

## AZ 41 Full-wave rectifying valve

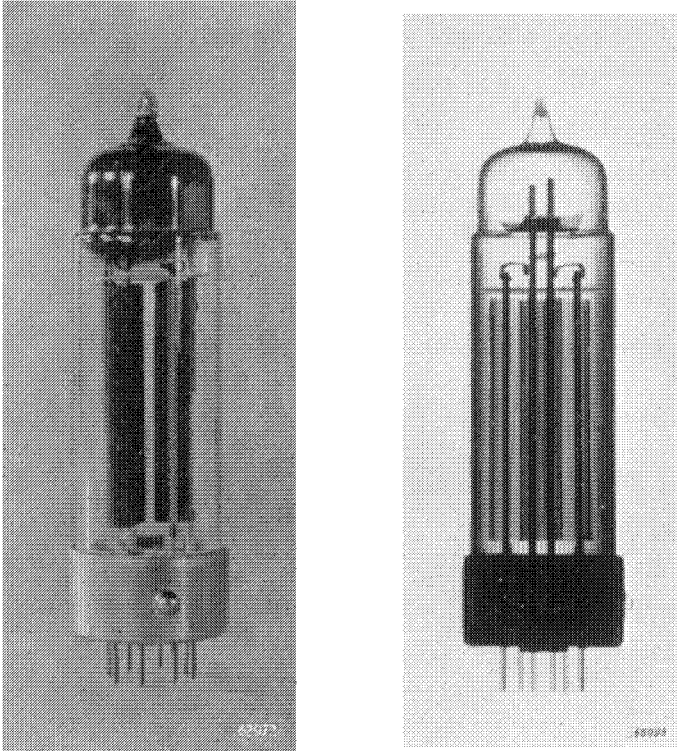


Fig. 1

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  $2 \times 300 V_{RMS}$ . This is sufficient to supply a receiver containing the valves ECH 42 (or ECH 41),  $2 \times$  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  $2 \times 500 V_{RMS}$ , 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,

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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	$\Omega$
Input capacitance of smoothing filter . . . . .	$C_{filt}$	=	max. 50	50	50	$\mu F$

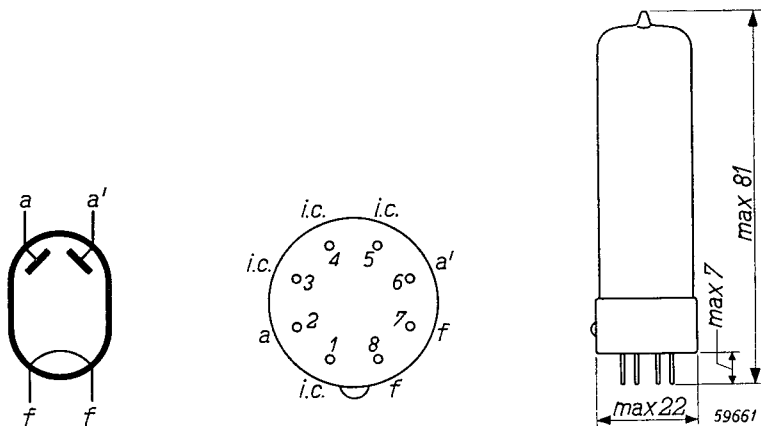


Fig. 2. Electrode arrangement, electrode connections and maximum dimensions in mm. The letters i.c. at pins 1, 3, 4 and 5 indicate that these pins must not be connected externally for any purpose whatsoever.

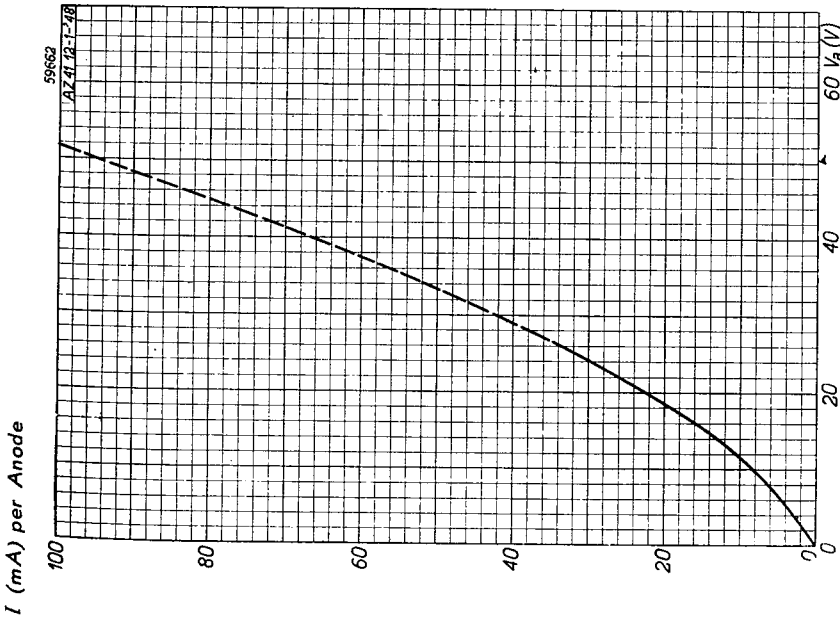


Fig. 3. Anode current ( $I_a$ ) per anode as a function of the anode voltage ( $V_a$ ). As the maximum permissible current is 35 mA per anode, the curve above this point is shown by a dotted line.

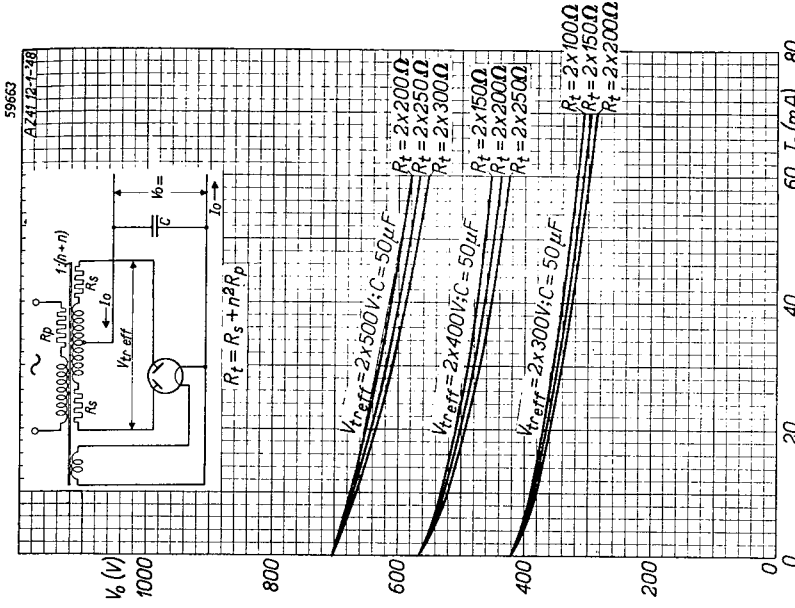


Fig. 4. Regulation curves of the AZ 41 (D.C. output voltage  $V_o$  as a function of the direct output current  $I_o$ ).