

# —Standard Valves—

4307-A Valve.  
-AF Valve.

## 4307-A AND -AF VALVES

### PENTODES.

The 4307-AF Valve is identical to the 4307-A Valve and the -F code indicates that the valve has passed special tests for use in Standard Aircraft Radio.

### SPECIFICATION.

#### Cathode.

Oxide coated filament.  
Constant voltage type.

#### Base.

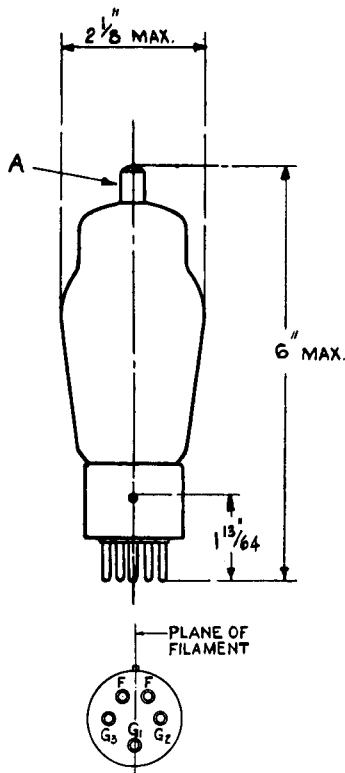
American medium 5-pin.  
Anode connected to top cap type B.

#### Dimensions.

Max. overall length 6" (15.3 cms.)  
Max. Diameter  $2\frac{1}{8}$ " (5.4 cms.)  
Net weight 0.16 lbs. (75 gms.)

#### Constants.

Filament voltage 5.5 volts  
Nominal filament current 1.0 amps.  
Grid-anode capacity 0.55  $\mu\text{F}$ .  
Input capacity 15  $\mu\text{F}$ .  
Output capacity 12  $\mu\text{F}$ .



### LIMITING CONDITIONS FOR SAFE OPERATION.

|                                                                          | Class A<br>Amplifier | Class C<br>Amplifier<br>or<br>Oscillator | Class B or<br>Suppressor Mod-<br>ulated Class C<br>Amplifier |
|--------------------------------------------------------------------------|----------------------|------------------------------------------|--------------------------------------------------------------|
| Maximum direct anode voltage                                             | 500                  | 500                                      | 500 volts                                                    |
| Maximum direct screen-grid voltage                                       | 300                  | 250                                      | 250 volts                                                    |
| Maximum direct anode current                                             | 60                   | 60                                       | 45 mA.                                                       |
| Maximum direct screen-grid current                                       | 25                   | 25                                       | 25 mA.                                                       |
| Maximum direct control-grid current                                      | —                    | 7                                        | 7 mA.                                                        |
| Maximum anode dissipation                                                | 15                   | 15                                       | 15 watts                                                     |
| Maximum screen-grid dissipation                                          | 6                    | 6                                        | 6 watts                                                      |
| Maximum instantaneous control-grid<br>voltage on positive swing of input | —                    | +30                                      | +30 volts                                                    |

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## TYPICAL OPERATING CONDITIONS.

| Anode voltage | Screen Grid voltage | Sup-pressor voltage | Control grid bias | Anode current | Screen grid current | Load resistance | Maximum power output | Maximum second harmonic |
|---------------|---------------------|---------------------|-------------------|---------------|---------------------|-----------------|----------------------|-------------------------|
| volts         | volts               | volts               | volts             | mA.           | mA.                 | ohms            | watts                | db                      |
| 200           | 200                 | 0                   | —15               | 36.5          | 3.4                 | 4,000           | 2.9                  | 23.5                    |
| 250           | 250                 | 0                   | —20               | 50            | 4.0                 | 4,000           | 5.7                  | 24                      |
| 300           | *300                | 0                   | —30               | 43            | 2.6                 | 4,500           | 9.1                  | 21                      |

\* Maximum operating condition.

