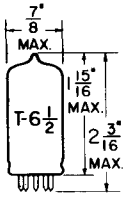
**TUNG-SOL**

# TRIODE PENTODE

MINIATURE TYPE



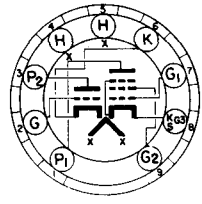

**GLASS BULB**

HEATER

4.7 VOLTS 0.6 AMP.

AC OR DC

ANY MOUNTING POSITION




**BOTTOM VIEW**

MINIATURE BUTTON

9 PIN BASE

9JF

THE 5EU8 IS A HEATER-CATHODE TYPE TRIODE-PENTODE IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS DESIGNED PRIMARILY FOR THE USE AS A COMBINED TRIODE OSCILLATOR AND PENTODE MIXER IN TELEVISION RECEIVERS. THE TRIODE HAS A CONTROLLED CATHODE WARM-UP CHARACTERISTIC. EXCEPT FOR HEATER CHARACTERISTICS, THE 5EU8 IS IDENTICAL TO THE 6EU8.

## DIRECT INTERELECTRODE CAPACITANCES

| PENTODE SECTION: | WITH SHIELD | WITHOUT SHIELD | |
|---|---|---|---|
| GRID #1 TO PLATE: (G1 TO P) (MAX.) | 0.10 | 0.02 | μμf |
| INPUT: G1 TO (H+K) | 5.0 | 5.0 | μμf |
| OUTPUT: P TO (H+K) | 3.4 | 2.6 | μμf |
| **TRIODE SECTION:** | | | |
| GRID TO PLATE: (G TO P) | 1.7 | 1.7 | μμf |
| INPUT: G TO (H+K) | 3.2 | 3.0 | μμf |
| OUTPUT: P TO (H+K+S) | 1.1 | 1.6 | μμf |
| CATHODE TO HEATER (EACH SECTION): (K TO H) | 3.60 | 3.60 | μμf |

## RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER MAXIMUM SYSTEM

| | TRIODE | PENTODE | |
|---|---|---|---|
| HEATER VOLTAGE | 4.7 | 4.7 | VOLTS |
| MAXIMUM PLATE VOLTAGE | 330 | 330 | VOLTS |
| MAXIMUM GRID #2 SUPPLY VOLTAGE | --- | 330 | VOLTS |
| MAXIMUM POSITIVE DC GRID #1 VOLTAGE | 0 | 0 | VOLTS |
| MAXIMUM PLATE DISSIPATION | 3.0 | 3.1 | WATTS |
| MAXIMUM GRID #2 DISSIPATION | --- | 0.55 | WATTS |
| MAXIMUM GRID #1 RESISTANCE | 100 | 100 | KILOHMS |

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## RATINGS - cont'd.

INTERPRETED ACCORDING TO DESIGN CENTER MAXIMUM SYSTEM

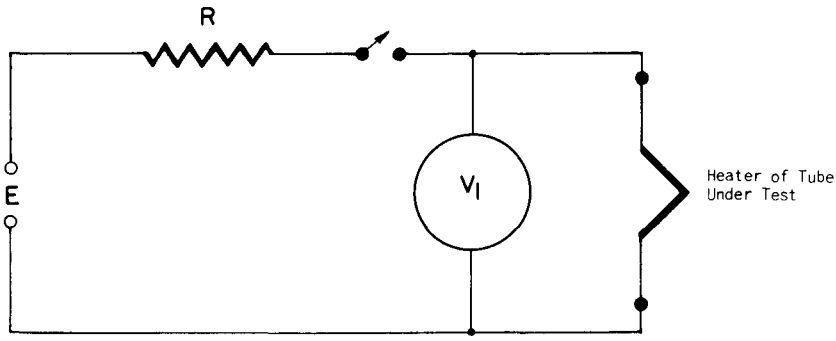
| | | |
|---|---|---|
| HEATER VOLTAGE | 4.7 | VOLTS |
| MAXIMUM HEATER-CATHODE VOLTAGE: | | |
| HEATER POSITIVE WITH RESPECT TO CATHODE | | |
| DC COMPONENT | 100 | VOLTS |
| TOTAL DC AND PEAK | 200 | VOLTS |
| HEATER NEGATIVE WITH RESPECT TO CATHODE | | |
| TOTAL DC AND PEAK | 200 | VOLTS |
| HEATER WARM-UP TIME* | 11.0 | SECONDS |

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

| | TRIODE | PENTODE | |
|---|---|---|---|
| HEATER VOLTAGE | 4.7 | 4.7 | VOLTS |
| HEATER CURRENT | 0.6 | 0.6 | AMP. |
| PLATE VOLTAGE | 150 | 125 | VOLTS |
| GRID #2 VOLTAGE | --- | 125 | VOLTS |
| CATHODE RESISTOR | 56 | --- | OHMS |
| GRID #1 VOLTAGE | --- | -1.0 | VOLT |
| AMPLIFICATION FACTOR | 40.0 | --- | |
| TRANSCONDUCTANCE | 8500 | 6400 | μMHOS |
| PLATE RESISTANCE (APPROX.) | 5000 | 80000 | OHMS |
| PLATE CURRENT | 18.0 | 12.0 | MA. |
| GRID #2 CURRENT | --- | 4.0 | MA. |
| GRID #1 VOLTAGE (APPROX.) FOR Ib = 10μA | -12.0 | -9.0 | VOLTS |
| CATHODE WARM-UP TIME[A] | 35 | --- | SECONDS |

* HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TERMINALS TO INCREASE FROM ZERO TO THE HEATER TEST VOLTAGE ($V_1$).

| FOR TYPE | 5EU8 |
|---|---|
| E= | 18.8 |
| $V_1$= | 3.76 |
| R= | 23.5 |

A. CATHODE WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR TRANSCONDUCTANCE TO REACH 6500 μMHOS WHEN A TUBE IS OPERATED FROM A COLD START AT A PLATE POTENTIAL OF 100 VOLTS DC, ZERO GRID BIAS, AND AT A CONSTANT HEATER CURRENT OF 560 MILLIAMPERES FOR 5EU8 OR A HEATER POTENTIAL OF 5.5 VOLTS FOR THE 6EU8.

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