



## ELECTRONIC TUBE REFERENCE

## 6U8A

Voltage - Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

Combined triode-pentode for oscillator, mixer, frequency-converter, RF, or IF service in television, communications, or mobile receivers.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | EIA 9AE           | BASE PINS            | 9             |
| NOMINAL HEATER      | 6.3 V / 450 mA    | PARALLEL HEATER      | – / –         |
| HEATING             | Indirect          | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Dissimilar    |

## SECTION RATINGS

|                                                    |                 |
|----------------------------------------------------|-----------------|
| SECTION1 Pentode                                   |                 |
| PLATE RESISTANCE                                   | 200000 $\Omega$ |
| TRANSCONDUCTANCE                                   | 0.005 S         |
| MAXIMUM PLATE VOLTAGE                              | 330 V           |
| MAXIMUM SCREEN VOLTAGE                             | 330 V           |
| MAXIMUM PLATE DISSIPATION                          | 3 W             |
| MAXIMUM SCREEN DISSIPATION                         | 0.55 W          |
| MAXIMUM CATHODE CURRENT                            | 20 mA           |
| Pentode section; screen rating is chart-dependent. |                 |

| SECTION2 Triode           |               |
|---------------------------|---------------|
| PLATE RESISTANCE          | 5300 $\Omega$ |
| TRANSCONDUCTANCE          | 0.0075 S      |
| AMPLIFICATION FACTOR      | 40            |
| MAXIMUM PLATE VOLTAGE     | 330 V         |
| MAXIMUM PLATE DISSIPATION | 2.5 W         |
| MAXIMUM CATHODE CURRENT   | 20 mA         |
| <i>Triode section.</i>    |               |

6U8A is a TriodePentode vacuum tube documented in the RCA Receiving Tube Manual. The supplied excerpt was reviewed for heater data, section arrangement, maximum ratings, electrical characteristics, interelectrode capacitances, typical operating conditions, and stated applications.



## SOURCE OPERATING CONDITIONS

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# 1960 RCA Industrial and Communications Types

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

## 1960 RCA INDUSTRIAL AND COMMUNICATIONS TYPES

## Section 1 · Pentode

| APPLICATION |                               |                  |
|-------------|-------------------------------|------------------|
| PARAMETER   | PUBLISHED VALUE               | CONDITION / NOTE |
| Application | Mixer / VHF frequency changer | —                |

## 1960 RCA INDUSTRIAL AND COMMUNICATIONS TYPES

## Section 2 · Triode

| APPLICATION |                 |                  |
|-------------|-----------------|------------------|
| PARAMETER   | PUBLISHED VALUE | CONDITION / NOTE |
| Application | Oscillator      | —                |



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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 · Pentode

| CHARACTERISTIC |                 |                           |
|----------------|-----------------|---------------------------|
| PARAMETER      | PUBLISHED VALUE | CONDITION / NOTE          |
| Plate Current  | 9.5 mA          | Pentode;PlateVoltage=125V |

## 1961 TUNG SOL

## Section 2 · Triode

| CHARACTERISTIC |                 |                          |
|----------------|-----------------|--------------------------|
| PARAMETER      | PUBLISHED VALUE | CONDITION / NOTE         |
| Plate Current  | 13.5 mA         | Triode;PlateVoltage=125V |



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### 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 · Pentode

| CHARACTERISTIC                |                 |                  |
|-------------------------------|-----------------|------------------|
| PARAMETER                     | PUBLISHED VALUE | CONDITION / NOTE |
| GridToPlateCapacitanceMaximum | 0.015 pF        | —                |
| Input Capacitance             | 5 pF            | —                |
| Output Capacitance            | 3.5 pF          | —                |
| Plate Resistance              | 200000 ohm      | —                |
| Transconductance              | 5000 uS         | —                |

| OTHER                |                 |                  |
|----------------------|-----------------|------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE |
| Plate Supply Voltage | 125 V           | PentodeUnit      |
| Screen Voltage       | 110 V           | PentodeUnit      |
| Plate Current        | 9.5 mA          | PentodeUnit      |
| Screen Current       | 3.5 mA          | PentodeUnit      |

