

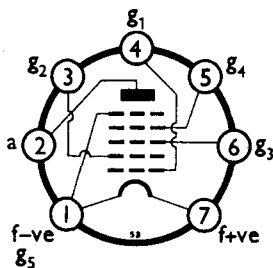


**MINIATURE
HEPTODE FREQUENCY CHANGER
1.4V DIRECTLY HEATED**

X18
MARCH, 1954

For use as a frequency changer in battery operated receivers where economy of current consumption is important. The valve will oscillate satisfactorily at reduced battery voltages at frequencies up to 26 Mc/s.

BASE CONNECTIONS AND VALVE DIMENSIONS



View from underside
of base.

Base : B7G
Bulb : Tubular

Overall length : 49—55 mm.
Seated length : 43—49 mm.
Diameter : 19 max. mm.

FILAMENT

V_f	1.4	V
I_f	0.05	A

MAXIMUM RATINGS (design centre)

V_a	90	max.	V
V_{g4}	67.5	max.	V
V_{g2}	67.5	max.	V
I_k	5.5	max.	mA

CHARACTERISTICS

V_a	67.5	67.5	90	90	V
V_{g2}	67.5	67.5	67.5	67.5	V
V_{g4}	45	45	45	45	V
I_a	1.1	0.01	1.15	0.01	mA
I_{g2}	2.85	3.8	2.85	3.8	mA
I_{g4}	0.35	0.01	0.35	0.01	mA
V_{g1} (pk)	15	15	15	15	V
V_{g3}	0	-9	0	-9	V
g_c	296	6	320	6	$\mu A/V$
r_a	0.6	>4	0.6	>4	M Ω

CAPACITANCES (of cold unscreened valve)

C_{g3-all}	7.0 pF	C_{a-g3}	0.4 pF	C_{g2-g3}	1.6 pF
C_{a-all}	7.0 pF	C_{g1-g2}	0.2 pF		
C_{g1-all}	3.8 pF	C_{a-g1}	0.1 pF		

TYPICAL OPERATION (Circuit : page 6)

V_a (b)	90		V
V_a	82	approx.	V
V_{g2}	67.5	approx.	V
V_{g1} (pk)	10		V
R_{g2}	5.6		k Ω
V_{g4}	55	approx.	V
R_{g4}	150		k Ω
I_a	0.86		mA
I_{g2}	3.0		mA
I_{g4}	0.23		mA
Conversion gain	30		

Satisfactory operation can be obtained with reduced battery voltages of 1.1V L.T and 60V H.T. (the run down battery condition) using the circuit shown. The minimum conversion gain in these conditions will be 6 at frequencies up to 26 Mc/s.

MOUNTING

Any position.

SCREENING

No internal or external screening is fitted. A separate screening canister should be used.

RETAINING

The use of a retaining device is recommended.

VENTILATION

No special precautions.

MICROPHONY

This valve is free from microphony in normal receiver applications.



