

ELECTRONIC TUBE REFERENCE

# 6BQ7A

Voltage - Dual Triode (similar high frequency) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

TRIODE-TRIODE

Twin triode intended specifically for VHF cascode amplification, widely suited to television tuner RF front ends and related high-frequency amplifier circuits.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | 9AJ               | BASE PINS            | 9             |
| NOMINAL HEATER      | 6.3 V / 400 mA    | PARALLEL HEATER      | – / –         |
| HEATING             | Indirect          | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

## 9AJ - TERMINAL PINOUT

| TERMINAL   | SECTION | ELEMENT              | STATUS    |
|------------|---------|----------------------|-----------|
| PIN1 – 2P  | B       | P – Plate (Anode)    | CONNECTED |
| PIN2 – 2G1 | B       | G1 – Control Grid    | CONNECTED |
| PIN3 – 2K  | B       | K – Cathode          | CONNECTED |
| PIN4 – H   | –       | H – Heater           | CONNECTED |
| PIN5 – H   | –       | H – Heater           | CONNECTED |
| PIN6 – 1P  | A       | P – Plate (Anode)    | CONNECTED |
| PIN7 – 1G1 | A       | G1 – Control Grid    | CONNECTED |
| PIN8 – 1K  | A       | K – Cathode          | CONNECTED |
| PIN9 – IS  | A       | IS – Internal Screen | CONNECTED |

## SECTION RATINGS

| SECTION1 Triode                          |               |
|------------------------------------------|---------------|
| PLATE RESISTANCE                         | 6100 $\Omega$ |
| TRANSCONDUCTANCE                         | 0.0064 S      |
| AMPLIFICATION FACTOR                     | 39            |
| MAXIMUM PLATE VOLTAGE                    | 250 V         |
| MAXIMUM PLATE DISSIPATION                | 2 W           |
| MAXIMUM CATHODE CURRENT                  | 20 mA         |
| <i>Each section; representative row.</i> |               |

| SECTION2 Triode                                                              |               |
|------------------------------------------------------------------------------|---------------|
| PLATE RESISTANCE                                                             | 7700 $\Omega$ |
| TRANSCONDUCTANCE                                                             | 0.006 S       |
| AMPLIFICATION FACTOR                                                         | 38            |
| MAXIMUM PLATE VOLTAGE                                                        | 250 V         |
| MAXIMUM PLATE DISSIPATION                                                    | 2 W           |
| MAXIMUM CATHODE CURRENT                                                      | 20 mA         |
| <i>High-frequency twin triode for VHF cascode and grounded-grid service.</i> |               |

Indirectly heated dual triode intended for VHF cascode amplification.



## SOURCE OPERATING CONDITIONS

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# 1958 Brimar Radio Valve No 7

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1958 BRIMAR RADIO VALVE NO 7

## Section 1 · Triode

| CHARACTERISTIC |                       |                  |
|----------------|-----------------------|------------------|
| PARAMETER      | PUBLISHED VALUE       | CONDITION / NOTE |
| Heater Voltage | 6.3 V                 | —                |
| Heater Current | 400 mA                | —                |
| Application    | VHF cascode amplifier | —                |



## SOURCE OPERATING CONDITIONS

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# 195X General Electric Essential Characteristics

Published test conditions and operating points. Values on this page are preserved as reported by this source.

195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

## Section 1 · Triode

| OTHER         |                 |                  |
|---------------|-----------------|------------------|
| PARAMETER     | PUBLISHED VALUE | CONDITION / NOTE |
| Plate voltage | 150 V           | ClassA           |

| CHARACTERISTIC       |                    |                  |
|----------------------|--------------------|------------------|
| PARAMETER            | PUBLISHED VALUE    | CONDITION / NOTE |
| Plate resistance     | 6100 $\Omega$      | ClassA           |
| Transconductance     | 6400 $\mu\text{S}$ | ClassA           |
| Amplification factor | 39                 | ClassA           |



## SOURCE OPERATING CONDITIONS

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# 1961 Tung Sol

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1961 TUNG SOL

## Section 1 · Triode

**OTHER**

| PARAMETER     | PUBLISHED VALUE | CONDITION / NOTE                         |
|---------------|-----------------|------------------------------------------|
| Plate Voltage | 150 V           | Published operating/characteristic table |
| Grid Voltage  | -2 V            | Published operating/characteristic table |