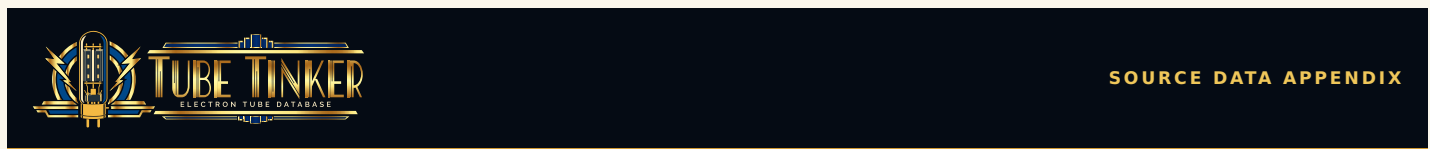
### 1965 SYLVANIA ELECTRONIC TUBES VOL3

## Section 2 · Triode

| CHARACTERISTIC         |                 |                  |
|------------------------|-----------------|------------------|
| PARAMETER              | PUBLISHED VALUE | CONDITION / NOTE |
| Heater Voltage         | 6.3 V           | —                |
| Heater Current         | 450 mA          | —                |
| ControlledWarmupHeater | 1 boolean       | —                |

| PARAMETER                 | PUBLISHED VALUE | CONDITION / NOTE |
|---------------------------|-----------------|------------------|
| Heater Warmup Time        | 11 s            | —                |
| Grid To Plate Capacitance | 1.8 pF          | —                |
| Input Capacitance         | 2.8 pF          | —                |
| Output Capacitance        | 2 pF            | —                |
| Transconductance          | 7500 $\mu$ S    | —                |
| Amplification Factor      | 60              | —                |

| OTHER                |                 |                  |
|----------------------|-----------------|------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE |
| Plate Supply Voltage | 125 V           | TriodeUnit       |
| Plate Current        | 13.5 mA         | TriodeUnit       |



#### SOURCE OPERATING CONDITIONS

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# 1966 Tung Sol Electronic Tubes 2 of 4

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

#### 1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

### Section 1 · Pentode

| OTHER           |                 |                  |
|-----------------|-----------------|------------------|
| PARAMETER       | PUBLISHED VALUE | CONDITION / NOTE |
| Plate voltage   | 125 V           | ClassA           |
| Grid #2 voltage | 110 V           | ClassA           |
| Grid #1 voltage | -1 V            | ClassA           |
| Plate current   | 9.5 mA          | ClassA           |
| Grid #2 current | 3.5 mA          | ClassA           |

| CHARACTERISTIC             |                 |                       |
|----------------------------|-----------------|-----------------------|
| PARAMETER                  | PUBLISHED VALUE | CONDITION / NOTE      |
| Transconductance           | 5000 $\mu$ S    | —                     |
| Zero-bias transconductance | 5500 $\mu$ S    | $E_b=100V;E_{c2}=70V$ |

| CAPACITANCE               |                 |                  |
|---------------------------|-----------------|------------------|
| PARAMETER                 | PUBLISHED VALUE | CONDITION / NOTE |
| Grid-to-plate capacitance | 0.02 pF         | —                |
| Input capacitance         | 5.5 pF          | —                |
| Output capacitance        | 2.6 pF          | —                |

1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

## Section 2 · Triode

| OTHER               |                 |                  |
|---------------------|-----------------|------------------|
| PARAMETER           | PUBLISHED VALUE | CONDITION / NOTE |
| Plate voltage       | 125 V           | ClassA           |
| Grid #1 voltage     | -1 V            | ClassA           |
| Plate current       | 13.5 mA         | ClassA           |
| Heater warm-up time | 11 s            | BothSections     |

| CHARACTERISTIC       |                 |                  |
|----------------------|-----------------|------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE |
| Transconductance     | 7500 uS         | —                |
| Amplification factor | 40              | —                |

| CAPACITANCE               |                 |                  |
|---------------------------|-----------------|------------------|
| PARAMETER                 | PUBLISHED VALUE | CONDITION / NOTE |
| Grid-to-plate capacitance | 1.5 pF          | —                |
| Input capacitance         | 2.8 pF          | —                |
| Output capacitance        | 1.5 pF          | —                |



