

FERRANTI

FULL WAVE RECTIFIER

A directly heated, high vacuum full wave rectifier.

PHYSICAL DETAILS

Base	International Octal
Bulb	Clear
Max. Overall Length...	135 mm. ($5\frac{5}{16}$ ")
Max. Seated Height ...	121 mm. ($4\frac{3}{4}$ ")
Max. Diameter (Bulb)	52 mm. ($2\frac{1}{16}$ ")
Mounting Position ...	Vertical, base down; or horizontal with pins 1 and 4 in ver- tical plane.

BASE CONNECTIONS

Pin 1.—No connection.	Pin 5.—No Pin.
Pin 2.—Filament.	Pin 6.—Anode 1.
Pin 3.—No Pin.	Pin 7.—No Pin.
Pin 4.—Anode 2.	Pin 8.—Filament.

FILAMENT

Filament Voltage	5.0 volts.
Filament Current	3.0 amps.

RATINGS

Max. Peak Inverse Voltage	1550 volts.
Max. R.M.S. Anode Voltage	See Rating Chart.
Max. Rectified Current...	See Rating Chart.
*Max. Peak Anode Current	675 mA.
*Min. Limiting Resistance...	170 ohms.
*†Max. Hot-switching Tran- sient Anode Current...	2.35 amps.

TYPICAL OPERATION

Capacitor-Input Filter

*R.M.S. Input Voltage	450	550	volts
†Filter-Input Capacitor	10	10	μ F.
*Min. Supply Impedance	170	230	ohms

DC Output Voltage at Input to
Filter (approx.):—

At Half-Load	f	112.5 mA.	510	—	volts
Current of	f	78 mA.	—	660	volts
At Full-Load	f	225 mA.	430	—	volts
Current of	f	156 mA.	—	590	volts

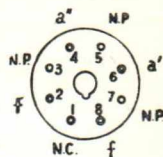
Voltage Regulation, Half-load
to Full-load Current (approx.) 80 70 volts

*Each Anode.

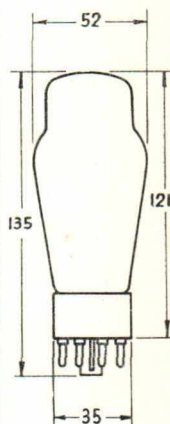
†For maximum duration of 0.2 sec.

†When a filter input capacitor greater than 10μ F.
is used, it may be necessary to increase the
effective supply impedance to avoid exceeding
the hot-switching transient anode current.

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Base
Connections
Underside View
of Base



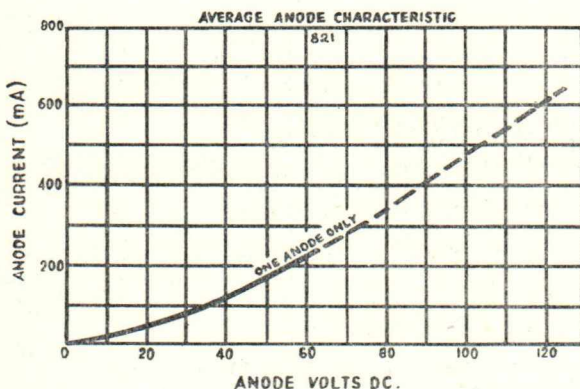
All dimensions
shown are in
millimetres



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→ TYPICAL OPERATION (cont.)

Choke-Input Filter		
*R.M.S. Input Voltage	450	550 volts
Filter Input Choke	10 [†]	10 [‡] henries
DC Output Voltage at Input to Filter (approx.):—		
Current of	135 mA.	365 — volts
At Half-Load	112.5 mA.	— 460 volts
At Full-Load	270 mA.	345 — volts
Current of	225 mA.	— 440 volts
Voltage Regulation, Half-load to Full-load Current (approx.)	20	20 volts



*Each Anode.

†This value is adequate to maintain optimum regulation in the region to the right of line $L = 10H$ on curve Operation Characteristics with Choke-Input Filter, provided the load current is not less than 35mA. For load currents less than 35 mA., a larger value of inductance is required for optimum regulation.

‡This value is adequate to maintain optimum regulation in the region to the right of line $L = 10H$ on curve Operation Characteristics with Choke-Input Filter, provided the load current is not less than 50 mA. For load currents less than 50 mA., a larger value of inductance is required for optimum regulation.



RATING CHART

(Page 4)

The graphical presentation of the relationships between maximum AC. voltage input and maximum DC. output current derived from the fundamental ratings for conditions of capacitor-input and choke-input filters. The use of this chart together with the graphs of Operation Characteristics will enable the equipment designer to select operating conditions within the specified ratings.

OPERATION CHARACTERISTICS.

FULL-WAVE CIRCUIT, CAPACITOR-INPUT FILTER

(Page 5)

This shows the typical operating curves for such a circuit and by means of the boundary lines "ADK" the limiting current and voltage relationships presented on the Rating Chart.