**CHARACTERISTIC**

| PARAMETER        | PUBLISHED VALUE | CONDITION / NOTE                         |
|------------------|-----------------|------------------------------------------|
| Plate Current    | 9 mA            | Published operating/characteristic table |
| Transconductance | 0 uS            | Published operating/characteristic table |
| Plate Resistance | 6100 ohm        | Published operating/characteristic table |



## SOURCE OPERATING CONDITIONS

# 1965 Sylvania Electronic Tubes Vol3

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1965 SYLVANIA ELECTRONIC TUBES VOL3

## Section 1 · Triode

**CHARACTERISTICS**

| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE |
|----------------------|-----------------|------------------|
| Heater voltage       | 6.3 V           | —                |
| Heater current       | 400 mA          | —                |
| Plate resistance     | 7700 ohm        | —                |
| Transconductance     | 6000 uS         | —                |
| Amplification factor | 38              | —                |

| OTHER                     |                 |                  |
|---------------------------|-----------------|------------------|
| PARAMETER                 | PUBLISHED VALUE | CONDITION / NOTE |
| Maximum plate voltage     | 250 V           | —                |
| Maximum cathode current   | 20 mA           | —                |
| Maximum plate dissipation | 2 W             | —                |

| CAPACITANCE                  |                 |                  |
|------------------------------|-----------------|------------------|
| PARAMETER                    | PUBLISHED VALUE | CONDITION / NOTE |
| Grid-to-plate capacitance    | 1.15 pF         | —                |
| Plate-to-cathode capacitance | 0.15 pF         | —                |

1965 SYLVANIA ELECTRONIC TUBES VOL3

## Section 2 · Triode

| CHARACTERISTICS      |                 |                  |
|----------------------|-----------------|------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE |
| Heater voltage       | 6.3 V           | —                |
| Heater current       | 400 mA          | —                |
| Plate resistance     | 7700 ohm        | —                |
| Transconductance     | 6000 uS         | —                |
| Amplification factor | 38              | —                |

| OTHER                     |                 |                  |
|---------------------------|-----------------|------------------|
| PARAMETER                 | PUBLISHED VALUE | CONDITION / NOTE |
| Maximum plate voltage     | 250 V           | —                |
| Maximum cathode current   | 20 mA           | —                |
| Maximum plate dissipation | 2 W             | —                |

| CAPACITANCE                  |                 |                  |
|------------------------------|-----------------|------------------|
| PARAMETER                    | PUBLISHED VALUE | CONDITION / NOTE |
| Grid-to-plate capacitance    | 1.15 pF         | —                |
| Plate-to-cathode capacitance | 0.15 pF         | —                |



SOURCE DATA APPENDIX

# 1966 Tung Sol Electronic Tubes 1 of 4

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1966 TUNG SOL ELECTRONIC TUBES 1 OF 4  
Section 1 · Triode

| OTHER         |                 |                  |
|---------------|-----------------|------------------|
| PARAMETER     | PUBLISHED VALUE | CONDITION / NOTE |
| Plate voltage | 150 V           | EachUnit; VHF    |
| Plate current | 9 mA            | EachUnit; VHF    |

| CHARACTERISTIC       |                 |                  |
|----------------------|-----------------|------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE |
| Amplification factor | 39              | EachUnit         |
| Plate resistance     | 6.1 k0hm        | EachUnit         |
| Transconductance     | 6400 uS         | EachUnit         |



SOURCE DATA APPENDIX

# 1968 General Electric Co

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1968 GENERAL ELECTRIC CO  
Section 1 · Triode

| OTHER                 |                 |                  |
|-----------------------|-----------------|------------------|
| PARAMETER             | PUBLISHED VALUE | CONDITION / NOTE |
| Typical Plate Voltage | 150 V           | ClassA           |
| Typical Plate Current | 9 mA            | ClassA           |



