DAF 41 Battery type diode - A.F. pentode

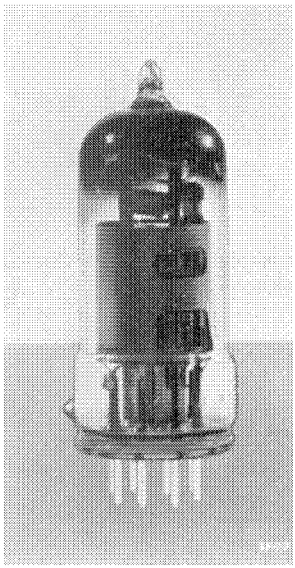

Fig. 1. The DAF 41 (approximately full size).

The DAF 41 is a battery type diode-pentode; the pentode section can be used for A.F. amplification, the diode section for detection or A.G.C. Its filament is identical with that of the DAF 40, and particulars concerning the heating will be found in the description of the latter. Furthermore, since the maximum permissible voltages for the DAF 40 are identical with those of the DAF 41, this valve is suitable for the same types of receivers. From the point of view of microphony, however, the DAF 41 is much better for A.F. amplification purposes than the DAF 40. Under the circumstances described in the chapters dealing with the EAF 42 and EBC 41, special precautions to avoid microphony are not usually necessary, provided that the A.F. input signal is at least 18 mV when the output valve delivers 50 mW. On the other hand, if a higher amplification is required, certain precautions may prove necessary, such as the use of an antimicrophonic valveholder.

TECHNICAL DATA OF THE DIODE-PENTODE DAF 41

Filament data

Heating: direct from battery, rectified A.C., or D.C.; series or parallel feed

In parallel with other valves :

Filament voltage .	V_f	=	1.4 V
Filament current . .	I_f	=	25 mA

In series with other valves :

Filament voltage . . .	V_f	=	1.3 V

DAF 41

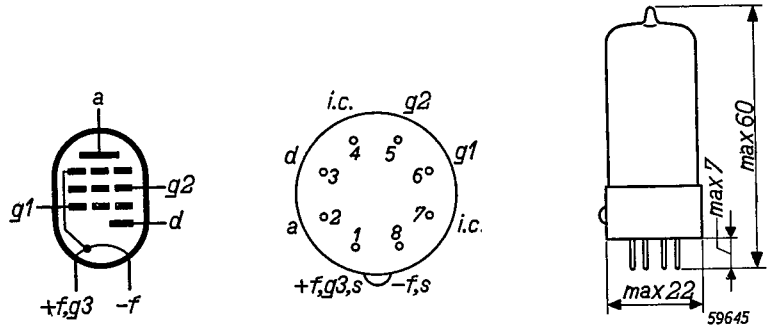

Fig. 2. Electrode arrangement, electrode connections and dimensions in mm of the DAF 41.

Capacitances (valve cold)

Input capacitance	C_{g1}	=	2.8 pF
Output capacitance	C_a	=	3.7 pF
Between anode and control grid	C_{ag1}	<	0.0065 pF
Between diode-anode and cathode	C_d	=	2.1 pF
Between diode-anode and pentode-control grid	C_{g1d}	<	0.003 pF
Between diode-anode and pentode-anode	C_{ad}	<	0.1 pF

Operating characteristics of the pentode section used as resistance-coupled A.F. amplifier

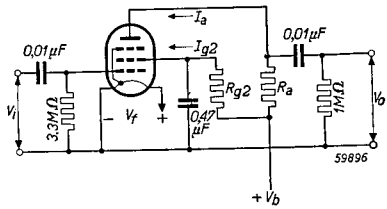

Fig. 3. Circuit diagram showing the DAF 41 used as A.F. amplifier.

V_b (V)	R_a (MΩ)	R_{g2} (MΩ)	I_a (mA)	I_{g2} (mA)	$\frac{V_o}{V_i}$	Distortion (%) with an output voltage (V_o) of		
						3 V_{RMS}	5 V_{RMS}	10 V_{RMS}
67.5	0.22	0.82	0.17	0.04	60	1.4	1.7	
90	0.22	0.82	0.25	0.06	70	0.8	0.9	
90	0.47	2.2	0.13	0.03	83	1.1	1.4	
120	0.47	2.2	0.18	0.04	100	0.5	1.0	
150	0.47	2.2	0.24	0.05	112	0.4	0.7	1.4

Limiting values of the pentode section

Anode voltage, valve biased to cut-off	V_{a_o}	= max.	180 V
Anode voltage	V_a	= max.	135 V
Anode dissipation	W_a	= max.	0.1 W
Screen grid voltage, valve biased to cut-off	V_{g2_o}	= max.	180 V
Screen grid voltage	V_{g2}	= max.	85 V
Screen grid dissipation	W_{g2}	= max.	0.02 W
Grid current starting point	$V_{g1}(I_{g1} = +0.3\mu A)$	= max.	—0.2 V
Cathode current	I_k	= max.	0.5 mA
External resistance between control grid and cathode	R_{g1}	= max.	10 MΩ

Limiting values of the diode section

Peak inverse voltage	$V_{d\,inv\,p}$	= max.	100 V
Diode current	I_d	= max.	0.2 mA
Peak diode current	I_{dp}	= max.	1.2 mA

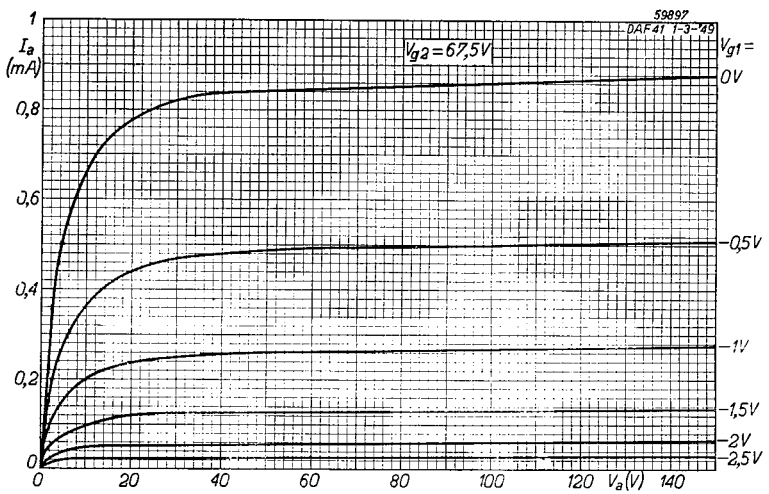

Fig. 4. Anode current (I_a) of the DAF 41 as a function of the anode voltage (V_a) at various values of the grid bias (V_{g1}). Screen grid voltage V_{g2} = 67.5 V.