.

Base : B7G

Overall length :	54	max.	mm.
Seated length :	47.5	max.	mm.
Diameter :	19	max.	mm.

HEATER

V_h	6.3	V
I_h	0.49 approx.	A

MAXIMUM RATINGS (design centre)

V_a	250	V
I_g	15	mA
P_a	2.5	W

CHARACTERISTICS

V_a	150	V
I_a	10	mA
μ	42.5	—
r_a	5	k Ω
g_m	8.5	mA/V
r_{in}^*	20	k Ω
c_{in}^*	5	pF
Noise factor*	2	db
r_{eq} noise ref g_1	500	Ω

*Taken at 45 Mc/s.

CAPACITANCES (of unscreened valve)

	<i>Cold</i>	<i>Hot</i> ($I_a=10$ mA)
C_{g-k} (heater earthed)	2.2	3.6 pF
C_{g-all} (less anode)	2.25	4.0 pF
C_{a-g}	0.95	— pF
C_{a-all} (less g)	0.7	— pF
C_{a-k} (heater earthed)	0.065	— pF

A1714

TYPICAL OPERATION

Neutralised R.F. amplifier (circuit : Fig. 1).

V_a	150	V
V_g	-2.2 approx.	V
I_a	10 approx.	mA
R_k	220	Ω

The circuit of fig. 1 will give good signal-to-noise ratio at frequencies of the order of 45 Mc/s. Inductances L1, L2 and L3 are wound on formers with variable dust-iron cores, L2 being the neutralising coil. The coils should be tuned to the centre of the pass band, the band-width being of the order of 10-15 Mc/s.

R.F. oscillator using lumped circuit (Fig. 2).

V_a	100	V
I_a	30	mA
I_g	14 max.	mA
P_{out}	1	W
η	33	%
f	500	Mc/s.

The circuit layout is important. "E" is an earthed copper plate placed vertically across the valve holder and soldered to tags 1 and 5 and to the centre spigot. The capacitors "C" are of the feed-through type. For a frequency of 500 Mc/s the inductance "L" is a coil $\frac{1}{4}$ in. diameter wound with approximately two turns of 16 or 18 s.w.g. copper wire. The R.F. choke is made from 20 s.w.g. enamelled wire, $\frac{1}{3} \lambda$ long, (where λ is the wavelength in use), close wound on a $\frac{1}{4}$ in. diameter former. R_k should be adjusted for optimum conditions.

Used with suitably designed distributed circuits, the A1714 will give appreciable outputs at frequencies up to 1,000 Mc/s.

MOUNTING

Any position.

SCREENING

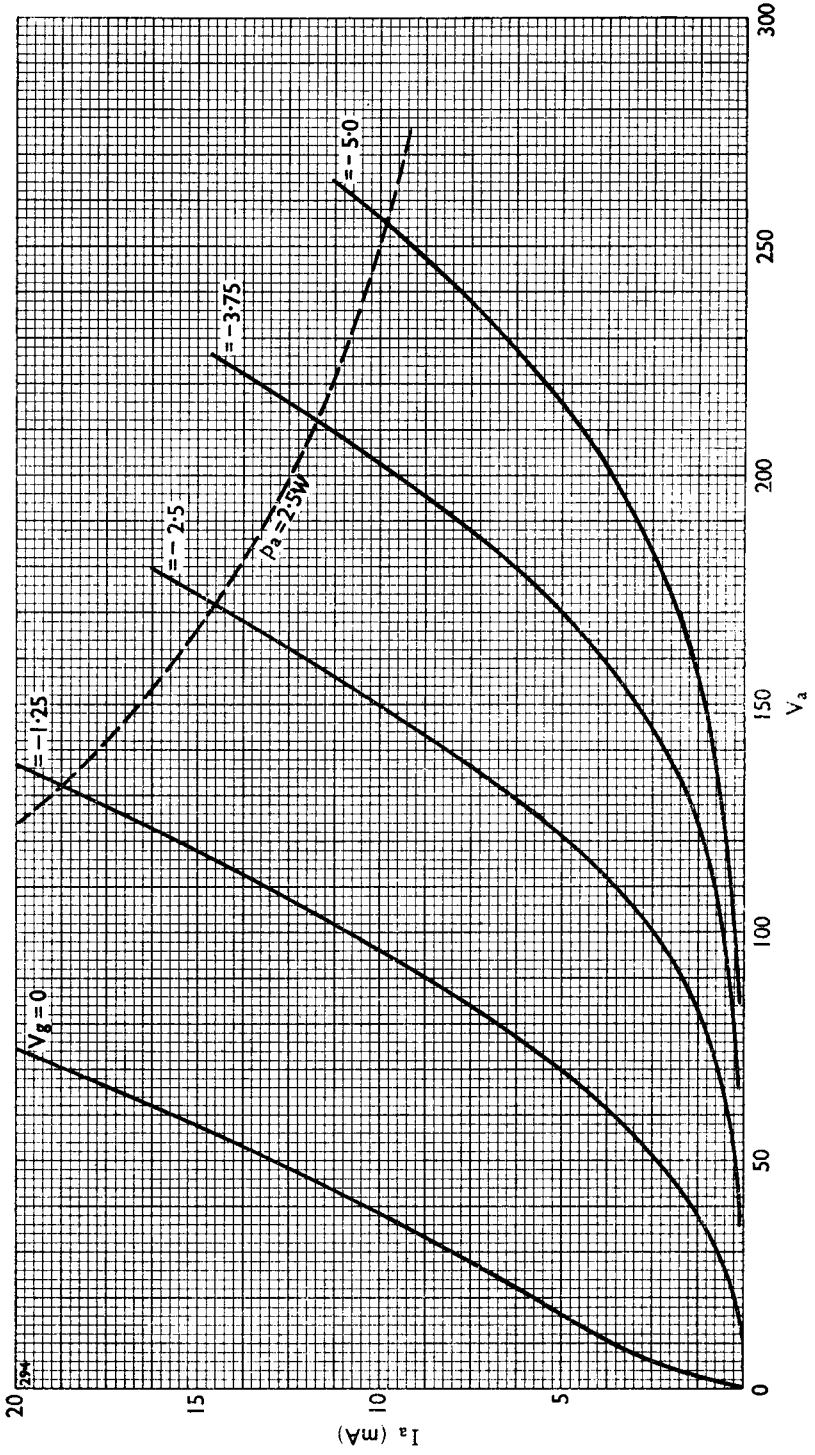
A separate screening canister should be used when application demands.

