

# UF 42 R.F. pentode

The UF 42 is an R.F. pentode with a very high mutual conductance, namely 8 mA/V. Amongst other applications, it is intended for use as a wide-band amplifier. The heater of this valve can be run in a 100 mA series chain. In all other respects, this valve is identical with the EF 42, and full particulars will be found in the description of the latter.

## TECHNICAL DATA OF THE R.F. PENTODE UF 42

### Heater data

Heating: indirect, A.C. or D.C., series feed

Heater current . . . . .	$I_f$	=	100 mA
Heater voltage . . . . .	$V_f$	=	21 V

### Capacitances (cold valve)

Input capacitance . . . . .	$C_{g1}$	=	8.6 pF
Output capacitance . . . . .	$C_a$	=	4.3 pF
Between anode and control grid	$C_{ag1}$	<	0.006 pF
Between control grid and heater	$C_{g1f}$	<	0.2 pF

### Typical characteristics

Anode voltage . . . . .	$V_a$	=	170 V
Voltage, grid 3 . . . . .	$V_{g3}$	=	0 V
Screen grid voltage . . . . .	$V_{g2}$	=	170 V
Grid bias . . . . .	$V_{g1}$	=	-2 V
Anode current . . . . .	$I_a$	=	10 mA
Screen grid current . . . . .	$I_{g2}$	=	2.8 mA
Mutual conductance . . . . .	$S$	=	8 mA/V
Internal resistance . . . . .	$R_i$	=	0.3 M $\Omega$
Amplification factor, grid 2 with respect to grid 1 . . . . .	$\mu_{g2g1}$	=	52
Equivalent noise resistance . . . . .	$R_{eq}$	=	1060 $\Omega$

### Operating characteristics of the UF 42 as R.F. amplifier

Anode voltage . . . . .	$V_a$	=	170 V
Voltage, grid 3 . . . . .	$V_{g3}$	=	0 V
Screen grid voltage . . . . .	$V_{g2}$	=	170 V
Anode current . . . . .	$I_a$	=	10 mA
Frequency . . . . .	$f$	=	100 Mc/s
Bandwidth . . . . .	$\Delta f$	=	0.8 Mc/s
Power gain . . . . .	$G$	=	1000

# UF 42

## Limiting values

Anode voltage, valve biased to cut-off . . . . .	$V_{a_c}$	= max. 550 V
Anode voltage . . . . .	$V_a$	= max. 250 V
Anode dissipation . . . . .	$W_a$	= max. 2 W
Screen grid voltage, valve biased to cut-off . . . . .	$V_{g2_c}$	= max. 550 V
Screen grid voltage . . . . .	$V_{g2}$	= max. 250 V
Screen grid dissipation . . . . .	$W_{g2}$	= max. 0.5 W
Cathode current . . . . .	$I_k$	= max. 15 mA
Grid bias . . . . .	$-V_{g1}$	= max. 100 V
Grid current starting point . . . . .	$V_{g1}(I_{g1} = +0.3\mu A)$	= max. -1.3 V
External resistance between control grid and cathode . . . . .	$R_{g1}$	= max. 1 MΩ <sup>1)</sup>
Voltage between heater and cathode . . . . .	$V_{fk}$	= max. 150 V
External resistance between heater and cathode . . . . .	$R_{fk}$	= max. 20 kΩ

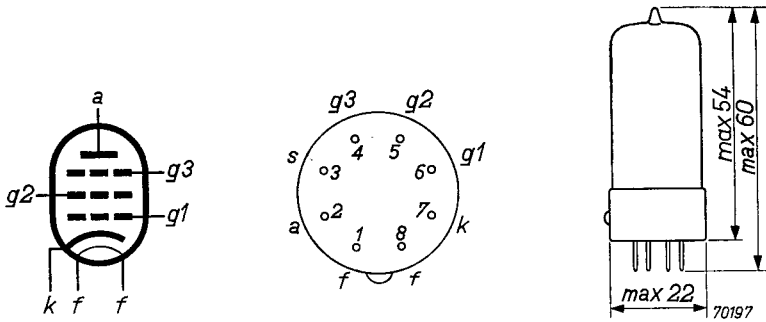


Fig. 1

Electrode arrangement, electrode connections and dimensions in mm of the UF 42.

1) With automatic grid bias.

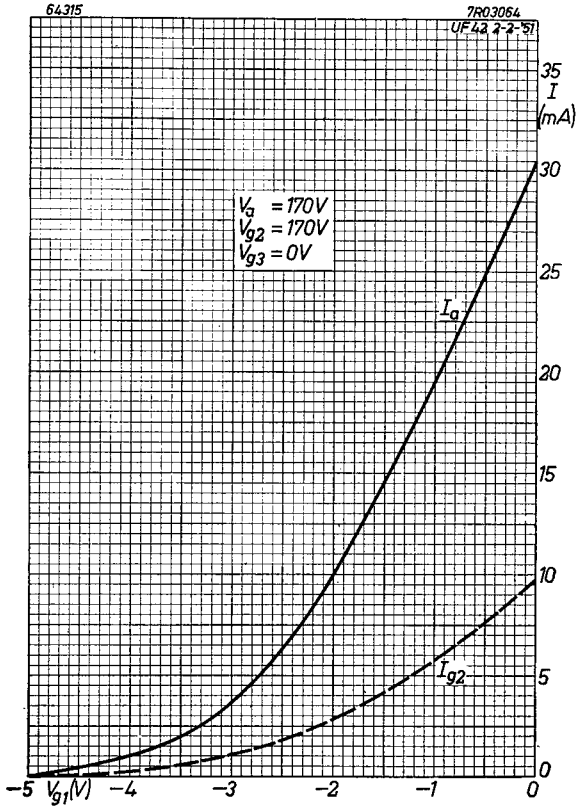


Fig. 2  
 $I_a/V_{g1}$  characteristics of  
the UF 42.

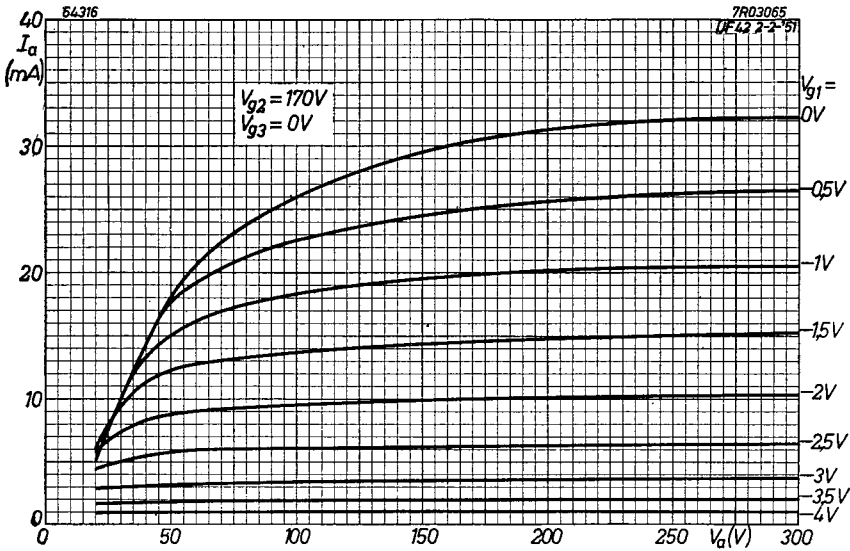


Fig. 3  
 $I_a/V_a$  characteristics of  
the UF 42.