SOURCE DATA APPENDIX

# 1968 Mazda Belvu

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1968 MAZDA BELVU  
Section 1 · Triode

| OTHER                                                              |                 |                  |
|--------------------------------------------------------------------|-----------------|------------------|
| PARAMETER                                                          | PUBLISHED VALUE | CONDITION / NOTE |
| Amplificateur cascode V.H.F. 6 BQ                                  | 7 A             | —                |
| Heater voltage<br>.....rrsrmererrereeremensensnnnnnnnnnsne0<br>V   | 6.3 V           | —                |
| Heater current .....<br>meersermerceneenenenssmnmnnennMnÜ IĖ       | 400 mA          | —                |
| Tension d'ANOd@ .....+...<br>ererserrerserecacesrrrerececececem VA | 250 V           | —                |
| Cathode current... s0 1K                                           | 20 mA           | —                |
| Tension de crête entre filament et cathode ...<br>Vfker            | 200 V           | —                |
| Tension d'Anode .....<br>rerseenenecsenmenenenensansüs Va          | 150 V           | —                |
| Plate current ... . Ia                                             | 9 mA            | —                |
| Re51st ance de cathode ... Rk                                      | 220 Ω           | —                |
| Résistarnce Interne .....<br>uusmiceneenenmmnnnnnnnnnnnnnn p       | 5900 Ω          | —                |
| Transconductance ..... .8                                          | 6.4 mA/V        | —                |
| d'anode de 100 Â ... seserececsereenmennnnns<br>VEbl               | -6.5 V          | —                |
| bloqué, cette tension peut atteindre                               | 300 V           | —                |

| CHARACTERISTIC                                |                 |                           |
|-----------------------------------------------|-----------------|---------------------------|
| PARAMETER                                     | PUBLISHED VALUE | CONDITION / NOTE          |
| Capacitance grille/anode .....<br>Cg/a 1,15   | 1.15 pF         | InterelectrodeCapacitance |
| Capacitance d'entrée (cucult<br>cascode) Ce   | 4.95 pF         | InterelectrodeCapacitance |
| Capacitance de sortie<br>(clrcult cascode) Cs | 2.27 pF         | InterelectrodeCapacitance |
|                                               |                 |                           |

| PARAMETER                                        | PUBLISHED VALUE | CONDITION / NOTE          |
|--------------------------------------------------|-----------------|---------------------------|
| Capacitance filament/<br>cathode ..... Cf/k 2,65 | 2.7 pF          | InterelectrodeCapacitance |
| 6BQ                                              | 7 A             | InterelectrodeCapacitance |



## SOURCE OPERATING CONDITIONS

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# 1971 RCA HB3 Binder 4 of 7

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1971 RCA HB3 BINDER 4 OF 7

## Section 1 · Triode

| CHARACTERISTICS                      |                 |                                                                                                  |
|--------------------------------------|-----------------|--------------------------------------------------------------------------------------------------|
| PARAMETER                            | PUBLISHED VALUE | CONDITION / NOTE                                                                                 |
| Voltage (AC or DC)                   | 63 V            | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Grid to plate – published value 1    | 1.2             | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Grid to plate – published value 2    | 1.2             | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| shield, and heater                   | 2.6             | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| shield, and heater                   | 5               | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| shield, and heater                   | 1.2             | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| shield, and heater                   | 2.2             | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Plate to cathode – published value 1 | 0.12            | Published datasheet value; multiple values represent separate source-table limits or conditions. |
|                                      |                 |                                                                                                  |

| PARAMETER                             | PUBLISHED VALUE | CONDITION / NOTE                                                                                 |
|---------------------------------------|-----------------|--------------------------------------------------------------------------------------------------|
| Plate to cathode – published value 2  | <b>0.12</b>     | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Heater to cathode – published value 1 | <b>2.6</b>      | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Heater to cathode – published value 2 | <b>2.6</b>      | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Plate Supply Voltage                  | <b>150 V</b>    | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Plate Resistance (Approx )            | <b>5900 ohm</b> | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Transconductance                      | <b>6400</b>     | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Plate Current                         | <b>9 mA</b>     | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| ,,...1 – published value 1            | <b>100 V</b>    | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| ,,...1 – published value 2            | <b>-6.5 V</b>   | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Pin 2 -Grid of – published value 1    | <b>2</b>        | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Pin 2 -Grid of – published value 2    | <b>7</b>        | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Pin 4 -Heater – published value 1     | <b>4</b>        | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Pin 4 -Heater – published value 2     | <b>9</b>        | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Pin 5 -Heater                         | <b>5</b>        | Published datasheet value; multiple values represent separate source-table limits or conditions. |
|                                       |                 |                                                                                                  |