RETAINING

In equipments subject to vibration or shock, the use of a retaining device is recommended.

MICROPHONY

The valve is free from microphony in normal receiver applications.



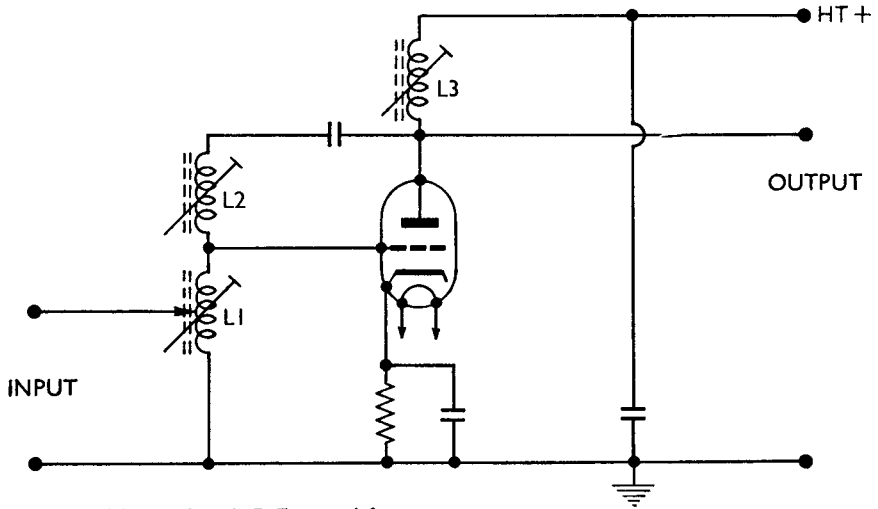


Fig. 1. Neutralised R.F. amplifier.

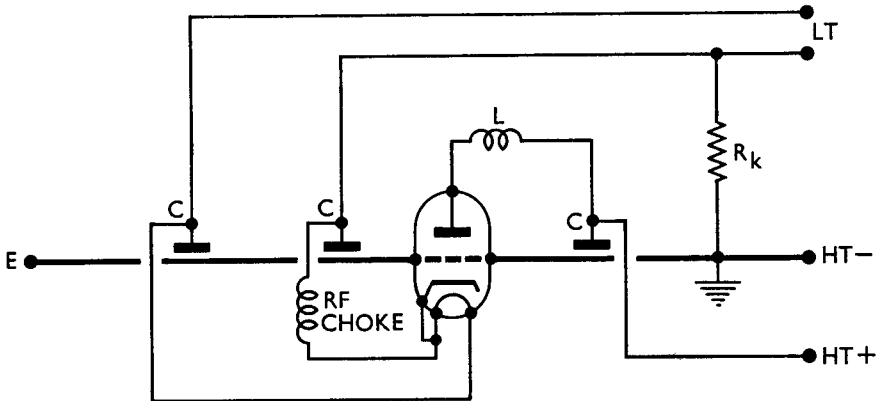


Fig. 2. R.F. oscillator using lumped circuit.