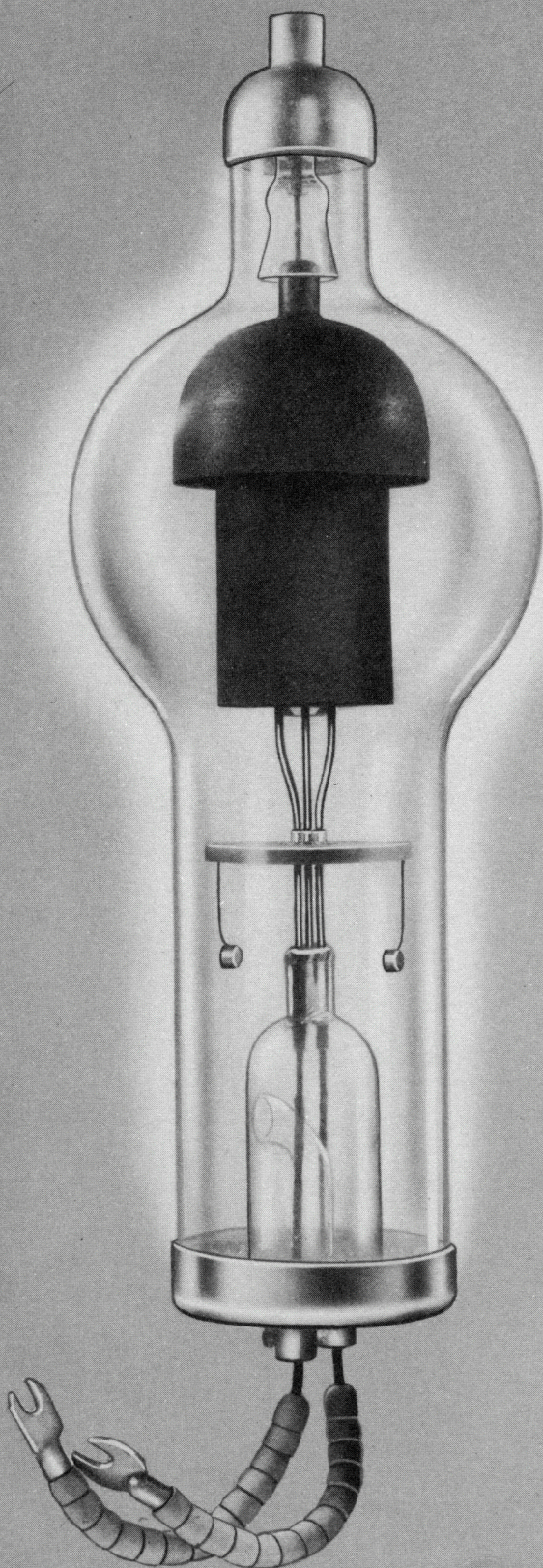


# FEDERAL MERCURY VAPOR Half-Wave Rectifier Type F-857-B



## GENERAL DATA

### DESCRIPTION:

Federal's F-857-B is a mercury vapor, half-wave rectifier for use in high-voltage rectifier circuits.

### Electrical:

▶ Filament Voltage	5 Volts
▶ Filament Current	30 Amperes
▶ Cathode Heating Time Required	60 Seconds
▶ Anode Voltage Drop	15 Volts
▶ Critical Anode Voltage	100 Volts

### Mechanical

▶ Type of Cooling—Convection or Forced Air	
▶ Equilibrium Condensed Mercury Temperature Rise Over Ambient	
No Load—Approx.	11.5 Centigrade
Full Load—Approx.	15 Centigrade
▶ Mounting Position—Vertical, Base Down	
▶ Net Weight, Maximum	3.8 Pounds

### Maximum Ratings, Absolute Values:

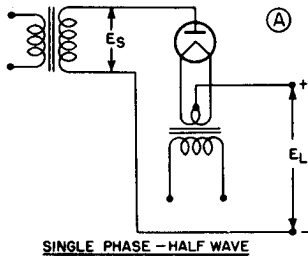
Maximum Peak Inverse Anode Voltage	10,000	22,000 Volts
Condensed Mercury Temperature Limits 25 to 60		30 to 40 Centigrade
Max. Cathode Current		
Peak	40	40 Amperes
Average	10	10 Amperes
Surge (maximum duration 0.2 sec.)	400	400 Amperes
Max. Averaging Time	30	30 Seconds
Max. Frequency	150	150 Cycles/sec.

