



# Triode

3C/270A  
(4212E)

4212E

## CATHODE.

Thoriated tungsten filament

|                 |     |   |
|-----------------|-----|---|
| Voltage         | 14  | V |
| Nominal current | 6.2 | A |
| Peak emission   | 4.5 | A |

## RATING.

|                      |                                        |       |      |
|----------------------|----------------------------------------|-------|------|
| Amplification factor | Measured at<br>$V_a$ 2,000V $V_g$ -90V | 16    | ohms |
| Impedance            |                                        | 1,900 |      |

## DIRECT INTER-ELECTRODE CAPACITIES.

|                   |      |    |
|-------------------|------|----|
| Grid to anode     | 19   | pF |
| Grid to filament  | 14.8 | pF |
| Anode to filament | 8.5  | pF |

## DIMENSIONS.

|                |                     |     |
|----------------|---------------------|-----|
| Overall length | 352                 | mm. |
| Max. diameter  | 93                  | mm. |
| Base           | Giant 4-pin bayonet |     |
| Net weight     | 750                 | g.  |

## MAXIMUM RATINGS.

|                                                    |       |      |
|----------------------------------------------------|-------|------|
| Maximum direct anode voltage                       | 3,000 | V    |
| Maximum direct anode current                       | 350   | mA   |
| Maximum direct grid current                        | 75    | mA   |
| Maximum anode dissipation                          | 275   | W    |
| Maximum freq. for above ratings                    | 1.5   | Mc/s |
| Maximum anode voltage for frequency of<br>4.5 Mc/s | 1,000 | V    |

This valve may be supplied in either one of the four impedance groups :

|                           |                                        |
|---------------------------|----------------------------------------|
| Group 1. $I_a$ 110-129 mA | Measured at $V_a$ 1,500V<br>$V_g$ -68V |
| 2. $I_a$ 130-148 mA       |                                        |
| 3. $I_a$ 149-167 mA       |                                        |
| 4. $I_a$ 168-185 mA       |                                        |

It is recommended that the valve be operated in a vertical position. When operated horizontally the plane of the filament must be vertical. Free circulation of air must be provided to ensure adequate cooling of the glass during operation.



## TYPICAL OPERATING CONDITIONS

### AUDIO FREQUENCY

#### Class A Power Amplifier or Modulator.

|                      |       |                 |
|----------------------|-------|-----------------|
| Direct anode voltage | 1,500 | 1,250 V         |
| Grid bias            | —57   | —40 V           |
| Direct anode current | 0.170 | 0.200 A         |
| Load resistance      | 5,000 | 3,000 $\Omega$  |
| Undistorted output   | 50    | 40 W<br>approx. |

#### Class B Power Amplifier or Modulator. (For balanced 2-valve operation.)

|                                               |       |                  |
|-----------------------------------------------|-------|------------------|
| Direct anode voltage                          | 2,500 | 1,500 V          |
| Grid bias                                     | —145  | —80 V            |
| Direct anode current per valve—zero<br>signal | 50    | 60 mA            |
| Direct anode current per valve max.<br>signal | 300   | 350 mA           |
| Peak A.F. grid to grid drive voltage          | 420   | 300 V            |
| *Direct grid current                          | 13.5  | 38 mA<br>approx. |
| Load resistance anode to anode                | 9,100 | 4,600 $\Omega$   |
| *Grid driving power per valve                 | 3     | 6 W<br>approx.   |
| Recommended grid driving power                | 50    | 50 W             |
| Power output                                  | 960   | 660 W            |



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## RADIO FREQUENCY

### Class B Telephony. Modulated carrier applied to grid.

(Carrier conditions per valve for use with 100% modulation.)

|                        |       |                  |
|------------------------|-------|------------------|
| Direct anode voltage   | 2,000 | 1,500 V          |
| Grid bias              | —125  | —90 V            |
| Direct anode current   | 0.200 | 0.275 A          |
| Peak R.F. grid voltage | 110   | 110 V            |
| *Direct grid current   | 0     | 34 mA<br>approx. |
| Power output           | 130   | 130 W            |

### Class C Power Amplifier. Anode subject to modulation.

(Carrier conditions per valve for use with 100% modulation.)

|                        |       |                  |
|------------------------|-------|------------------|
| Direct anode voltage   | 2,000 | 1,500 V          |
| Grid bias              | —240  | —215 V           |
| Direct anode current   | 0.300 | 0.300 A          |
| Peak R.F. grid voltage | 330   | 315 V            |
| *Direct grid current   | 15    | 22 mA<br>approx. |
| Power output           | 420   | 300 W            |