| PARAMETER                                               | PUBLISHED VALUE | CONDITION / NOTE                                                                                 |
|---------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------|
| permissible for this voltage to be as high as 300 volts | <b>300 V</b>    | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| PLATE VOLTS=150                                         | <b>150 V</b>    | Published datasheet value; multiple values represent separate source-table limits or conditions. |

| OTHER                                     |                 |                                                                                                  |
|-------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------|
| PARAMETER                                 | PUBLISHED VALUE | CONDITION / NOTE                                                                                 |
| and grid of unit No.1 – published value 1 | <b>0 mA</b>     | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| and grid of unit No.1 – published value 2 | <b>24 mA</b>    | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| PLATE VOLTAGE                             | <b>2506 V</b>   | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| PLATE DISSIPATION                         | <b>2 mA</b>     | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| CATHODE CURRENT                           | <b>20 mA</b>    | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Heater negative with respect to cathode   | <b>2006 V</b>   | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Heater positive with respect to cathode   | <b>2004 V</b>   | Published datasheet value; multiple values represent separate source-table limits or conditions. |
| Grid-Circuit Resistance                   | <b>0.5 mA</b>   | Published datasheet value; multiple values represent separate source-table limits or conditions. |



## SOURCE OPERATING CONDITIONS

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# 1975 RCA RC30

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1975 RCA RC30

## Section 1 · Triode

| OTHER                          |                    |                                                             |
|--------------------------------|--------------------|-------------------------------------------------------------|
| PARAMETER                      | PUBLISHED VALUE    | CONDITION / NOTE                                            |
| Heater Voltage (ac/dc) 4.2 5.6 | 6.3 V              | Published in approved 6BZ7 target datasheet entry; Section1 |
| Heater Current 0.45            | 400 mA             | Published in approved 6BZ7 target datasheet entry; Section1 |
| Cathode Current                | 20 mA              | Published in approved 6BZ7 target datasheet entry; Section1 |
| Plate Dissipation              | 2 W                | Published in approved 6BZ7 target datasheet entry; Section1 |
| Plate Supply Voltage           | 150 V              | Published in approved 6BZ7 target datasheet entry; Section1 |
| Cathode-Bias Resistor          | 220 $\Omega$       | Published in approved 6BZ7 target datasheet entry; Section1 |
| Plate Resistance (Approx.)     | 5900 $\Omega$      | Published in approved 6BZ7 target datasheet entry; Section1 |
| Transconductance               | 6400 $\mu\text{S}$ | Published in approved 6BZ7 target datasheet entry; Section1 |
| Plate Current                  | 9 mA               | Published in approved 6BZ7 target datasheet entry; Section1 |
| Grid-Circuit Resistance        | 0.5 M $\Omega$     | Published in approved 6BZ7 target datasheet entry; Section1 |
| * Rating may be high as        | 300 V              | Published in approved 6BZ7 target datasheet entry; Section1 |

| CAPACITANCE                                |                 |                                                             |
|--------------------------------------------|-----------------|-------------------------------------------------------------|
| PARAMETER                                  | PUBLISHED VALUE | CONDITION / NOTE                                            |
| Grid to Plate 1.2                          | 1.2 pF          | Published in approved 6BZ7 target datasheet entry; Section1 |
| —                                          | -5 pF           | Published in approved 6BZ7 target datasheet entry; Section1 |
| Plate to Grid, Heater, and Internal Shield | 2.2 pF          | Published in approved 6BZ7 target datasheet entry; Section1 |
| Plate to Cathode 0.12                      | 0.12 pF         | Published in approved 6BZ7 target datasheet entry; Section1 |
| Heater to Cathode 2.6                      | 2.6 pF          | Published in approved 6BZ7 target datasheet entry; Section1 |
| * Rating: may be high as                   | 300 V           | Published in approved 6BZ7 target datasheet entry; Section1 |

| CHARACTERISTIC           |                 |                                                             |
|--------------------------|-----------------|-------------------------------------------------------------|
| PARAMETER                | PUBLISHED VALUE | CONDITION / NOTE                                            |
| For plate current of 100 | <b>-6.5 V</b>   | Published in approved 6BZ7 target datasheet entry; Section1 |

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