

AZ 41 Full-wave rectifying valve

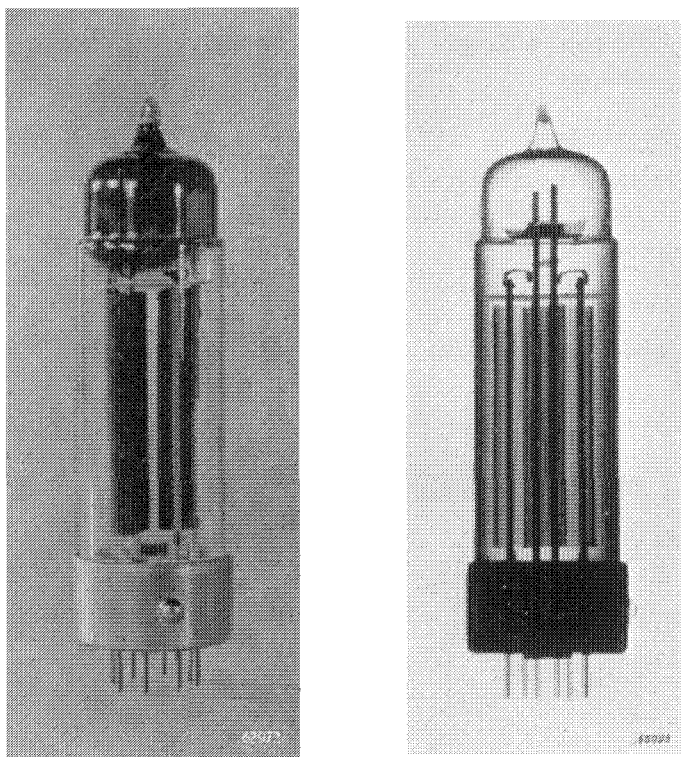


Fig. 1

Normal and X-ray photographs of the AZ 41 (approximately actual size).

The AZ 41 is a directly heated, high-vacuum, full-wave rectifier capable of delivering a current of 70 mA for a transformer voltage of $2 \times 300 \text{ V}_{RMS}$. This is sufficient to supply a receiver containing the valves ECH 42 (or ECH 41), $2 \times \text{EAF } 42$ and EL 41, leaving enough in hand to operate an extra R.F. stage and tuning indicator.

For higher transformer voltages, up to a maximum of $2 \times 500 \text{ V}_{RMS}$, the valve will deliver 60 mA.

In order to avoid sputtering, or momentary flash-over between filament and anode, a D.C. resistance R_t , the minimum value of which is specified in the following table, should be included in each of the anode circuits. In practice, this resistance R_t is often present in the form of the D.C. resistance of the primary and secondary windings of the mains transformer.

Let R_p be the D.C. resistance of the primary, R_s that of half the secondary,

AZ 41

and n the transformation ratio between the primary and half the secondary winding. The effective resistance R_t in each anode circuit is then given by:

$$R_t = R_s + n^2 R_p.$$

If the value thus obtained is less than the minimum value specified in the operating data, extra resistance must be added in each anode circuit.

TECHNICAL DATA OF THE FULL-WAVE RECTIFIER AZ 41

Filament data

Heating : direct by A.C.			
Filament voltage	 V_f	=	4.0 V
Filament current	 I_f	=	0.72 A

Limiting values

Alternating input voltage	. . V_{tr}	=	2×300	2×400	2×500	V_{RMS}
Direct-current output	. . . I_o	=	max. 70	60	60	mA
Total resistance in anode circuits (minimum)	 R_t	=	2×100	2×150	2×200	Ω
Input capacitance of smoothing filter	 C_{all}	=	max. 50	50	50	μF