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# 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 · Pentode

| OTHER         |                 |                  |
|---------------|-----------------|------------------|
| PARAMETER     | PUBLISHED VALUE | CONDITION / NOTE |
| Plate Voltage | 125 V           | ClassA           |

| CHARACTERISTIC             |                 |                                |
|----------------------------|-----------------|--------------------------------|
| PARAMETER                  | PUBLISHED VALUE | CONDITION / NOTE               |
| Transconductance Alternate | 5500 $\mu$ S    | ClassA,AlternateOperatingPoint |

1968 GENERAL ELECTRIC CO

## Section 2 · Triode

| OTHER         |                 |                  |
|---------------|-----------------|------------------|
| PARAMETER     | PUBLISHED VALUE | CONDITION / NOTE |
| Plate Voltage | 125 V           | ClassA           |



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SOURCE OPERATING CONDITIONS

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# 1971 RCA HB3 Binder 3 of 7

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

1971 RCA HB3 BINDER 3 OF 7

## Section 1 · Pentode

| OTHER                                    |                 |                                         |
|------------------------------------------|-----------------|-----------------------------------------|
| PARAMETER                                | PUBLISHED VALUE | CONDITION / NOTE                        |
| Maximum plate voltage                    | 330 V           | Promoted published value                |
| Maximum plate dissipation                | 3 W             | Promoted published value                |
| Grid No.1 to plate                       | 0.006 mA        | Direct Interelectrode Capacitances:     |
| Grid-No.2 Current                        | 3.5 mA          | Characteristics, Class A I Amplifier:   |
| PLATE VOLTAGE.                           | 330 V           | Maximum Ratings, Design-Naximum Values: |
| GRID-No.2 VOLTAGE - See Grid-No.a Input. | 2 V             | Maximum Ratings, Design-Naximum Values: |
| For grid-No.2 voltages up                | 2 V             | Maximum Ratings, Design-Naximum Values: |
| For grid-No.2 voltages be                | 2 V             | Maximum Ratings, Design-Naximum Values: |
| PLATE DISSIPATION                        | 3 W             | Maximum Ratings, Design-Naximum Values: |

| CHARACTERISTIC   |                 |                          |
|------------------|-----------------|--------------------------|
| PARAMETER        | PUBLISHED VALUE | CONDITION / NOTE         |
| Plate resistance | 400000 ohm      | Promoted published value |
| Transconductance | 5200 uS         | Promoted published value |

1971 RCA HB3 BINDER 3 OF 7

## Section 2 · Triode

| OTHER                                                      |                 |                                         |
|------------------------------------------------------------|-----------------|-----------------------------------------|
| PARAMETER                                                  | PUBLISHED VALUE | CONDITION / NOTE                        |
| Heater voltage                                             | 6.3 V           | Nominal                                 |
| Heater current                                             | 450 mA          | Nominal                                 |
| Maximum plate voltage                                      | 330 V           | Promoted published value                |
| Maximum plate dissipation                                  | 3 W             | Promoted published value                |
| Grid No.1 to plate                                         | 0.006 mA        | Direct Interelectrode Capacitances:     |
| With heater voltage of                                     | 6 V             | Characteristics, Class A I Amplifier:   |
| Plate Supply Voltage                                       | 250 V           | Characteristics, Class A I Amplifier:   |
| Supply Voltage                                             | 110 V           | Characteristics, Class A I Amplifier:   |
| Cathode Resistor                                           | 68 ohm          | Characteristics, Class A I Amplifier:   |
| Plate Resistance (Approx.).                                | 400000 ohm      | Characteristics, Class A I Amplifier:   |
| Plate Current                                              | 10 mA           | Characteristics, Class A I Amplifier:   |
| Grid-No.1 Voltage (Approx.)                                | 1 V             | Characteristics, Class A I Amplifier:   |
| for plate $\mu$ a                                          | -10 V           | Characteristics, Class A I Amplifier:   |
| PLATE VOLTAGE.                                             | 330 V           | Maximum Ratings, Design-Naximum Values: |
| SUPPLY VOLTAGE                                             | 330 V           | Maximum Ratings, Design-Naximum Values: |
| tween                                                      | 330 V           | Maximum Ratings, Design-Naximum Values: |
| PLATE DISSIPATION                                          | 3 W             | Maximum Ratings, Design-Naximum Values: |
| respect to cathode                                         | 200 V           | Maximum Ratings, Design-Naximum Values: |
| much as                                                    | 35 V            | Maximum Ratings, Design-Naximum Values: |
| volts =                                                    | 7.5 V           | Maximum Ratings, Design-Naximum Values: |
| 135 volts positive with respect to cathode, and al l other | 135 V           | Maximum Ratings, Design-Naximum Values: |
| With heater volts =                                        | 150 V           | Maximum Ratings, Design-Naximum Values: |
| cathode resistor lohms) bypassed =                         | 56 ohm          | Maximum Ratings, Design-Naximum Values: |