# FEDERAL MERCURY VAPOR Half-Wave Rectifier Type F-857-B

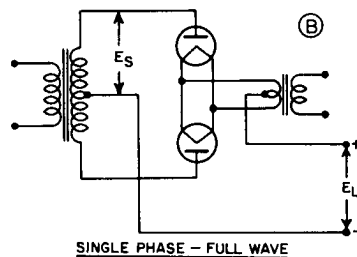


To the complete satisfaction of the user, Federal tubes are doing the work they were designed to do, doing it longer, better, more economically.

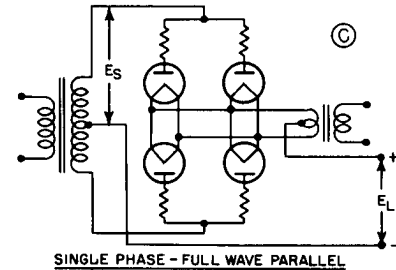
## TYPICAL RECTIFIER CIRCUITS



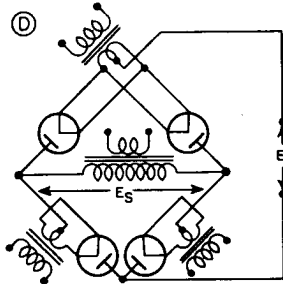
SINGLE PHASE - HALF WAVE



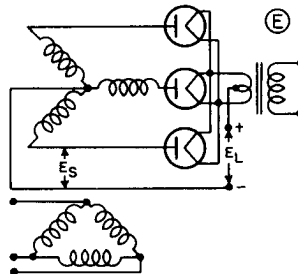
SINGLE PHASE - FULL WAVE



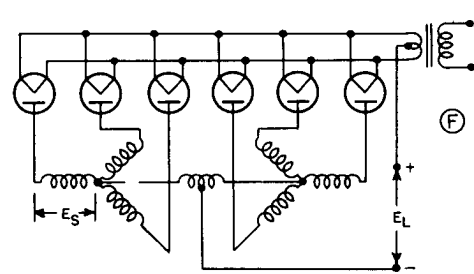
SINGLE PHASE - FULL WAVE PARALLEL



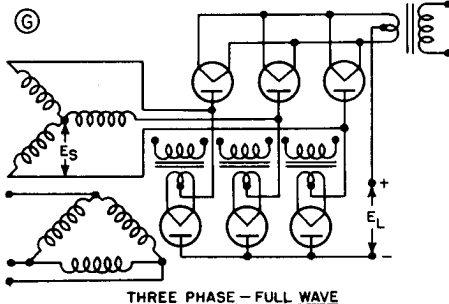
SINGLE PHASE - FULL WAVE BRIDGE



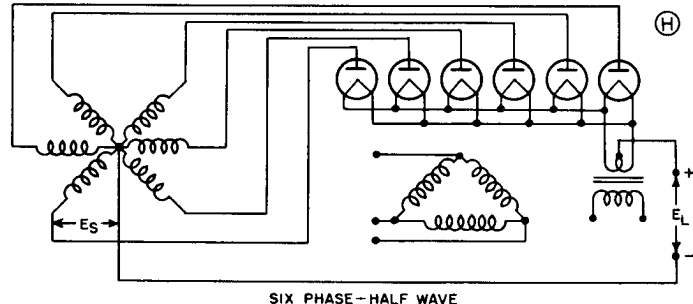
THREE PHASE - HALF WAVE



