

Mullard

OCTODE FREQUENCY CHANGER

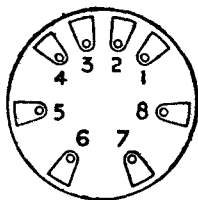
FC13

The FC13 is an indirectly heated Octode frequency changer for use in D.C./A.C. mains superheterodyne receivers.

DIMENSIONS

Overall length 118 mm. Overall diameter 47 mm.

CONNECTIONS



Contact No.	Metallising
1	Heater
2	Heater
3	Heater
4	Cathode and Suppressor Grid (G6)
5	Oscillator Anode (G2)
6	Oscillator Grid (G1)
7	Screen Grid (G3+5)
8	Anode
Top Cap—Control Grid (G4)	

Viewed from underside of Valve base.

OPERATING DATA AND NOTES

For heater characteristics, operating data, and characteristic curves, see Type FC13C. Except for dimensions and base connections, Types FC13 and FC13C are identical.

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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_{aw}	= 200 volts
Normal Oscillator Anode Voltage	...	...	...	V_{g2w}	= 90 volts
Normal Screen Voltage	...	...	...	V_{g3+5w}	= 70 volts
Anode Current ($V_{g4} = 1.5$)	...	...	...	I_{aw}	= 1.6 mA
Oscillator Anode Current	...	...	...	I_{g2w}	= 2.0 mA
Screen Current	...	...	...	I_{g3+5w}	= 3.8 mA
Control Grid Voltage	...	...	...	$-V_{g4w}$	= 1.5 volts
Conversion Conductance ($I_a = 1.6$ mA)	...	...	...	S_{cw}	= 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 $\mu\mu\text{F}$
Input	...	...	...	...	C_{g4}	= 9.0 $\mu\mu\text{F}$
Output	...	...	...	...	C_a	= 12.5 $\mu\mu\text{F}$
Oscillator Grid	...	...	...	...	C_{g1}	= 9.4 $\mu\mu\text{F}$
Oscillator Anode	...	...	...	...	C_{g2}	= 6.1 $\mu\mu\text{F}$
Oscillator Grid-Control Grid	...	...	...	...	C_{g1g4}	= < 0.35 $\mu\mu\text{F}$
Oscillator Anode-Control Grid	...	...	...	...	C_{g2g4}	= < 0.25 $\mu\mu\text{F}$

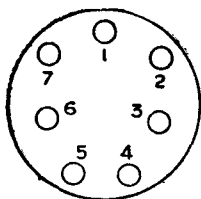
GRID CURRENT

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 .

FC13C

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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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FC13C