| PARAMETER           | PUBLISHED VALUE | CONDITION / NOTE                        |
|---------------------|-----------------|-----------------------------------------|
| With heater volts = | 250 V           | Maximum Ratings, Design-Naximum Values: |
| 2 supply volts = I  | 10 V            | Maximum Ratings, Design-Naximum Values: |

| CHARACTERISTIC       |                 |                          |
|----------------------|-----------------|--------------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE         |
| Plate resistance     | 5000 ohm        | Promoted published value |
| Transconductance     | 8500 uS         | Promoted published value |
| Amplification factor | 40              | Promoted published value |
| Voltage              | 20 V            | —                        |
| Current at           | 0.45 V          | —                        |



#### SOURCE OPERATING CONDITIONS

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# 1971 RCA HB3 Binder 5 of 7

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

1971 RCA HB3 BINDER 5 OF 7

## Section 1 · Pentode

| OTHER                  |                 |                  |
|------------------------|-----------------|------------------|
| PARAMETER              | PUBLISHED VALUE | CONDITION / NOTE |
| Pentode plate voltage  | 125 V           | Pentode;ClassA   |
| Pentode screen voltage | 125 V           | Pentode;ClassA   |
| Pentode plate current  | 9.5 mA          | Pentode;ClassA   |
| Pentode screen current | 3.5 mA          | Pentode;ClassA   |

| CHARACTERISTIC           |                 |                  |
|--------------------------|-----------------|------------------|
| PARAMETER                | PUBLISHED VALUE | CONDITION / NOTE |
| Pentode transconductance | 5000 uS         | Pentode          |
| Pentode plate resistance | 200000 ohm      | Pentode          |

1971 RCA HB3 BINDER 5 OF 7

## Section 2 · Triode

| OTHER                |                 |                  |
|----------------------|-----------------|------------------|
| PARAMETER            | PUBLISHED VALUE | CONDITION / NOTE |
| Heater voltage       | 6.3 V           | —                |
| Heater current       | 450 mA          | —                |
| Triode plate voltage | 125 V           | Triode;ClassA    |
| Triode plate current | 12 mA           | Triode;ClassA    |

| CHARACTERISTIC              |                 |                  |
|-----------------------------|-----------------|------------------|
| PARAMETER                   | PUBLISHED VALUE | CONDITION / NOTE |
| Triode transconductance     | 6500 $\mu$ S    | Triode           |
| Triode amplification factor | 40              | Triode           |



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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 · Pentode

| OTHER                      |                 |                  |
|----------------------------|-----------------|------------------|
| PARAMETER                  | PUBLISHED VALUE | CONDITION / NOTE |
| Maximum Plate Voltage      | 330 V           | Section2         |
| Maximum Screen Voltage     | 330 V           | Section2         |
| Maximum Plate Dissipation  | 3 W             | Section2         |
| Maximum Screen Dissipation | 0.55 W          | Section2         |

| CHARACTERISTIC   |                 |                  |
|------------------|-----------------|------------------|
| PARAMETER        | PUBLISHED VALUE | CONDITION / NOTE |
| Plate Resistance | 200000 ohm      | Section2         |
| Transconductance | 5000 $\mu$ S    | Section2         |