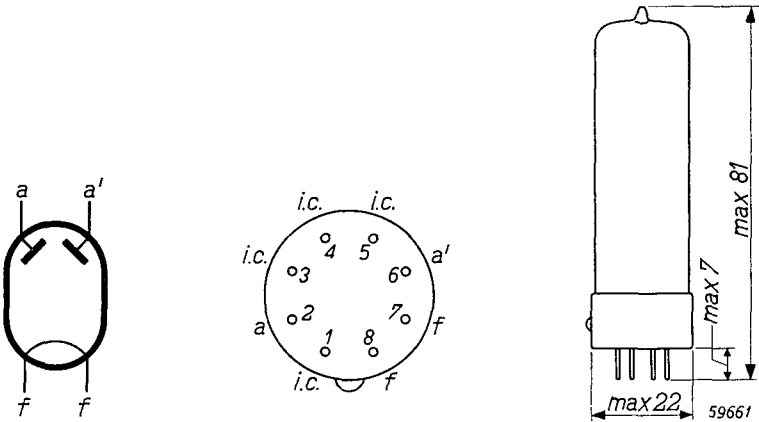


Fig. 2. Electrode arrangement, electrode connections and maximum dimensions in mm. The letters i.c. at pins 1, 3, 4 and 5 indicate that these pins must not be connected externally for any purpose whatsoever.

I (mA) per Anode

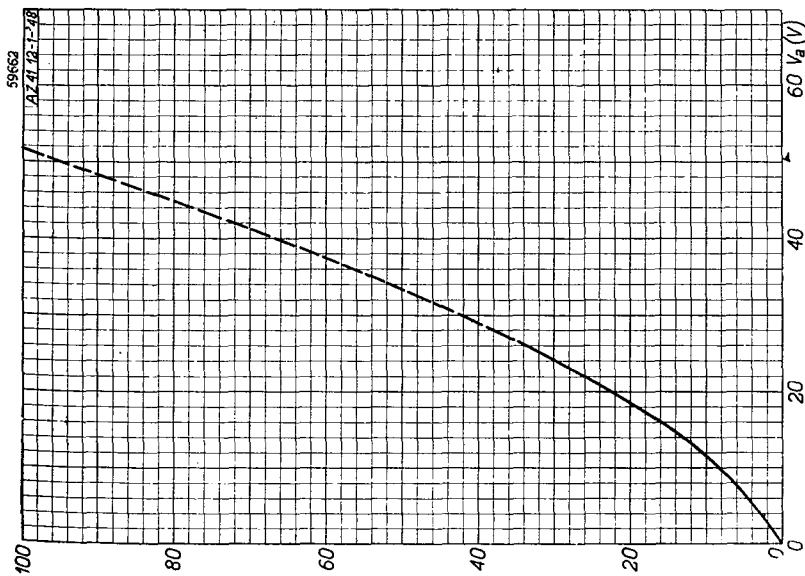


Fig. 3. Anode current (I_a) per anode as a function of the anode voltage (V_a). As the maximum permissible current is 35 mA per anode, the curve above this point is shown by a dotted line.

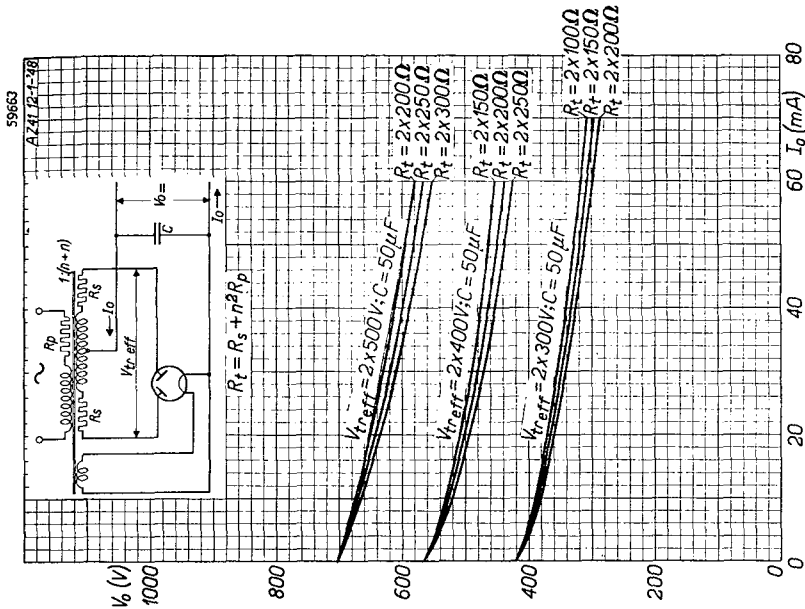


Fig. 4. Regulation curves of the AZ 41 (D.C. output voltage V_0 as a function of the direct output current I_0).