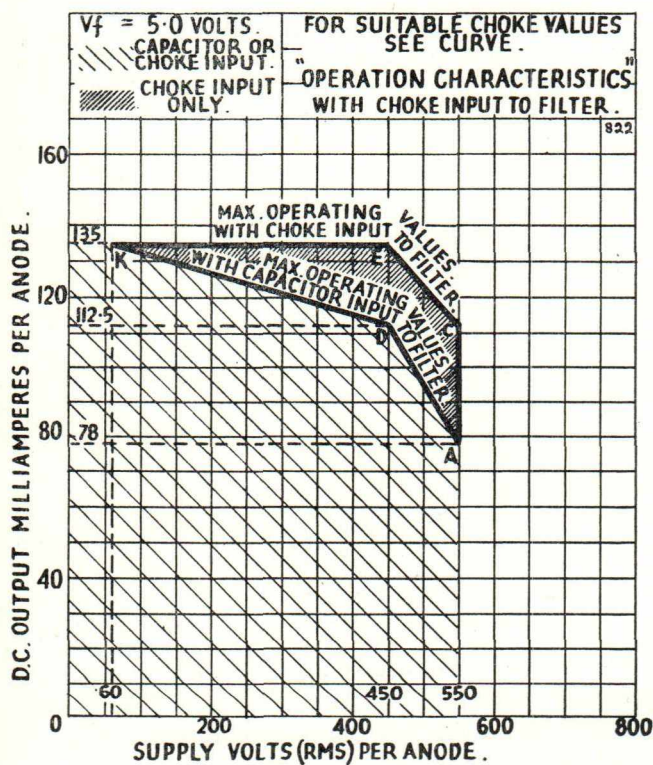
FULL-WAVE CIRCUIT, CHOK-INPUT FILTER

(Page 6)

This shows the typical operating curves for such a circuit and by means of the boundary lines "CEK" the limiting current and voltage relationships presented on the Rating Chart, together with information as to the effects on regulation of various sizes of chokes. The inter-section of one of the long-dash lines with a continuous-line curve indicates the point on the curve at which the choke behaves as though it had infinite inductance. To the left of the choke boundary line the regulation curves depart from the solid line curves as shown by the representative short-dash regulation curves.



RATING CHART

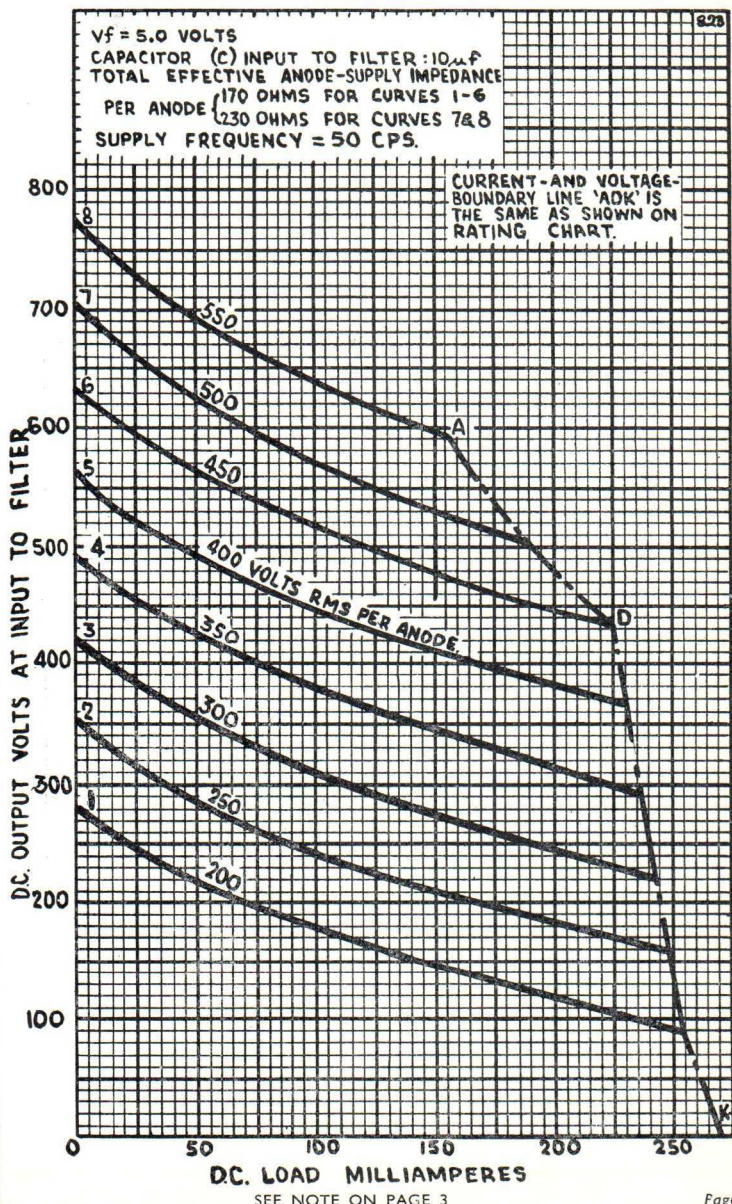


SEE NOTE ON PAGE 3



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OPERATION CHARACTERISTICS FULL-WAVE CIRCUIT, CAPACITOR-INPUT FILTER



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OPERATION CHARACTERISTICS

FULL-WAVE CIRCUIT, CHOKE-INPUT FILTER

