ELECTRON-RAY TUBE DG 3-2

CHARACTERISTICS

Heater voltage	V_f	=	6·3		V
Heater current	I_f	=	0·65		A
Anode voltage	V_{a_2}	=	500	800	V
Auxiliary anode voltage	V_{a_1}	=	150	200	V
Grid voltage	V_g	=	0 to -25	0 to -35	V
Sensitivity of the first pair of plates	N_1	=	0·09	0·06	mm/V
Sensitivity of the second pair of plates	N_2	=	0·06	0·04	mm/V
Grid to cathode capacity	C_g	=	approx. 6·5		pF
Capacity between plates of first pair	$C_{D_1D_1'}$	=	approx. 1·5		pF
Capacity between plates of second pair	$C_{D_2D_2'}$	=	approx. 1·0		pF

SPECIAL ADVANTAGES

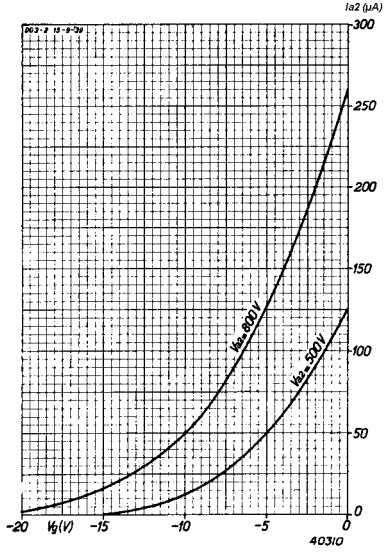
1. Small size; only 125 mm long
2. Low anode voltage; a cheap and simple supply unit suffices
3. Asymmetrical deflection by the second pair of plates

DESCRIPTION

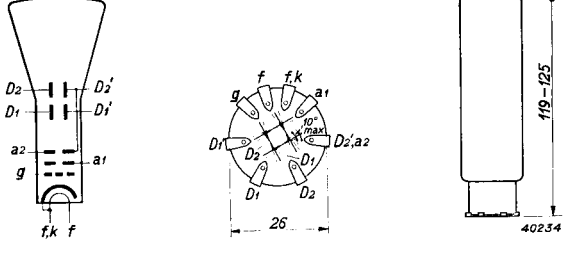
The electron-ray tube DG 3-2 has a screen of about 35 mm in diameter. Despite the low anode potential (500-800 V) a very bright trace is obtained; focusing of the beam is achieved by electrostatic means.
The voltage applied to the auxiliary anode a_1 should be adjusted so that the area of the spot is reduced to the minimum. The deflection voltage to the first pair of plates should preferably be symmetrical. The second pair of plates are

designed for asymmetrical deflection, one of them being internally bonded to the second anode a_2. Trapezoidal distortion is greatly reduced by the special form of these plates; each has that edge which faces the cathode cut to a concave shape, while the unearthed plate carries two short perpendicular rods at its concave edge.

As a voltage of only 500-800 V is required, the HT supply unit for the tube DG 3-2 may be quite simple; an ordinary receiver-type rectifying valve such as the AZ1 can easily be used, in conjunction with a mains transformer of the type employed in domestic radio sets; the HT secondary winding should for preference be 400 + 400 V or 500 + 500 V. The electron-ray tube imposes a very light load on the high-tension supply, and the rectified voltage will therefore be as much as 600-700 V. Alternatively, the entire secondary winding of a transformer for a lower voltage might be used with half-wave rectification. The tube is supplied only with a green fluorescent screen.



Anode current shown against negative grid bias.



Arrangement of electrodes; connections and maximum dimensions in millimetres.