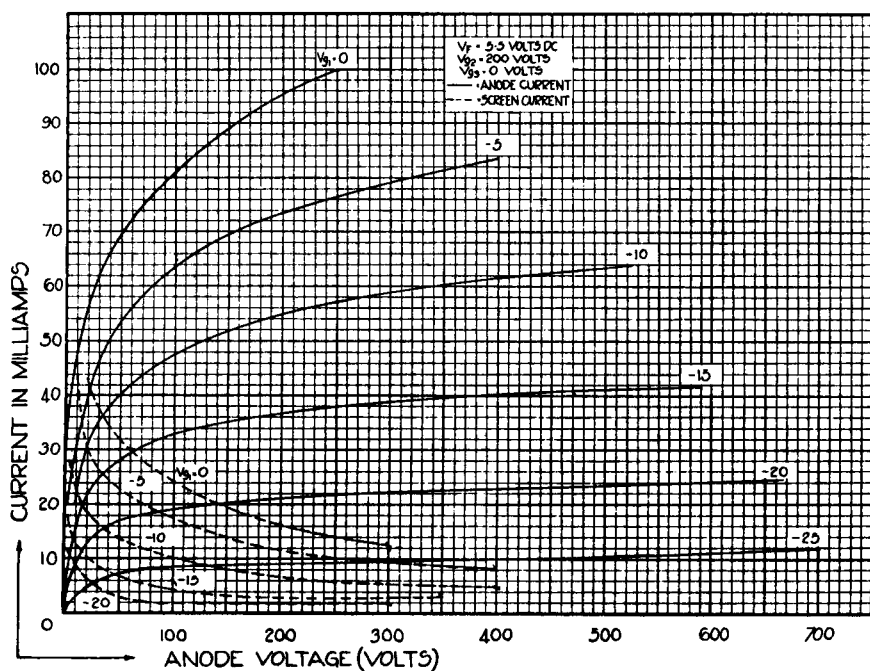
| Class C Telephony.<br>Suppressor modulated R.F. Amp. |                  |
|------------------------------------------------------|------------------|
| Direct anode voltage                                 | 500 volts        |
| Direct screen-grid voltage (approx.)                 | 200 volts        |
| Screen-grid circuit resistance                       | 14,000 ohms      |
| Total control-grid bias (approx.)                    | —35 volts        |
| Control-grid circuit resistance                      | 10,000 ohms      |
| Fixed control-grid bias                              | —20 volts        |
| Suppressor-grid bias                                 | —50 volts        |
| R-F control-grid voltage                             | 50 peak volts    |
| Direct anode current                                 | 40 milliamperes  |
| Direct screen-grid current                           | 20 milliamperes  |
| Direct control-grid current                          | 1.5 milliamperes |
| A-F suppressor-grid voltage                          | 50 peak volts    |
| Effective load resistance                            | 4,000 ohms       |
| Carrier power output                                 | 6 watts          |
| Power output on A-F peaks                            | 24 watts         |

| Class C Telegraphy<br>Osc. or RF amp. unmodulated. |        |               |
|----------------------------------------------------|--------|---------------|
| Direct anode voltage                               | 500    | 500 volts     |
| Direct screen-grid voltage (approx.)               | 250    | 250 volts     |
| Screen-grid circuit resistance                     | 20,000 | 20,000 ohms   |
| Total control-grid bias (approx.)                  | —35    | —35 volts     |
| Control-grid circuit resistance                    | 10,000 | 10,000 ohms   |
| Fixed control-grid bias                            | —20    | —20 volts     |
| Suppressor-grid bias                               | 0      | 0 volts       |
| R-F control-grid voltage                           | 50     | 50 peak volts |
| Direct anode-current                               | 45     | 60 mA.        |
| Direct screen-grid current                         | 12     | 13 mA.        |
| Direct control-grid current                        | 1.3    | 1.4 mA.       |
| A-F suppressor-grid voltage                        | 0      | 0 peak volts  |
| Effective load resistance                          | 6,500  | 5,000 ohms    |
| Carrier power output                               | 15     | 20 watts      |

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| High Frequency Ratings                                                                                     |               |                  |
|------------------------------------------------------------------------------------------------------------|---------------|------------------|
|                                                                                                            | 40 megacycles | 70 megacycles    |
| Maximum direct anode voltage                                                                               | 500           | 300 volts        |
| Maximum direct anode current—<br>For class C telegraphy (intermittent)<br>For all other classes of service | 60<br>45      | 45 mA.<br>45 mA. |



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