Mullard
MEDIUM IMPEDANCE TRIODE

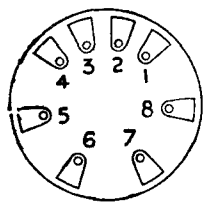
HL13

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



Viewed from underside of Valve base.

Contact No.	1	Metallising
,,	2	Heater
,,	3	Heater
,,	4	Cathode
,,	5	—
,,	6	—
,,	7	—
,,	8	Anode

Top Cap—Control Grid (G1)

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

Heater Volts	Vf=13·0 volts.
Heater Current	If=0·2 amp.
Heating Time—60 seconds	

DIMENSIONS

Overall Length ...	=120 mm.
Overall Diameter...	= 43 mm.
Bulb Finish—Metallised	

OPERATING CHARACTERISTICS

Anode Voltage	Va_W	= 200 volts
Anode Current	Ia_W	= 5·0 mA
Grid Voltage	$-Vg_W$	= 3·7 volts
Mutual Conductance	S_W	= 3·3 mA/V
Amplification Factor	G_W	= 40
Anode Impedance	Ri_W	= 12,000 ohms
Cathode Bias Resistor	Rk	= 740 ohms

OPERATING CHARACTERISTICS AS R.C. AMPLIFIER

Line Voltage	Va	= 200 volts
Anode Current	Ia	= 0·65 mA
Grid Voltage	−Vg	= 2·6 volts
Optimum Load	Ra	=160,000 ohms
Cathode Bias Resistor	Rk	= 4,000 ohms
Amplification Factor	G	= 30·0
Maximum Output Voltage (D=5% 2nd H.) ...	Vo	= 36·0 volts

CAPACITIES

Anode-Control Grid	Cag1	= 3·1 μμF
Grid-Cathode	Cgk	= 3·9 μμF
Anode-Cathode	Cak	= 4·6 μμF

LIMITS

Maximum Anode Voltage	Va_{max}	= 200 volts
Maximum Anode Dissipation	Wa_{max}	= 2·0 watts
Maximum Cathode Current	Ik_{max}	= 10 mA
Maximum Resistance in Grid Circuit	$Rg1A_{max}$	= 1·5 megohms
Maximum Voltage between Heater and Cathode	Vfk_{max}	= 125 volts
Maximum Resistance between Heater & Cathode	Rfk_{max}	= 20,000 ohms
Range of grid voltage for 1 μA grid current ...	Vg1	=−0·5 to−1·0 v.

HL13C

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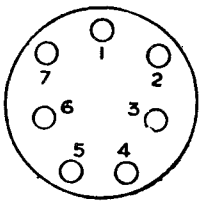
MEDIUM IMPEDANCE TRIODE

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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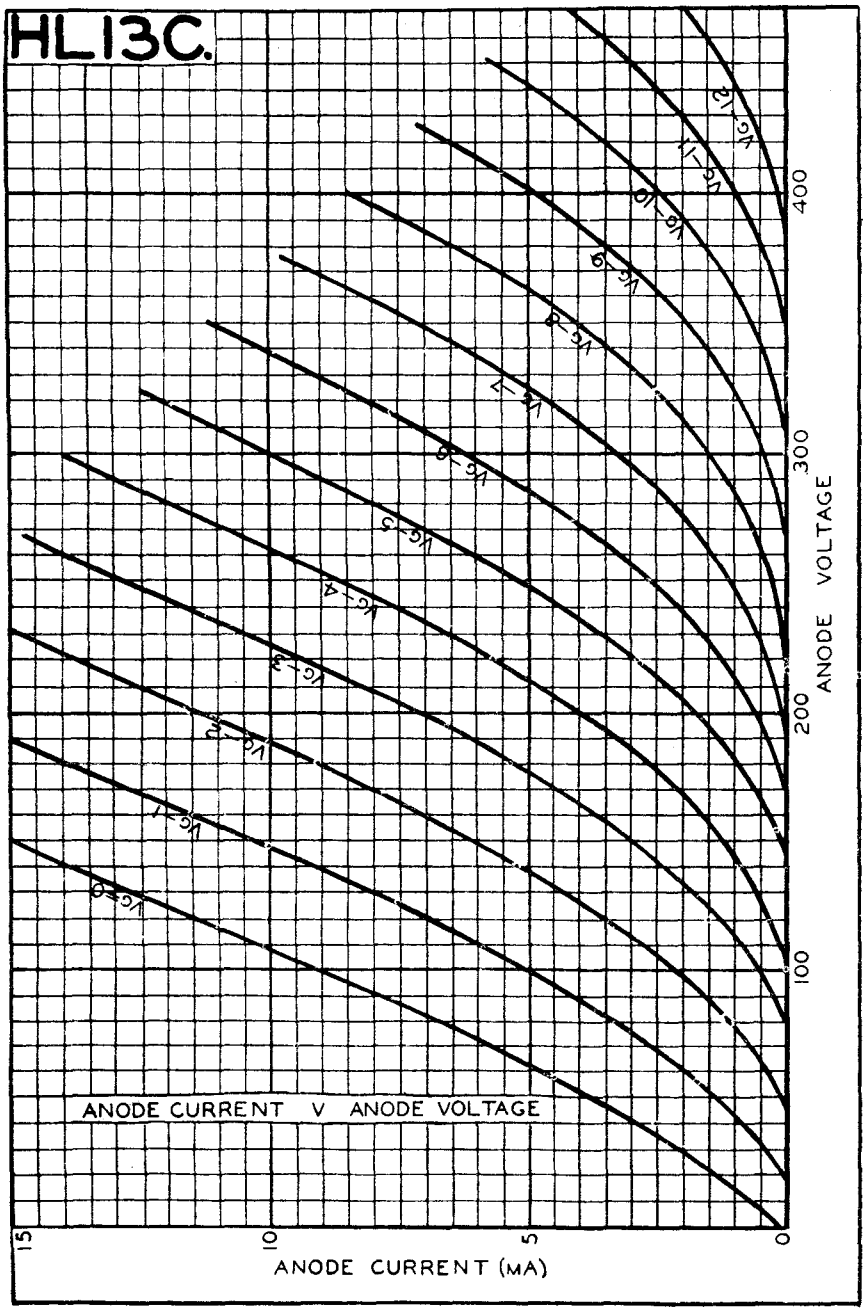
MEDIUM IMPEDANCE TRIODE



