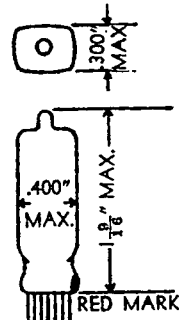


TRIODE-HEPTODE SUB-MINIATURE FREQUENCY CONVERTER

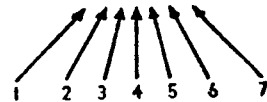
COATED FILAMENT

The 2G22 is a triode-heptode designed for use as a combined mixer and oscillator in radio receivers and other portable equipment where small size, light weight and low battery drain are important. The 2G22 is designed for plug-in use with a socket.



RATINGS

Filament Voltage	1.25	volts
Filament Current	50	ma
Maximum Heptode Plate Voltage	45	volts
Maximum Heptode Screen (G _{2H} and G _{4H}) Voltage	45	volts
Maximum Triode Plate Voltage	45	volts
Maximum Total Cathode Current	2.0	ma
Minimum External Signal Grid Bias	0	volts



T2x3 Glass Bulb

- 1—Filament Pos. and Heptode Grid #5
- 2—Heptode Grids #2 and #4
- 3—Heptode Grid #3
- 4—Filament Neg.
- 5—Triode Grid #1
- 6—Heptode Plate
- 7—Triode Plate

DIRECT INTERELECTRODE CAPACITANCES†

G ₃ to P _H (Signal Grid to Mixer Plate)	0.065	μμf
G ₃ to P _T (Signal Grid to Osc. Plate)	0.022	μμf
G ₃ to G _{1T} (Signal Grid to Osc. Grid)	0.14	μμf
G _{1T} to P _T (Osc. Grid to Osc. Plate)	1.3	μμf
G ₃ to All (Signal Input)	3.5	μμf
P _T to All Except G ₁ (Osc. Output)	3.8	μμf
G ₁ to All Except P _T (Osc. Input)	3.7	μμf
P _H to All (Mixer Output)	3.6	μμf

0.016" dia. pins. 0.05" center to center spacing. Pins identified by red mark over plate p'n. Pin length 0.200".

TYPICAL FREQUENCY CONVERTER OPERATION

Plate Voltage (Heptode)	22.5	volts
Screen Voltage (Heptode Grids #2 and #4)	22.5	volts
Oscillator Plate Voltage (Triode)	22.5	volts
Signal Grid Bias (Heptode Grid #3)*	0	volts
Oscillator Grid Resistor (Triode)	50000	ohms
Plate Current (Heptode)	200	μa
Screen Current (Heptode)	300	μa
Oscillator Plate Current (Triode)	1	ma
Oscillator Grid Current (Triode)	30	μa
Conversion Transconductance	60	μmhos
Conversion Transconductance at Signal Grid Bias = -3.5	2	μmhos
Conversion Plate Resistance (Approx.)	0.5	meg.

* Grid resistance = 5 megohms.

† With close fitting capacitance adapter shield connected to negative filament.

from RMA release # 450, Nov. 10, 1945

October 15, 1945

Preliminary Data CS-2269

RADIO RECEIVING TUBE DIVISION

NEWTON, MASS.

RAYTHEON MANUFACTURING COMPANY