

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 MΩ
Amplification factor, grid 2 with respect to grid 1	μ_{g2g1}	=	52
Equivalent noise resistance	R_{eq}	=	1060 Ω

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	Δf	=	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	$V_{g^2_c}$	= max. 550 V
Screen grid voltage	V_{g^2}	= max. 250 V
Screen grid dissipation	W_{g^2}	= max. 0.5 W
Cathode current	I_k	= max. 15 mA
Grid bias	$-V_{g1}$	= max. 100 V
Grid current starting point	$V_{g1}(I_{g1} = \pm 0.3 \mu A)$	= max. -1.3 V
External resistance between control grid and cathode	R_{g1}	= max. 1 M Ω ¹⁾
Voltage between heater and cathode	V_{fk}	= max. 150 V
External resistance between heater and cathode	R_{fk}	= max. 20 k Ω

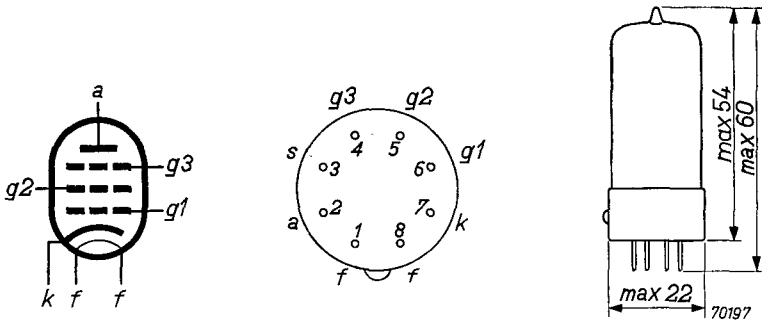


Fig. 1

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

¹⁾ With automatic grid bias.

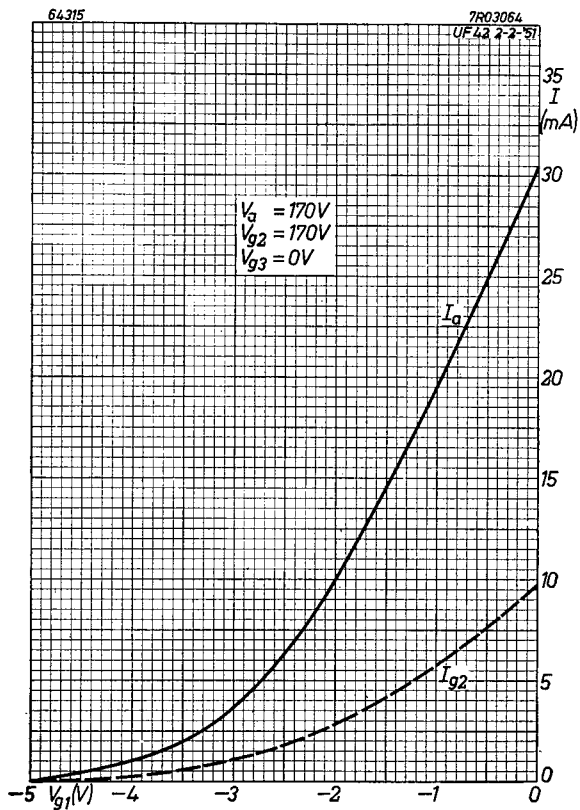


Fig. 2
 I_a/V_{g1} characteristics of
 the UF 42.

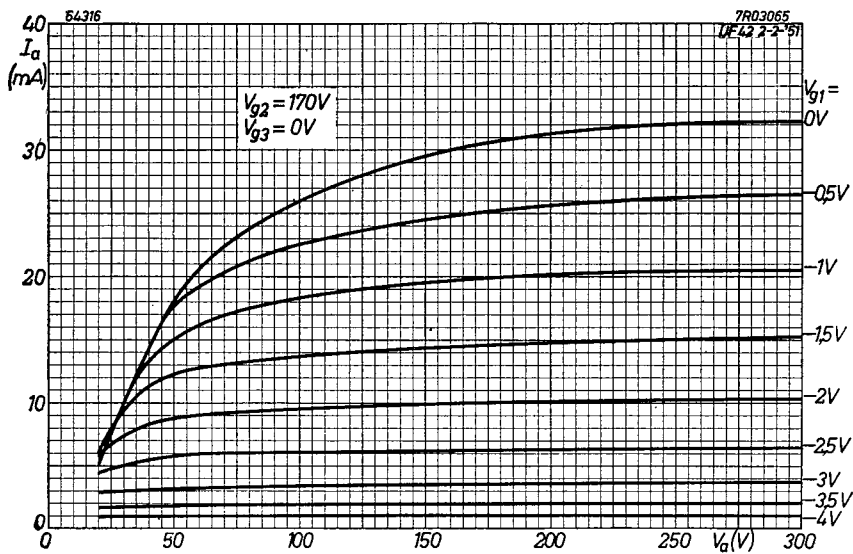


Fig. 3
 I_a/V_a characteristics of
 the UF 42.