

Mullard

MEDIUM IMPEDANCE TRIODE

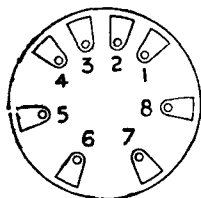
HL13

The HL13 is an indirectly heated medium impedance Triode for use in D.C./A.C. mains receivers.

DIMENSIONS

Overall length ... 101 mm. Overall diameter ... 44 mm.

CONNECTIONS



Contact No. 1 Metalling

- ” 2 Heater
- ” 3 Heater
- ” 4 Cathode
- ” 5 —
- ” 6 —
- ” 7 —
- ” 8 Anode

Top Cap—Control Grid (G1)

Viewed from underside of Valve base.

OPERATING DATA AND NOTES

For heater characteristics, operating data, and characteristic curves, see Type HL13C. Except for dimensions and base connections, Types HL13 and HL13C are identical.

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MEDIUM IMPEDANCE TRIODE

HL13C

The HL13c is a medium impedance triode for use as detector or L.F. amplifier in D.C./A.C. mains receivers.

HEATER CHARACTERISTICS

DIMENSIONS

Heater Volts	...	...	$V_f = 13.0$ volts.	Overall Length	...	$= 120$ mm.
Heater Current	...	...	$I_f = 0.2$ amp.	Overall Diameter	...	$= 43$ mm.
Heating Time	—60 seconds					Bulb Finish—Metallised

OPERATING CHARACTERISTICS

Anode Voltage	...	...	...	V_{aw}	$= 200$ volts
Anode Current	...	...	...	I_{aw}	$= 5.0$ mA
Grid Voltage	...	...	...	$-V_{gw}$	$= 3.7$ volts
Mutual Conductance	...	...	...	S_w	$= 3.3$ mA/V
Amplification Factor	...	...	...	G_w	$= 40$
Anode Impedance	...	...	...	R_{iw}	$= 12,000$ ohms
Cathode Bias Resistor	...	...	...	R_k	$= 740$ ohms

OPERATING CHARACTERISTICS AS R.C. AMPLIFIER

Line Voltage	...	...	...	V_a	$= 200$ volts
Anode Current	...	...	...	I_a	$= 0.65$ mA
Grid Voltage	...	...	...	$-V_g$	$= 2.6$ volts
Optimum Load	...	...	...	R_a	$= 160,000$ ohms
Cathode Bias Resistor	...	...	...	R_k	$= 4,000$ ohms
Amplification Factor	...	...	...	G	$= 30.0$
Maximum Output Voltage ($D=5\%$ 2nd H.)	...	...	...	V_o	$= 36.0$ volts

CAPACITIES

Anode-Control Grid	...	...	...	C_{ag1}	$= 3.1 \mu\text{F}$
Grid-Cathode	...	...	...	C_{gk}	$= 3.9 \mu\text{F}$
Anode-Cathode	...	...	...	C_{ak}	$= 4.6 \mu\text{F}$

LIMITS

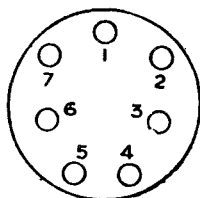
Maximum Anode Voltage	...	...	...	$V_{a\text{max}}$	$= 200$ volts
Maximum Anode Dissipation	...	...	...	$W_{a\text{max}}$	$= 2.0$ watts
Maximum Cathode Current	...	...	...	$I_{k\text{max}}$	$= 10$ mA
Maximum Resistance in Grid Circuit	...	...	...	$R_{g1A\text{max}}$	$= 1.5$ megohms
Maximum Voltage between Heater and Cathode	...	...	...	$V_{fk\text{max}}$	$= 125$ volts
Maximum Resistance between Heater & Cathode	...	...	...	$R_{fk\text{max}}$	$= 20,000$ ohms
Range of grid voltage for $1 \mu\text{A}$ grid current	...	...	...	V_{g1}	$= -0.5$ to -1.0 v.