1975 RCA RC30

## Section 2 · Triode

| OTHER                                                 |                 |                               |
|-------------------------------------------------------|-----------------|-------------------------------|
| PARAMETER                                             | PUBLISHED VALUE | CONDITION / NOTE              |
| $\text{^fc T}$                                        | 40 MHz          | Other;PublishedValue1         |
| $\text{^fc T}$                                        | 4.7 MHz         | Other;PublishedValue2         |
| $\text{^fc T}$                                        | 6 MHz           | Other;PublishedValue3         |
| $\text{^fc T}$                                        | 9 MHz           | Other;PublishedValue4         |
| Heater Warm-up Time (Average)                         | 11 s            | Other;PublishedValue1         |
| Heater Warm-up Time (Average)                         | 11 s            | Other;PublishedValue2         |
| Heater Warm-up Time (Average)                         | 11 s            | Other;PublishedValue3         |
| Peak value                                            | 200 V           | Other;PublishedValue1         |
| Peak value                                            | 200 V           | Other;PublishedValue2         |
| Average value                                         | 100 V           | Other;PublishedValue1         |
| Average value                                         | 100 V           | Other;PublishedValue2         |
| Plate Voltage                                         | 330 V           | MaximumRating;PublishedValue1 |
| Plate Voltage                                         | 330 V           | MaximumRating;PublishedValue2 |
| Grid-No                                               | 2 V             | MaximumRating;PublishedValue1 |
| Grid-No                                               | 330 V           | MaximumRating;PublishedValue2 |
| Grid-No.1 (Control-Grid) Voltage, Positive-bias value | 0 V             | MaximumRating;PublishedValue1 |
| Grid-No.1 (Control-Grid) Voltage, Positive-bias value | 0 V             | MaximumRating;PublishedValue2 |

| CAPACITANCE     |                 |                             |
|-----------------|-----------------|-----------------------------|
| PARAMETER       | PUBLISHED VALUE | CONDITION / NOTE            |
| Grid to Plate   | 1.8 pF          | Capacitance;PublishedValue1 |
| Grid to Plate   | 1.8 pF          | Capacitance;PublishedValue2 |
| Pentode Grid No | 3 pF            | Capacitance;PublishedValue1 |
| Pentode Grid No | 2.8 pF          | Capacitance;PublishedValue2 |
| Pentode Grid No | 2.8 pF          | Capacitance;PublishedValue3 |
| Pentode Grid No | 3 pF            | Capacitance;PublishedValue1 |
| Pentode Grid No | 1.5 pF          | Capacitance;PublishedValue2 |

| PARAMETER                         | PUBLISHED VALUE | CONDITION / NOTE            |
|-----------------------------------|-----------------|-----------------------------|
| Pentode Grid No                   | <b>2 pF</b>     | Capacitance;PublishedValue3 |
| Grid No.1 to Plate                | <b>0.01 pF</b>  | Capacitance;PublishedValue1 |
| Grid No.1 to Plate                | <b>0.006 pF</b> | Capacitance;PublishedValue2 |
| Grid No                           | <b>3 pF</b>     | Capacitance;PublishedValue1 |
| Grid No                           | <b>5 pF</b>     | Capacitance;PublishedValue2 |
| Grid No                           | <b>5 pF</b>     | Capacitance;PublishedValue3 |
| Grid No                           | <b>3 pF</b>     | Capacitance;PublishedValue1 |
| Grid No                           | <b>2.6 pF</b>   | Capacitance;PublishedValue2 |
| Grid No                           | <b>3.5 pF</b>   | Capacitance;PublishedValue3 |
| Triode Cathode to Heater          | <b>3 pF</b>     | Capacitance;PublishedValue1 |
| Triode Cathode to Heater          | <b>3 pF</b>     | Capacitance;PublishedValue2 |
| Internal Shield                   | <b>3 pF</b>     | Capacitance;PublishedValue1 |
| Internal Shield                   | <b>3 pF</b>     | Capacitance;PublishedValue2 |
| Pentode Grid No.1 to Triode Plate | <b>0.2 pF</b>   | Capacitance;PublishedValue1 |
| Pentode Grid No.1 to Triode Plate | <b>0.2 pF</b>   | Capacitance;PublishedValue2 |
| Pentode Plate to Triode Plate     | <b>0.1 pF</b>   | Capacitance;PublishedValue1 |
| Pentode Plate to Triode Plate     | <b>0.02 pF</b>  | Capacitance;PublishedValue2 |

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