DOUBLE THREE PHASE - HALF WAVE



THREE PHASE - FULL WAVE



SIX PHASE - HALF WAVE

## TYPICAL OPERATION FOR MAXIMUM OUTPUT\*

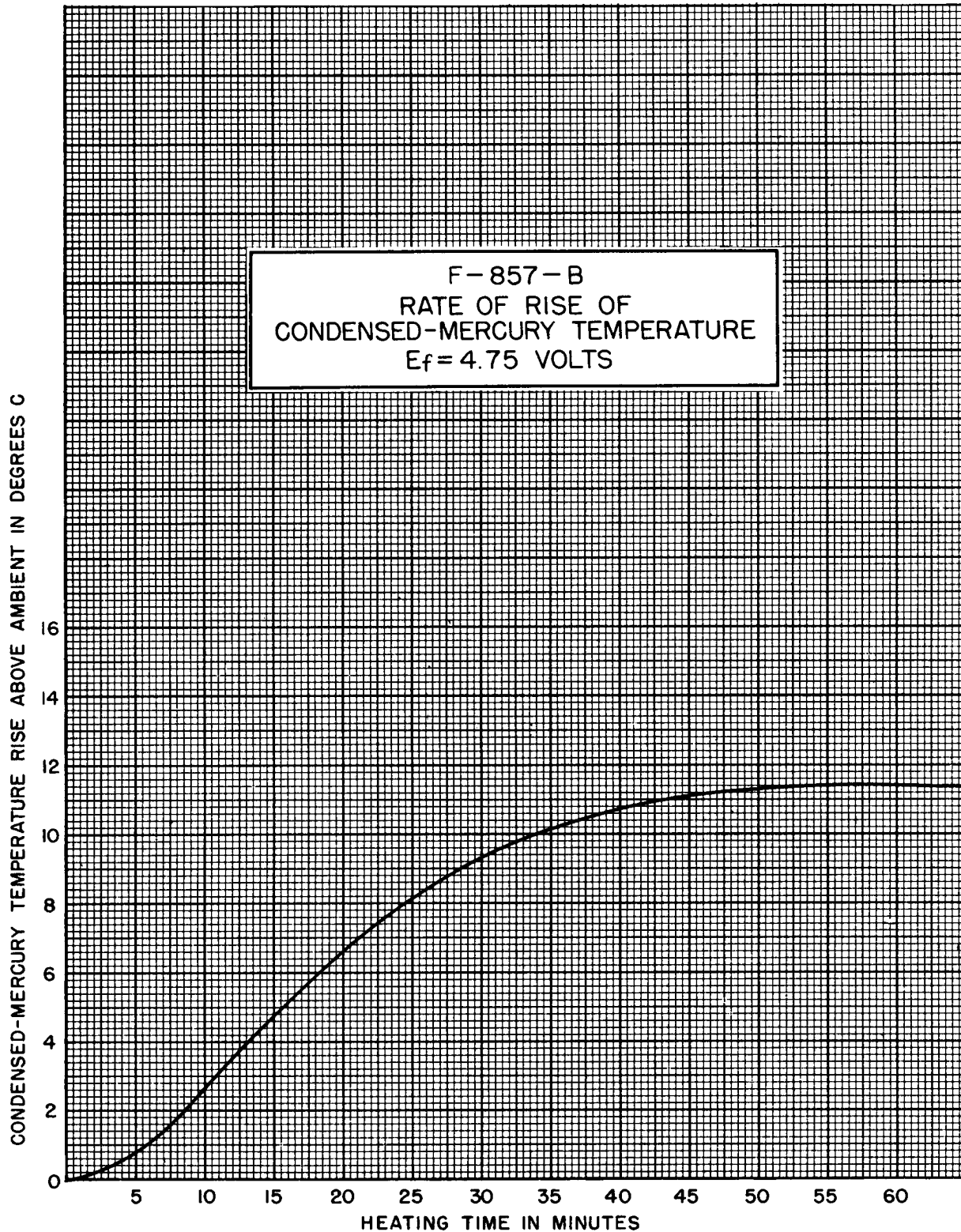
Circuit	R.M.S Trans. Sec. Volt. ( $E_s$ )	DC Voltage to Filter ( $E_L$ )	Max. DC Load Current
A	15,500	7,000	10
B	7,750	7,000	20
C	7,750	7,000	40
D	15,500	14,000	20
E	9,000	10,500	30
F	9,000	10,500	60
G	9,000	21,000	30
H	7,750	10,500	60

\*For sine wave input and choke input filter to maintain output current substantially constant.



Tube performance is the yardstick by which most Federal customers measure the extent of their satisfaction. It is significant, that they are all "old" customers.

