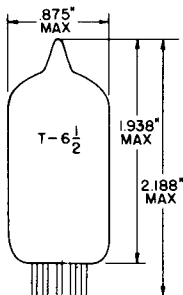


TUNG-SOL



GLASS BULB
MINIATURE BUTTON
9 PIN BASE E9-1
OUTLINE DRAWING
JEDEC 6-2

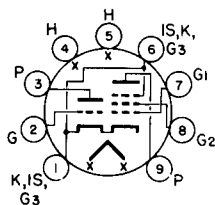
TRIODE PENTODE MINIATURE TYPE

COATED UNIPOTENTIAL CATHODE

HEATER

4.7 VOLTS 600 MA.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
BASING DIAGRAM
JEDEC 9JG

THE 5EH8 IS A MEDIUM MU-TRIODE AND A SHARP CUTOFF PENTODE IN THE 9-PIN MINIATURE CONSTRUCTION. IT IS INTENDED PRIMARILY FOR USE AS A COMBINED VHF OSCILLATOR AND MIXER. THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SUCH THAT THE HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED.

DIRECT INTERELECTRODE CAPACITANCES

| | WITH SHIELD #315 | WITHOUT SHIELD | |
|--|------------------|----------------|----|
| TRIODE:* | | | |
| GRID TO PLATE | 1.8 | 1.8 | pf |
| INPUT: G ₁ TO (H+K+PK+PG ₃ +I.S.) | 2.8 | 2.8 | pf |
| OUTPUT: P TO (H+K+PK+PG ₃ +I.S.) | 2.2 | 1.7 | pf |
| PENTODE:* | | | |
| GRID #1 TO PLATE (MAX.) | .012 | .020 | pf |
| INPUT: G ₁ TO (H+K+G ₂ +G ₃ +TK+I.S.) | 4.8 | 4.8 | pf |
| OUTPUT: P TO (H+K+G ₂ +G ₃ +TK+I.S.) | 3.2 | 2.4 | pf |
| CATHODE TO HEATER: H TO (TK+PK+PG ₃ +I.S.) | 7.5 | 7.5 | pf |

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

| | TRIODE SECTION | PENTODE SECTION | |
|--------------------------------|----------------|-----------------|-------|
| MAXIMUM PLATE VOLTAGE | 300 | 300 | VOLTS |
| MAXIMUM GRID #2 SUPPLY VOLTAGE | | 300 | VOLTS |
| MAXIMUM GRID #2 VOLTAGE | | | |
| MAXIMUM PLATE DISSIPATION | 2.5 | 2.8 | WATTS |
| MAXIMUM GRID #2 DISSIPATION | | 0.5 | WATT |

*INDICATES AN ADDITION.

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

RATINGS - CONT'D.
 INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM A

| | TRIODE SECTION | PENTODE SECTION | |
|---|----------------|-----------------|---------|
| MAXIMUM POSITIVE GRID #1 VOLTAGE | 0 | 0 | VOLTS |
| MAXIMUM GRID #1 CIRCUIT RESISTANCE: | | | |
| WITH FIXED BIAS | 0.5 | 0.25 | MEGOHM |
| WITH SELF BIAS | 1.0 | 1.0 | MEGOHM |
| MAXIMUM HEATER-CATHODE VOLTAGE: | | | |
| HEATER NEGATIVE WITH RESPECT TO CATHODE | | | |
| TOTAL DC AND PEAK | 200 | 200 | VOLTS |
| HEATER POSITIVE WITH RESPECT TO CATHODE | | | |
| DC | 100 | 100 | VOLTS |
| TOTAL DC AND PEAK | 200 | 200 | VOLTS |
| HEATER WARM-UP TIME* | | 11.0 | SECONDS |

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A₁ AMPLIFIER

| | TRIODE SECTION | PENTODE SECTION | | |
|--|----------------|-----------------|------|--------|
| PLATE VOLTAGE | 125 | 100 | 125 | VOLTS |
| GRID #2 VOLTAGE | | 70 | 125 | VOLTS |
| GRID #1 VOLTAGE | -1.0 | 0 | -1.0 | VOLTS |
| PLATE CURRENT | 13.5 | | 12 | MA. |
| GRID #2 CURRENT | | | 4.0 | MA. |
| TRANSCONDUCTANCE | 7500 | 6500 | 6000 | μMHOS |
| AMPLIFICATION FACTOR | 40 | | | |
| PLATE RESISTANCE (APPROX.) | | | 0.17 | MEGOHM |
| GRID #1 VOLTAGE FOR I _b = 20 μA (APPROX.) | -9 | | -10 | VOLTS |

^A DESIGN-MAXIMUM RATINGS ARE LIMITING VALUES OF OPERATING AND ENVIRONMENTAL CONDITIONS APPLICABLE TO A BOGEY ELECTRON DEVICE OF A SPECIFIED TYPE AS DEFINED BY ITS PUBLISHED DATA, AND SHOULD NOT BE EXCEEDED UNDER THE WORST PROBABLE CONDITIONS. THE DEVICE MANUFACTURER CHOOSES THESE VALUES TO PROVIDE ACCEPTABLE SERVICEABILITY OF THE DEVICE, TAKING RESPONSIBILITY FOR THE EFFECTS OF CHANGES IN OPERATING CONDITIONS DUE TO VARIATIONS IN DEVICE CHARACTERISTICS. THE EQUIPMENT MANUFACTURER SHOULD DESIGN SO THAT INITIALLY AND THROUGHOUT LIFE NO DESIGN-MAXIMUM VALUE FOR THE INTENDED SERVICE IS EXCEEDED WITH A BOGEY DEVICE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, SIGNAL VARIATION, AND ENVIRONMENTAL CONDITIONS.

* HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE