

Mullard

OCTODE FREQUENCY CHANGER

FC13C

The FC13C is an octode frequency changer for use in D.C./A.C. mains super-heterodyne receivers

HEATER CHARACTERISTICS

Heater Voltage $V_f=13.0$ volts
 Heater Current $I_f=0.2$ amp
 Heating Time—60 secs.

DIMENSIONS

Overall Length ... = 135 mm.
 Overall Diameter... = 47 mm.
 Bulb Finish—Metallised

OPERATING CHARACTERISTICS

Maximum Anode Voltage	$V_{a_{max}}$	= 200 volts
Maximum Oscillator Anode Voltage	$V_{g2_{max}}$	= 90 volts
Maximum Screen Voltages	$V_{g3+5_{max}}$	= 90 volts
Normal Anode Voltage	V_{a_w}	= 200 volts
Normal Oscillator Anode Voltage	V_{g2_w}	= 90 volts
Normal Screen Voltage	V_{g3+5_w}	= 70 volts
Anode Current ($V_{g4}=-1.5$)	I_{a_w}	= 1.6 mA
Oscillator Anode Current	I_{g2_w}	= 2.0 mA
Screen Current	I_{g3+5_w}	= 3.8 mA
Control Grid Voltage	$-V_{g4_w}$	= 1.5 volts
Conversion Conductance ($I_a=1.6$ mA)	S_{c_w}	= 0.6 mA/V
Maximum Resistance in Grid Circuit	$R_{g4_{max}}$	= 2.0 megohms
Cathode Bias Resistance	R_k	= 250 ohms
Normal Heterodyne Voltage (Peak)	V_{het}	= 12 volts

CAPACITIES

Anode-Control Grid	C_{ag4}	= <0.1 μF
Input	C_{g4}	= 9.0 μF
Output	C_a	= 12.5 μF
Oscillator Grid	C_{g1}	= 9.4 μF
Oscillator Anode	C_{g2}	= 6.1 μF
Oscillator Grid-Control Grid	C_{g1g4}	= <0.35 μF
Oscillator Anode-Control Grid	C_{g2g4}	= <0.25 μF

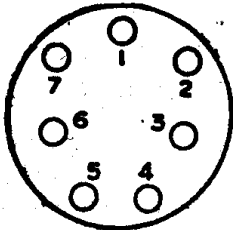
GRID CURRENT

At: $V_a=200$, $V_{g2, 3+5}=70$, V_{het} 12 Peak, Grid current (G_4) reaches a value of 1.0 μA between the grid voltage range of -0.1 to -0.75.

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CONNECTIONS



Viewed from free end of pins.

- Pin No. 1 Oscillator Anode (G₂)
 - „ 2 Oscillator Grid (G₁)
 - „ 3 Screen Grids (G₃+5)
 - „ 4 Heater
 - „ 5 Heater
 - „ 6 Cathode, Metallising
 - „ 7 Anode
- Top Cap—Control Grid (G₄)

CIRCUIT DETAILS

For details of the circuit, see the circuit diagram printed on the FC4 data sheet.

DYNAMIC CHARACTERISTICS

For the dynamic characteristics of this Valve refer to type FC4.

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