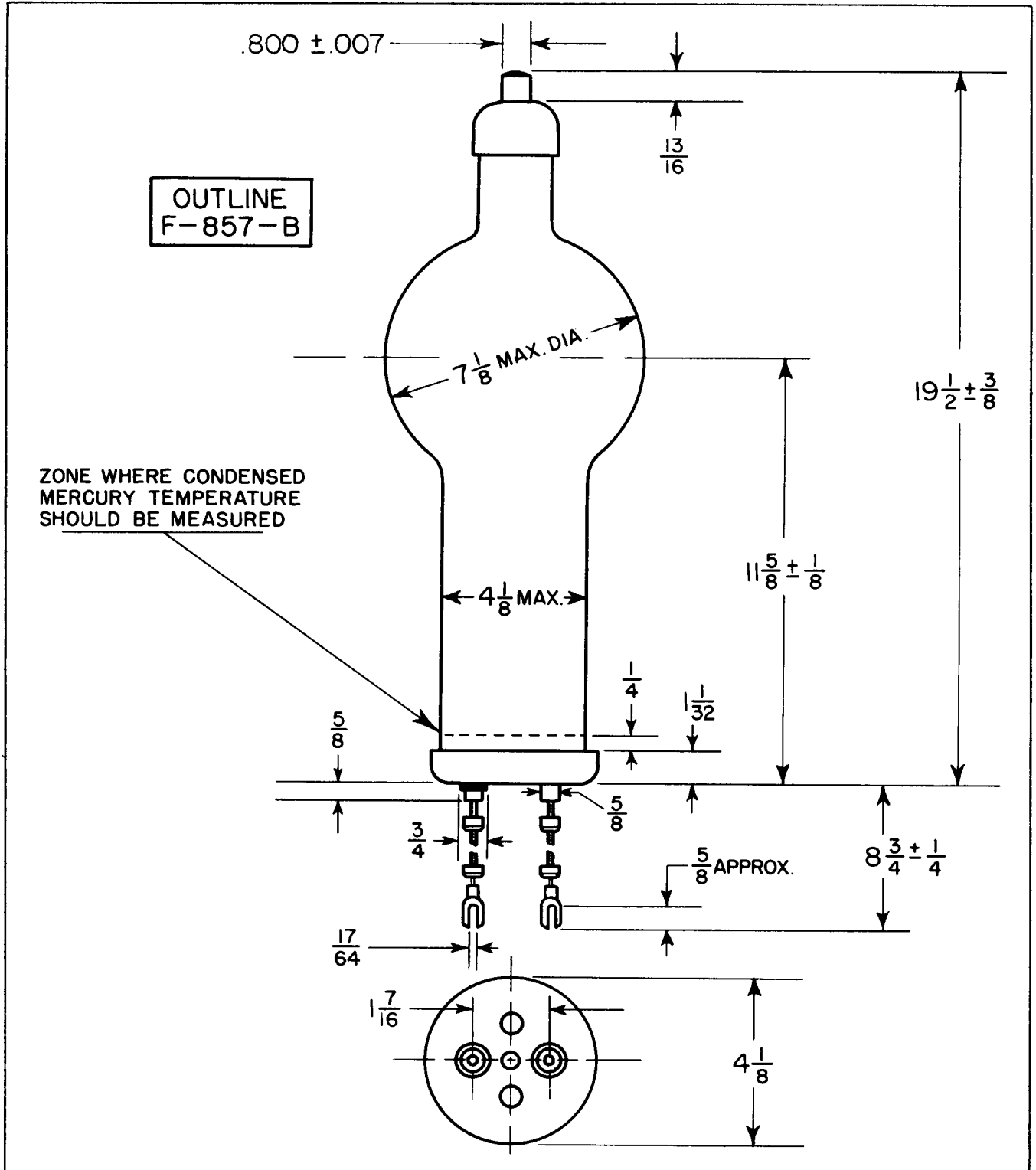
# FEDERAL MERCURY VAPOR Half-Wave Rectifier Type F-857-B



# FEDERAL MERCURY VAPOR Half-Wave Rectifier Type F-857-B



Authentic designs, finer materials, improved manufacturing processes, and an experienced personnel . . . these are the factors which tell why Federal always has made better tubes.



Form FJ-188 Printed in U. S. A.



*Federal Telephone and Radio Corporation*

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