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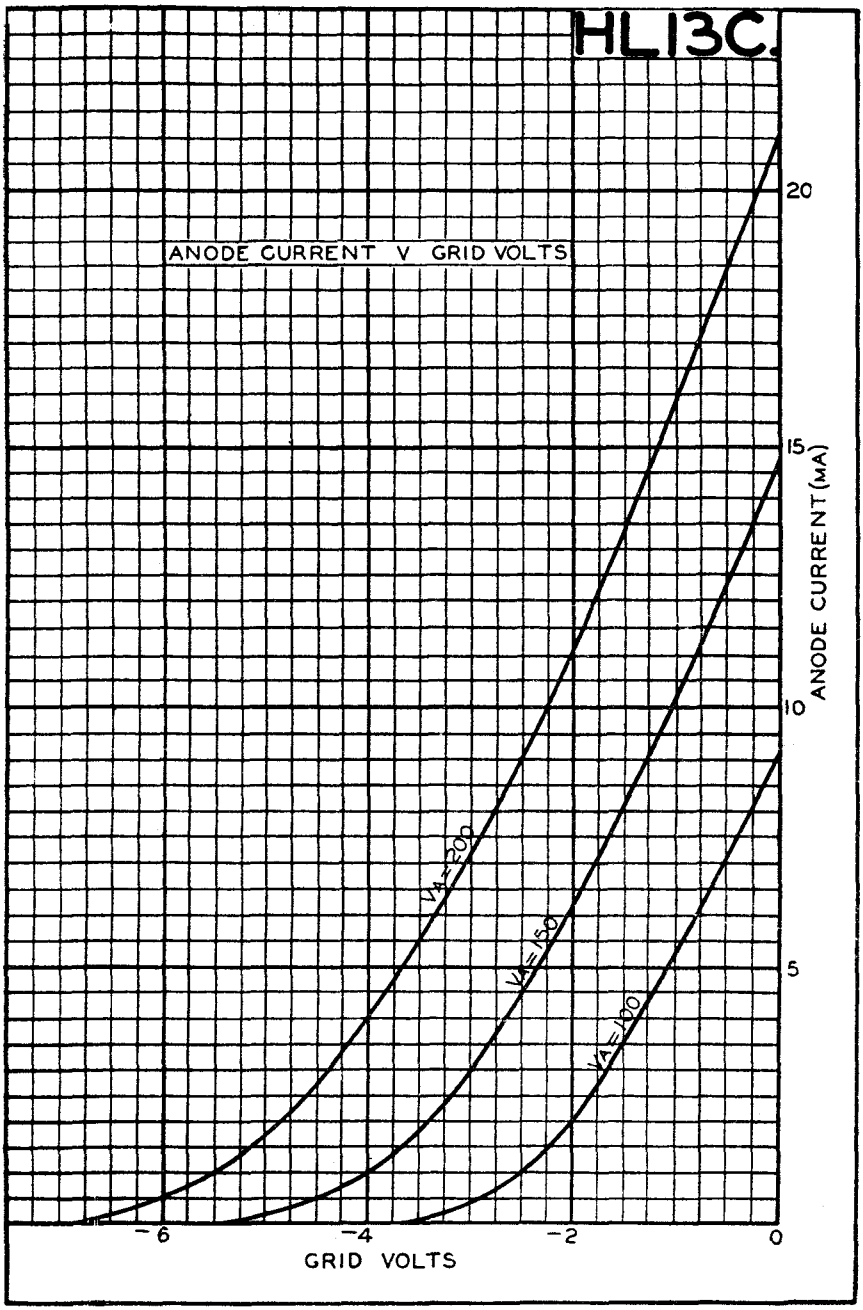
HL13C