KC 4 Triode

The triode KC 4 can be used either as oscillator valve for the frequency-changer KH 1, or as A.F. amplifier. In the last-mentioned case the total A.F. gain, as from the grid of the valve, should not be too high, as this may result in microphony.

FILAMENT RATINGS

Heating: direct by battery; parallel supply.

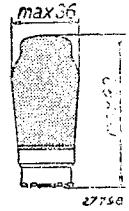Filament voltage . . . . $V_f = 2.0$ V
Filament current. . . . . $I_f = 0.1$ A

Fig. 1
Dimensions in mm

CAPACITANCES

$C_{ag} = 2.9$ $\mu\mu$F
$C_{gf} = 2.1$ $\mu\mu$F
$C_{af} = 5$ $\mu\mu$F

STATIC DATA

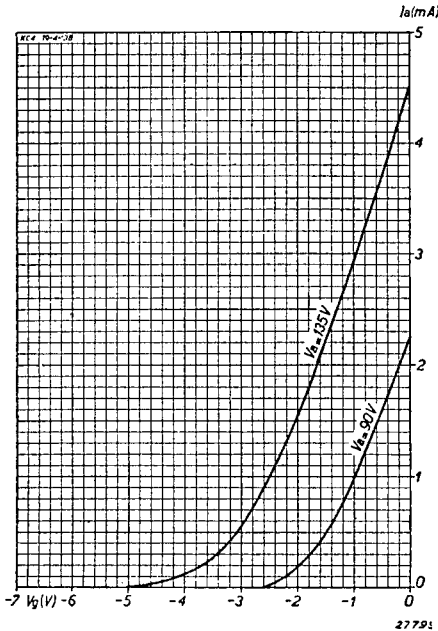|			
Anode voltage	V_a	= 90	135 V
Grid bias	V_g	= —1.5	—1.5 V
Anode current	I_a	= 0.5	2.2 mA
Amplification factor	μ	= 30	30
Internal resistance	R_i	= 37,500	21,500 ohms
Mutual conductance	S	= 0.8	1.4 mA/V
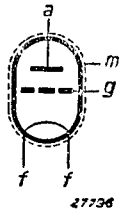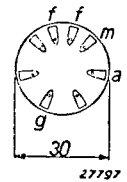
Fig. 2
Arrangement of electrodes and base connections

Fig. 3
Anode current as a function of the grid bias, with Va = 90 and 135 V.

OPERATING DATA: KC 4 used as resistance-coupled A.F. amplifier

Battery voltage Vb (V)	Coupling resistor (M ohms)	Grid bias Vg (V)	Anode current Ia (mA)	Stage gain $\dfrac{Vo}{Vi}$	For valve KL 1 $Va = Vb$		For valve KL 2 $Va = Vb$		For valve KL 4 $Va = Vb$	
					Vo (Veff)	$dtot$ (%)	Vo (Veff)	$dtot$ (%)	Vo (Veff)	$dtot$ (%)
135	0.2	—1.5	0.32	21.5	4.2	< 1	8	1.2	5	< 1
90	0.2	—1.5	0.15	18.5	3	1.5	5	2.3	3.3	1
135	0.1	—1.5	0.52	20	4.2	< 1	8	1.3	5	< 1
90	0.1	—1.5	0.23	16.5	3	1.7	5	2.9	3.3	1.1
135	0.05	—1.5	0.8	17.5	4.2	< 1	8	1.6	5	< 1
90	0.05	—1.5	0.32	13.5	3	2.8	5	4	3.3	1.5

MAXIMUM RATINGS

Anode voltage . . . . V_a = max. 150 V
Anode dissipation . . . . W_a = max. 0.5 W
Cathode current . . . . I_k = max. 5 mA
Grid voltage at grid current start . . $(I_g = + 0.3\ \mu A)$ V_g = max. —0.2 V
External resistance between grid and filament . . . . . R_{gf} = max 3 M ohms
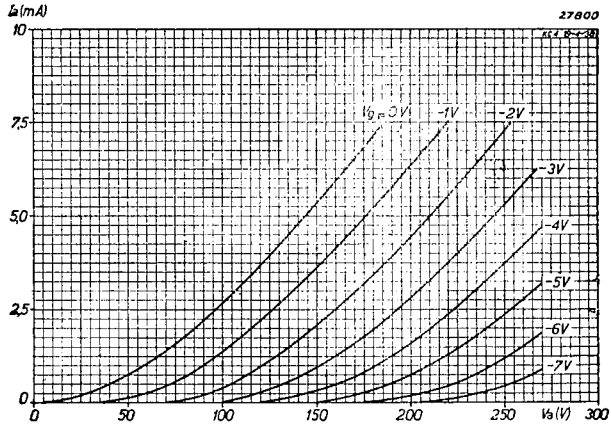

Fig. 4
Anode current as a function of the anode voltage for various values
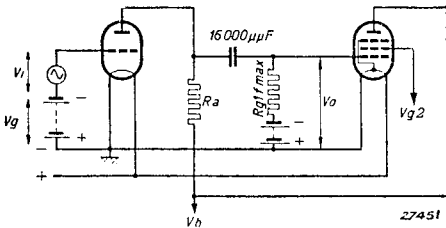of grid bias.

Fig. 5
Theoretical diagram of circuit employing resistance-coupled amplification and illustrating the symbols used in the data.