

KF 3 Variable-MU R.F. pentode

The KF 3, a variable-mu R.F. pentode, offers excellent cross-modulation characteristics throughout the whole range of control on the valve. At the normal working point the anode current is very low; only a small control potential will completely quench the valve. These rapid control characteristics are of great importance in superhet. battery receivers that include a short-wave range and, although it is not generally advisable to apply control on that range, effective A.G.C. can nevertheless be obtained in the case of the KF 3. This valve can be used only for R.F. and I.F. amplification; when employed in the former capacity it gives very good results also on short waves; not only are the low capacitances subject to very little variation when control is applied, but the input and output damping resistances are high and retroaction from the anode extremely slight. On short waves, especially, it is advisable to earth both the metallizing and the suppressor grid by means of the shortest possible (low inductive) leads.

FILAMENT RATINGS

Heating: direct by battery; parallel supply.

Filament voltage. $V_f = 2 \text{ V}$

Filament current. $I_f = 0.045 \text{ A}$

CAPACITANCES

$C_{ag1} < 0.006 \mu\mu\text{F}$

$C_{g1} = 6.2 \mu\mu\text{F}$

$C_u = 5.2 \mu\mu\text{F}$

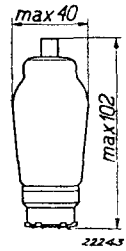


Fig. 1
Dimensions in mm.

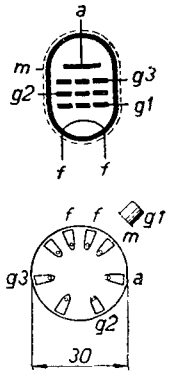


Fig. 2
Arrangement of
electrodes and
base connections.

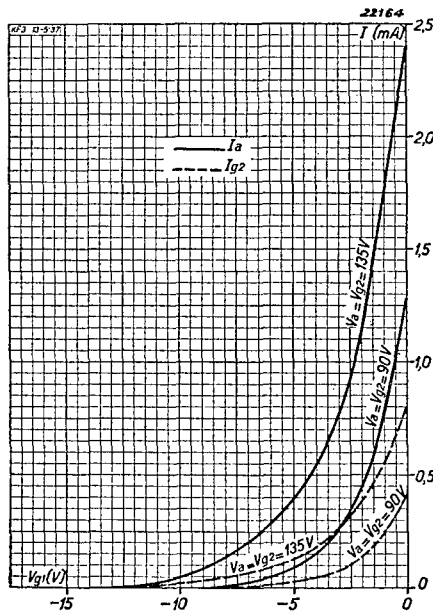


Fig. 3
Anode and screen-grid current as functions of the
grid bias.

OPERATING DATA

Anode voltage	V_a	=	90		135 V
Screen-grid voltage . . .	V_{g2}	=	90		135 V
Suppressor grid voltage.	V_{g3}	=	0		0 V
Grid bias	V_{g1}	=	$\overbrace{-0.5}$	$\overbrace{-9}$	$\overbrace{-0.5}$ $\overbrace{-13.5}$ V
Anode current	I_a	=	1	—	2 — mA
Screen-grid current . . .	I_{g2}	=	0.2	—	0.6 — mA
Amplification factor . .	μ	=	1000	—	850 —
Mutual conductance . . .	S	=	500	5	650 $6.5 \mu\text{A/V}$
Internal resistance . . .	R_i	=	2	> 10	1.3 $> 10 \text{ M ohms}$

MAXIMUM RATINGS

V_a	= max. 135 V	V_{g2}	= max. 135 V
W_a	= max. 0.5 W	W_{g2}	= max. 0.2 W
I_k	= max. 5 mA	R_{g1}	= max. 3 M ohms
$V_{g1} (I_{g1} = + 0.3 \mu\text{A}) = \text{max. } -0.2 \text{ V}$			

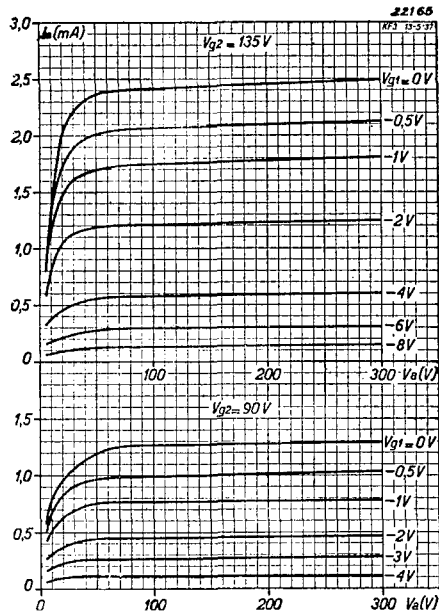


Fig. 4
Anode current as a function of the anode voltage, with grid bias as parameter.

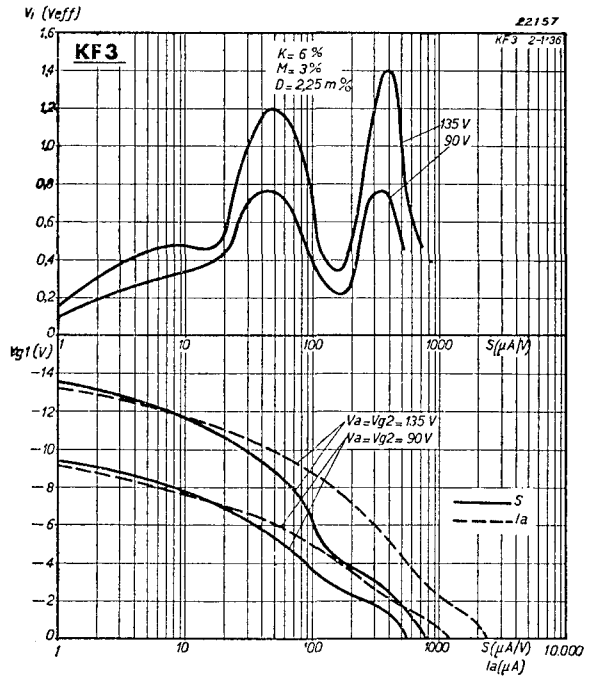


Fig. 5
Upper diagram. Max. permissible effective value of alternating grid voltage with 6 % cross-modulation (0.5 % 3rd harmonic) as a function of the mutual conductance.
Lower diagram. Mutual conductance and anode current as functions of the grid bias.