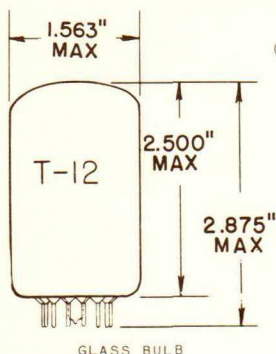


## TUNG-SOL

## BEAM PENTODE

COMPACTRON



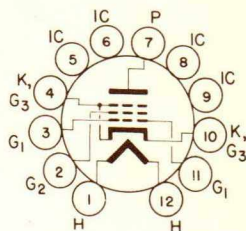
GLASS BULB

BUTTON  
12 PIN BASE E12-74  
OUTLINE DRAWING  
JEDEC 12-56

COATED UNIPOTENTIAL CATHODE

FOR HORIZONTAL-DEFLECTION  
AMPLIFIER APPLICATIONS IN  
T.V. RECEIVERS

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM

JEDEC 128J

THE 12GE5 IS A BEAM-POWER PENTODE IN THE COMPACT 12 PIN, T-12 CONSTRUCTION. IT IS DESIGNED PRIMARILY FOR USE AS THE HORIZONTAL-DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS. EXCEPT FOR HEATER CHARACTERISTICS AND HEATER WARM-UP TIME, THE 12GE5 IS IDENTICAL TO THE 6GE5.

## DIRECT INTERELECTRODE CAPACITANCES - APPROX.

WITHOUT EXTERNAL SHIELD\*

|                                                     |      |    |
|-----------------------------------------------------|------|----|
| GRID #1 TO PLATE: (G <sub>1</sub> TO P)             | 0.34 | pf |
| INPUT: G <sub>1</sub> TO (H+K+G <sub>2</sub> +B.P.) | 16   | pf |
| OUTPUT: P TO (H+K+G <sub>2</sub> +B.P.)             | 7.0  | pf |

## HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

|                                                      |            |        |         |
|------------------------------------------------------|------------|--------|---------|
| AVERAGE CHARACTERISTICS                              | 12.5 VOLTS | 600    | MA.     |
| HEATER SUPPLY LIMITS:                                |            |        |         |
| CURRENT OPERATION                                    |            | 600±40 | MA.     |
| 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 <sup>□</sup>                     |            | 11     | SECONDS |

<sup>□</sup> 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.

## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

## MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239  
HORIZONTAL-DEFLECTION AMPLIFIER SERVICE •

|                                                    |      |         |
|----------------------------------------------------|------|---------|
| DC PLATE-SUPPLY VOLTAGE (BOOST + DC POWER SUPPLY)) | 770  | VOLTS   |
| PEAK POSITIVE PULSE PLATE VOLTAGE                  | 6500 | VOLTS   |
| PEAK NEGATIVE PULSE PLATE VOLTAGE                  | 1500 | VOLTS   |
| GRID #2 VOLTAGE                                    | 220  | VOLTS   |
| NEGATIVE DC GRID #1 VOLTAGE                        | 55   | VOLTS   |
| PEAK NEGATIVE GRID #1 VOLTAGE                      | 330  | VOLTS   |
| PLATE DISSIPATION <sup>A</sup>                     | 17.5 | WATTS   |
| GRID #2 DISSIPATION                                | 3.5  | WATTS   |
| DC CATHODE CURRENT                                 | 175  | MA.     |
| PEAK CATHODE CURRENT                               | 550  | MA.     |
| GRID #1 CIRCUIT RESISTANCE                         | 1.0  | MEGOHMS |
| BULB TEMPERATURE AT HOTTEST POINT                  | 220  | °C      |

## TYPICAL OPERATING CHARACTERISTICS

## AVERAGE CHARACTERISTICS

|                                            |                |        |       |
|--------------------------------------------|----------------|--------|-------|
| PLATE VOLTAGE                              | 60             | 250    | VOLTS |
| GRID #2 VOLTAGE                            | 150            | 150    | VOLTS |
| GRID #1 VOLTAGE                            | 0 <sup>B</sup> | -22.5  | VOLTS |
| PLATE RESISTANCE, APPROX.                  | ---            | 20,000 | OHMS  |
| TRANSCONDUCTANCE                           | ---            | 6600   | μMHOS |
| PLATE CURRENT                              | 345            | 75     | MA.   |
| GRID #2 CURRENT                            | 33             | 2.4    | MA.   |
| GRID #1 VOLTAGE, APPROX.                   |                |        |       |
| $I_b = 1.0$ MA.                            | ---            | -46    | VOLTS |
| TRIODE AMPLIFICATION FACTOR                |                |        |       |
| G2 TIED TO PLATE, $E_b = E_{c2} = 150$ V., |                |        |       |
| $E_{c1} = -22.5$ V.                        | ---            | 4.1    |       |

• FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCAST STATIONS: FEDERAL COMMUNICATIONS COMMISSION", THE DUTY CYCLE OF THE VOLTAGE PULSE MUST NOT EXCEED 15% OF ONE SCANNING CYCLE.

<sup>A</sup> IN STAGES OPERATING WITH GRID LEAK BIAS, AN ADEQUATE CATHODE BIAS RESISTOR OR OTHER SUITABLE MEANS IS REQUIRED TO PROTECT THE TUBE IN THE ABSENCE OF EXCITATION.

<sup>B</sup> APPLIED FOR SHORT INTERVAL (TWO SECONDS MAXIMUM) SO AS NOT TO DAMAGE TUBE.