### Class C Power Amplifier or Oscillator, unmodulated.

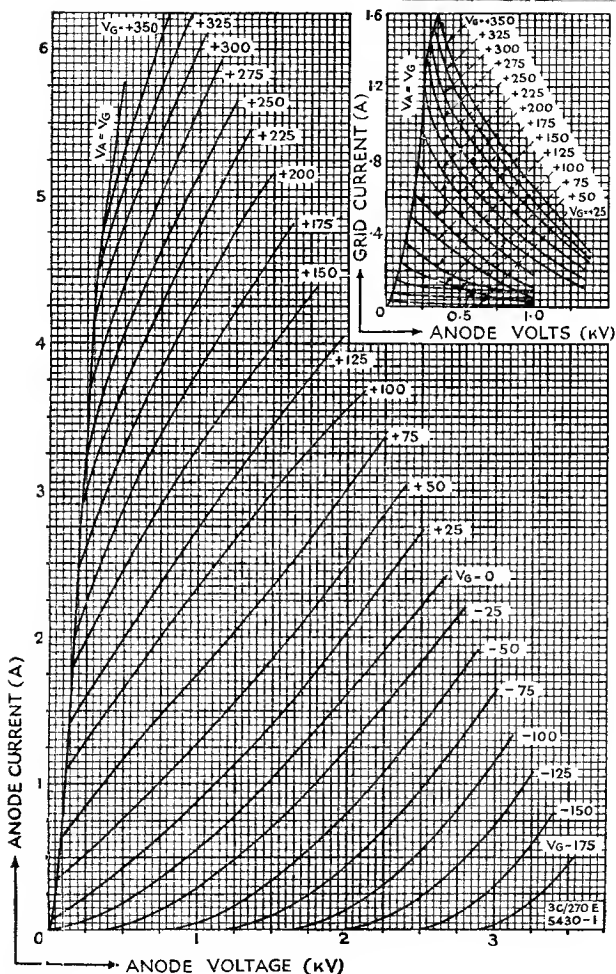
|                        |       |                  |
|------------------------|-------|------------------|
| Direct anode voltage   | 3,000 | 2,000 V          |
| Grid bias              | —250  | —180 V           |
| Direct anode current   | 0.250 | 0.300 A          |
| Peak R.F. grid voltage | 345   | 272 V            |
| *Direct grid current   | 15    | 22 mA<br>approx. |
| *Driving power         | 5     | 6 W<br>approx.   |
| Power output           | 550   | 440 W            |

\* Subject to wide variation, depending upon the impedance of the load circuit.

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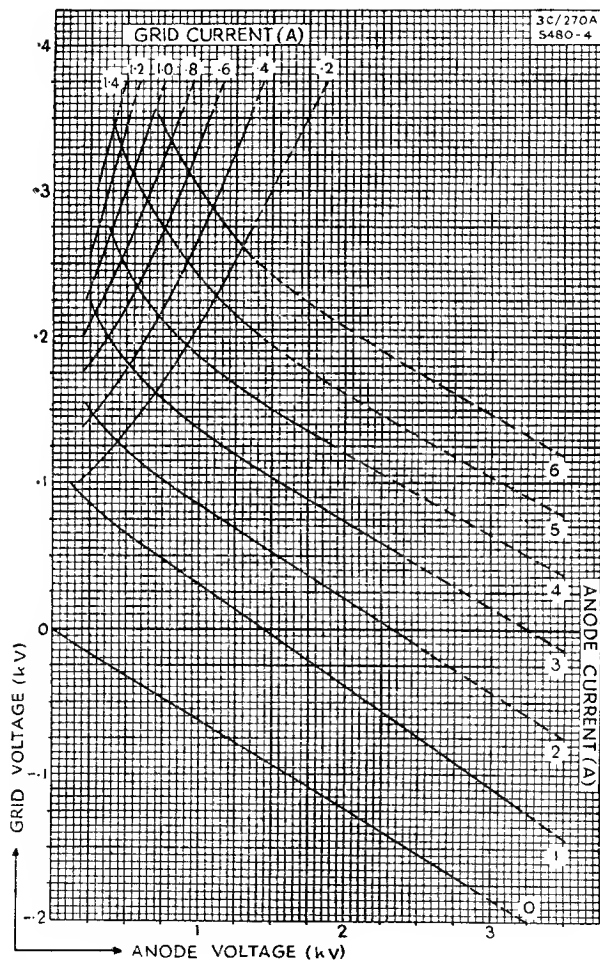




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