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CONNECTIONS



Viewed from free end of pins.

Pin No. 1 Metallisation

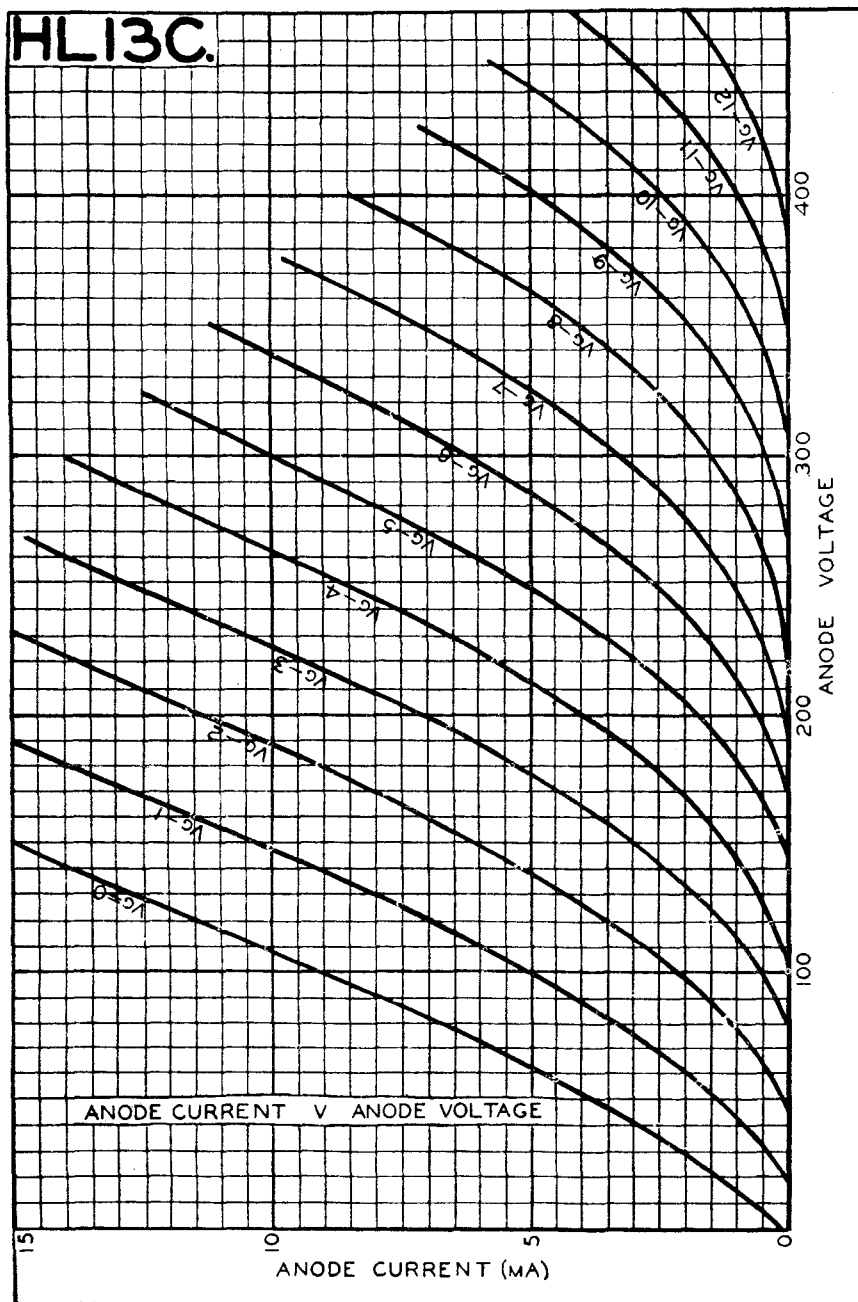
- ” 2 —
- ” 3 —
- ” 4 Heater
- ” 5 Heater
- ” 6 Cathode
- ” 7 Anode

Top Cap—Control Grid.

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