

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

CAPACITANCES

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

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	$\mu = 30$	30
Internal resistance	$R_i = 37,500$	21,500 ohms
Mutual conductance	$S = 0.8$	1.4 mA/V

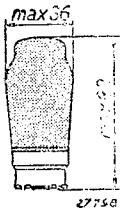


Fig. 1
Dimensions in mm

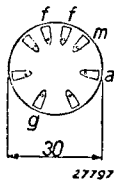
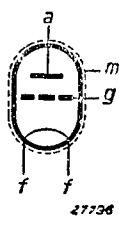


Fig. 2
Arrangement of electrodes and base connections

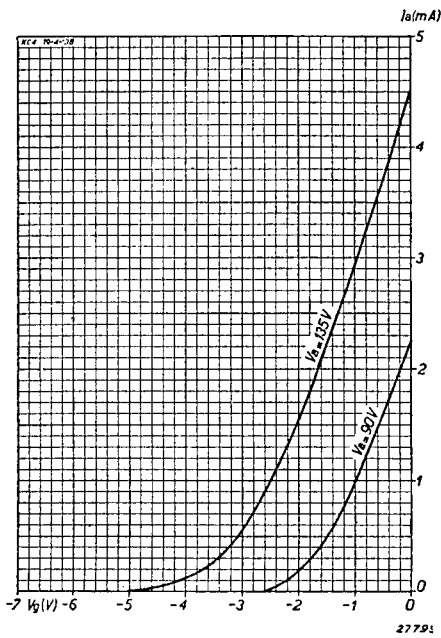


Fig. 3
Anode current as a function of the grid bias, with $V_a = 90$ and 135 V.

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

Battery voltage V_b (V)	Coupling resistor (M ohms)	Grid bias V_g (V)	Anode current I_a (mA)	Stage gain $\frac{V_o}{V_i}$	For valve KL 1		For valve KL 2		For valve KL 4	
					$V_a = V_b$		$V_a = V_b$		$V_a = V_b$	
					V_o (Veff)	$dtot$ (%)	V_o (Veff)	$dtot$ (%)	V_o (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

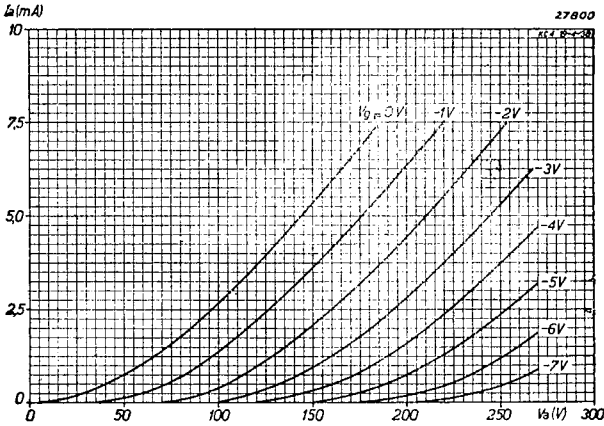


Fig. 4
Anode current as a function of the anode voltage for various values of grid bias.

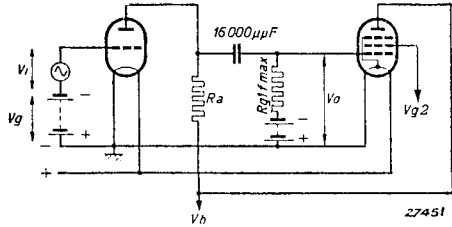


Fig. 5
Theoretical diagram of circuit employing resistance-coupled amplification and illustrating the symbols used in the data.