TRIODE PENTODE
MINIATURE TYPE

FOR
COLOR AND BLACK AND WHITE
T.V. APPLICATIONS

COATED UNIPOTENTIAL CATHODE
ANY MOUNTING POSITION

GLASS BULB
MINIATURE BUTTON
9 PIN BASE 89-1
OUTLINE DRAWING
JEDEC 6-2

THE 6CU8 IS A GENERAL-PURPOSE MEDIUM-MU TRIODE AND SHARP-CUTOFF PENTODE IN THE
9 PIN MINIATURE CONSTRUCTION. IT IS INTENDED FOR A WIDE VARIETY OF APPLICATIONS IN
BLACK-AND-WHITE AND COLOR TELEVISION RECEIVERS. THERMAL CHARACTERISTICS OF THE
HEATER ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE
ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED.

DIRECT INTERELECTRODE CAPACITANCES
WITHOUT EXTERNAL SHIELD

PENTODE GRID 1 TO PENTODE PLATE: (PG TO PP)  max. 0.025 pf
PENTODE INPUT: PG1 TO (H+PK+PG3+TK+I.S.+PG2)  7 pf
PENTODE OUTPUT: PP TO (H+PK+PG3+TK+I.S.+PG2)  2.4 pf
TRIODE GRID TO TRIODE PLATE: TG TO TP  1.6 pf
TRIODE INPUT: TG TO (TK+H+PG3+I.S.)  1.9 pf
TRIODE OUTPUT: TP TO (TK+H+PG3+I.S.)  1.6 pf
PENTODE GRID 1 TO TRIODE PLATE (PG1 TO TP)  max 0.03 pf
PENTODE PLATE TO TRIODE PLATE (PP TO TP)  max 0.07 pf

HEATER CHARACTERISTICS AND RATINGS
DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-229

AVERAGE CHARACTERISTICS
HEATER WARM-UP TIME 6.3 VOLTS 450 MA.
A 11 SECONDS

LIMITS OF APPLIED VOLTAGE 6.3 ± 0.6 VOLTS
LIMITS OF SUPPLIED CURRENT 450 ± 30 MA.

MAXIMUM HEATER-CATHODE VOLTAGE:
HEATER NEGATIVE WITH RESPECT TO CATHODE 200 VOLTS
TOT AL DC AND PEAK
HEATER POSITIVE WITH RESPECT TO CATHODE DC
TOTAL DC AND PEAK 100 VOLTS

CONTINUED ON FOLLOWING PAGE

TUNG-SOL ELECTRIC INC., ELECTRON TUBE DIVISION, BLOOMFIELD, NEW JERSEY, U.S.A. APRIL 1, 1963 PLATE #6705
CONTINUED FROM PRECEDING PAGE

MAXIMUM RATINGS

→ DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

PENTODE PLATE VOLTAGE → 330 VOLTS
TRIODE PLATE VOLTAGE → 330 VOLTS
GRID 2 SUPPLY VOLTAGE → 330 VOLTS
GRID 2 VOLTAGE See rating chart
PENTODE PLATE DISSIPATION → 2.3 WATTS
TRIODE PLATE DISSIPATION → 2.8 WATTS
GRID 2 DISSIPATION → 0.55 WATT
POSITIVE DC PENTODE GRID 1 VOLTAGE 0 VOLTS
POSITIVE DC TRIODE GRID VOLTAGE 0 VOLTS

→ TYPICAL OPERATING CHARACTERISTICS

CLASS A1 AMPLIFIER

<table>
<thead>
<tr>
<th>TRIODE</th>
<th>PENTODE</th>
</tr>
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<tbody>
<tr>
<td>PLATE VOLTAGE</td>
<td>125 VOLTS</td>
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<tr>
<td>GRID 2 VOLTAGE</td>
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<tr>
<td>GRID 1 VOLTAGE</td>
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<tr>
<td>CATHODE BIAS RESISTOR</td>
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<tr>
<td>PLATE CURRENT</td>
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<td>GRID 2 CURRENT</td>
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<td>TRANSCONDUCTANCE</td>
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<td>AMPLIFICATION FACTOR</td>
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<tr>
<td>PLATE RESISTANCE</td>
<td>APPROX. 4.1</td>
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<tr>
<td>PLATE CURRENT AT Ec1 = -3; Rk =0</td>
<td>......</td>
</tr>
<tr>
<td>GRID 1 VOLTAGE, APPROX. FOR Ib = 20 μA</td>
<td>12</td>
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</tbody>
</table>

→ INDICATES A CHANGE.

A 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 HEATER OPERATING RESISTANCE.
6CU8

PENTODE SECTION
E_f = 6.3 Volts
E_b = 200 Volts
E_c3 = 0 Volts
E_c2 = 150 Volts

- Plate (I_b) or Grid #2 (I_c2) Milliamperes
- Transconductance (g_m) Microhms

GRID #1 Volts

0 2.5 5.0 7.5 10.0

0 2500 5000 7500 10000

6CU8

TRIODE SECTION
E_f = 6.3 Volts

- Plate Milliamperes
- Plate Volts

0 100 200 300 400 500

0 10 20 30