



**RADIO MANUFACTURERS ASSOCIATION**  
**ENGINEERING DEPARTMENT**

Release No. 435

September 10, 1945

sponsor:  
Lewis Electronics

TYPE 3D23

MULTI-ELECTRODE HIGH VACUUM TUBE

**GENERAL CHARACTERISTICS**

**ELECTRICAL**

(a) Filament - Thoriated Tungsten

Voltage - 6.3 Vac  
Current - 3.0 amps

Average Characteristics at  $E_b=1500$  Vdc;  $I_b=75$  ma;  
 $E_{c2}=300$  Vdc;  $E_f=6.3$  Vac;  $E_{c1}=-20$  Vdc

Amplification Factor - 65

Grid-Plate Transconductance - 2750 Micromhos

(b) Direct Interelectrode Capacitances, not yet determined

Frequency for Maximum Ratings - Not yet determined.

**MECHANICAL**

Type of cooling  
Convection (Maximum Ambient 60C)

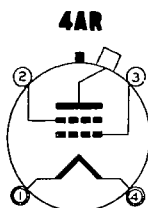
(c) Base Description - Medium 4-pin ceramic

Maximum Overall Dimensions

Length - 5 inches  
Diameter - 1.57 inches

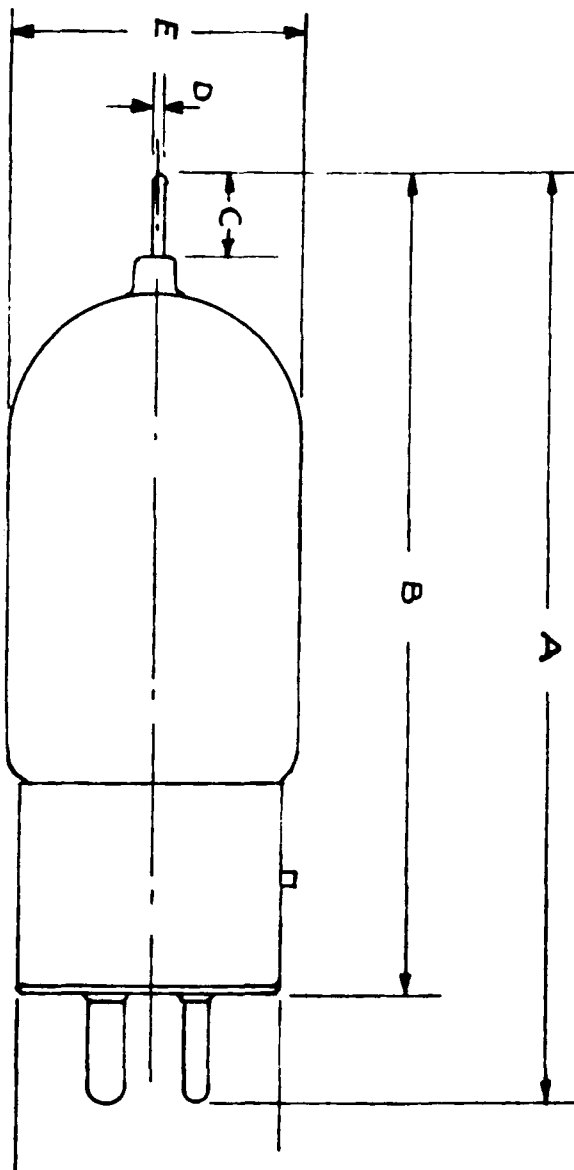
Basing Designation

4AR



September 10, 1945

RMA TYPE 3D23



|   | MIN   | MAX.  |
|---|-------|-------|
| A | 4750  | 5.000 |
| B | 4150  | 4400  |
| C | 0.312 |       |
| D | 0.055 | 0.061 |
| E |       | 1.562 |

### CLASS B RADIO-FREQUENCY POWER AMPLIFIER

(Carrier Conditions Per Tube for use with a Max. Modulation Factor of 1.0)

|                                                   | <u>Typical Operation</u> | <u>Max. Ratings</u> |
|---------------------------------------------------|--------------------------|---------------------|
| D-c Plate Voltage                                 | 1500 volts               | 2000 volts          |
| D-c Grid Voltage (Grid #1)                        | 120 volts                |                     |
| D-c Grid Voltage (Grid #2, etc)                   | 375 volts                | 400 volts           |
| D-c Plate Current                                 | 45 ma                    | 50 ma               |
| Plate Input                                       |                          | 100 watts           |
| Screen Input                                      |                          | 8 watts             |
| Plate Dissipation                                 |                          | 35 watts            |
| Peak R-F Grid Input Voltage                       | 280 volts                |                     |
| D-c Grid Current, Approx.                         | 2 ma                     |                     |
| D-c Screen Current                                | 6 ma                     |                     |
| Driving Power, approx.<br>(at crest of A-F cycle) | 4.5 watts                |                     |
| Plate Power Output                                | 35 watts                 |                     |

### CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR, PLATE MODULATED

(Carrier Conditions Per Tube for use with a Maximum Modulation Factor of 1.0)

|                                 | <u>Typical Operation</u> | <u>Max. Ratings</u> |
|---------------------------------|--------------------------|---------------------|
| D-c Plate Voltage               | 1000 volts               | 1250 volts          |
| D-c Grid Voltage (Grid #1)      | 200 volts                | 250 volts           |
| D-c Grid Voltage (Grid #2) etc. | 300 volts                | 350 volts           |
| D-c Plate Current               | 85 ma                    | 100 ma              |
| D-c Grid Current                | 10 ma                    | 20 ma               |
| D-c Screen Current              | 14 ma                    |                     |
| Plate Input                     |                          | 125 watts           |
| Screen Input                    |                          | 8 watts             |
| Plate Dissipation               |                          | 35 watts            |
| Peak R-F Grid Input Voltage     | 250 volts                |                     |
| Driving Power                   | 2 watts                  |                     |
| Plate Power Output              | 60 watts                 |                     |

### CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR

(Key down conditions per tube without modulation. Modulation, essentially negative, may be used if positive peak of A-F envelope does not exceed 115% of carrier conditions.)

|                                                | <u>Typical Operation</u> | <u>Max. Ratings</u>                    |
|------------------------------------------------|--------------------------|----------------------------------------|
| D-C Plate Voltage                              | 1500 volts               | 2000 volts                             |
| D-c Grid Voltage (Grid #1)                     | 300 volts                | 350 volts                              |
| D-c Grid Voltage (Grid #2)                     | 375 volts                | 400 volts                              |
| D-c Plate Current                              | 110 ma                   | 125 ma                                 |
| D-c Grid Current, approx                       | 15 ma                    | 20 ma                                  |
| D-c Screen Current                             | 22 ma                    |                                        |
| Plate input                                    |                          | <sup>175</sup><br><del>125</del> watts |
| Screen Input                                   |                          | 8 watts                                |
| Plate Dissipation                              |                          | 35 watts                               |
| Peak R-F Grid Input Voltage<br>(Approximately) | 350 volts                |                                        |
| Driving Power, Approx.                         | 4.5 watts                |                                        |
| Plate Power Output                             | 130 watts                |                                        |