

Rogers Electronic Tubes & Components

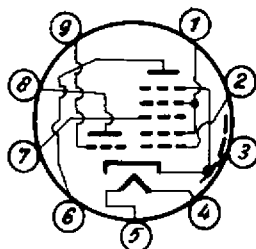
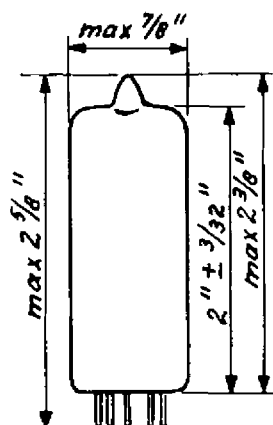
6 DS 8

Description: Triode-heptode for use as frequency converter in carradio sets, to be operated directly from a storage battery

Mechanical data

Cathode	coated, unipotential
Base	E 9-1
Bulb	T 6 ¹ / ₂
Outline	6 - 3
Basing designation	9 CA
Mounting position	any

<u>TUBE OUTLINE</u>	<u>BOTTOM VIEW OF BASE</u>	<u>BASE PIN No.</u>	<u>ELEMENT</u>
---------------------	--------------------------------	-------------------------	----------------



1	Grids No. 2 and 4
2	Grid No. 1
3	Cathode, grid No. 5, internal shield
4	Heater
5	Heater
6	Heptode plate
7	Grid No. 3
8	Triode plate
9	Triode grid

Heater data

Heater voltage	6.3 volts
Heater current	300 mamps

Direct interelectrode capacitances

Heptode section

Grid No.1 to all other elements except plate	4.8 μ F
Plate to all other elements except grid No.1	7.9 μ F
Plate to grid No. 1	max. 0.012 μ F
Grid No. 3 to all other elements	6.0 μ F
Grid No. 3 to grid No. 1	max. 0.3 μ F

10.10.1958

1.

Direct interelectrode capacitances (continued)Triode section

Grid to all other elements except plate	2.6 μF
Plate to all other elements except grid	2.1 μF
Plate to grid	1.0 μF

Between heptode and triode section

Heptode plate to triode plate	0.20 μF
Heptode plate to triode grid	max. 0.09 μF
Heptode plate to triode grid + heptode grid No. 3	max. 0.35 μF
Heptode grid No. 1 to triode plate	max. 0.06 μF
Heptode grid No. 1 to triode grid	max. 0.17 μF
Heptode grid No. 1 to triode grid + heptode grid No. 3	max. 0.45 μF

Maximum ratings (design center values)Heptode section

Plate voltage without current	550 volts max.
Plate voltage	50 volts max.
Grids No. 2 and 4 voltage with cold cathode	550 volts max.
Grids No. 2 and 4 voltage	50 volts max.
Cathode current	5 mamps max.
Grid No. 1 circuit resistance	3 megohms max.
Grid No. 3 circuit resistance	0.05 megohms max.
Voltage between cathode and heater	150 volts max.
D.C. component of cathode to heater voltage	100 volts max.

Triode section

Plate voltage without current	550 volts max.
Plate voltage	250 volts max.
Plate dissipation	0.8 watt max.
Cathode current	6.5 mamps max.
Grid No. 1 circuit resistance	3 megohms
Circuit resistance between cathode and heater	20000 ohms
Voltage between cathode and heater	150 volts max.
D.C. component of cathode to heater voltage	100 volts max.

Operating characteristics of the heptode section as frequency converter

Plate voltage	25	12.6	6.3 volts
Grids No. 2 and 4 voltage	25	12.6	6.3 volts
Grid No. 1 bias	¹⁾	¹⁾	¹⁾
Grid No. 3 (oscillator) voltage ²⁾	3.5	1.7	1.1 volts (rms)
Grid No. 3 (oscillator) current	40	18	7 μ amps
Grid No. 3 resistance	47000	47000	47000 volts (rms)
Plate current	550	170	50 μ amps
Grids No. 2 and 4 current	1000	300	80 μ amps
Conversion conductance	450	220	90 micromhos
Plate resistance	0.5	1.5	1.3 megohms

Operating characteristics of the heptode section as R.F. or I.F. amplifier

Plate voltage	25	12.6	6.3 volts
Grids No. 2, 3 and 4 voltage	25	12.6	6.3 volts
Grid No. 1 bias	¹⁾	¹⁾	¹⁾
Plate current	1.25	0.4	0.11 mamps
Grids No. 2, 3 and 4 current	0.85	0.25	0.08 mamps
Transconductance	1500	750	350 micromhos
Plate resistance	0.2	0.85	0.6 megohm
Equivalent noise resistance	5000	6500	8500 ohms

Typical characteristics of the triode section

Plate voltage	25	12.6	6.3 volts
Grid bias	³⁾	³⁾	³⁾
Plate current	2	0.75	0.3 mamps
Transconductance	2200	1400	800 micromhos
Amplification factor	20	18.3	14.6

¹⁾ Grid No. 1 bias obtained by grid current biasing with a grid No. 1 resistor of 1 megohm

²⁾ Grid No. 3 capacitively coupled to the oscillator

³⁾ Grid bias obtained by grid current biasing with a grid resistor of 47000 ohms

