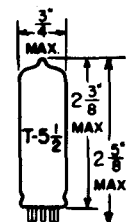


## TUNG-SOL

## PENTODE

## MINIATURE TYPE



**GLASS BULB**  
MINIATURE BUTTON  
9 PIN BASE E7-1  
OUTLINE DRAWING  
JEDEC 5-3

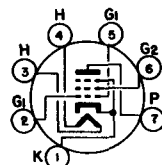
COATED UNIPOTENTIAL CATHODE

HEATER

32 VOLTS 0.10 AMP.

AC OR DC

ANY MOUNTING POSITION

**BOTTOM VIEW**

BASING DIAGRAM  
JEDEC 7CV

THE 32ET5A IS A BEAM POWER PENTODE IN THE 7 PIN MINIATURE CONSTRUCTION. IT IS ESPECIALLY SUITED FOR USE IN AC/DC RADIOS THAT EMPLOY 100 MILLI-AMPERE SERIES CONNECTED HEATERS. EXCEPT FOR HEATER RATINGS, THE 32ET5A IS IDENTICAL TO THE 32ET5.

**DIRECT INTERELECTRODE CAPACITANCES**

WITHOUT EXTERNAL SHIELD

|                          |     |               |
|--------------------------|-----|---------------|
| GRID #1 TO PLATE         | 0.6 | $\mu\text{f}$ |
| INPUT: G TO (H+K+G2+G3)  | 12  | $\mu\text{f}$ |
| OUTPUT: P TO (H+K+G2+G3) | 6.0 | $\mu\text{f}$ |

**RATINGS**INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM<sup>A</sup>

|                                         |             |         |
|-----------------------------------------|-------------|---------|
| HEATER CURRENT <sup>B</sup>             | 0.100±0.006 | AMPS.   |
| MAXIMUM HEATER-CATHODE VOLTAGE:         | 0.10        | AMP.    |
| HEATER NEGATIVE WITH RESPECT TO CATHODE |             |         |
| TOTAL DC AND PEAK                       | 200         | VOLTS   |
| HEATER POSITIVE WITH RESPECT TO CATHODE |             |         |
| DC                                      | 100         | VOLTS   |
| TOTAL DC AND PEAK                       | 200         | VOLTS   |
| MAXIMUM PLATE VOLTAGE                   | 150         | VOLTS   |
| MAXIMUM GRID #2 VOLTAGE                 | 130         | VOLTS   |
| MAXIMUM PLATE DISSIPATION               | 5.4         | WATTS   |
| MAXIMUM GRID #2 DISSIPATION             | 1.2         | WATTS   |
| MAXIMUM GRID #1 CIRCUIT RESISTANCE      |             |         |
| FIXED BIAS                              | 0.1         | MEGOHM  |
| CATHODE BIAS                            | 0.5         | MEGOHM  |
| HEATER WARM-UP TIME <sup>A</sup>        | 20          | SECONDS |

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.

CONTINUED ON FOLLOWING PAGE

## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A<sub>1</sub> AMPLIFIER

|                                                |        |         |
|------------------------------------------------|--------|---------|
| HEATER VOLTAGE (SERIES OPERATION)              | 32     | VOLTS   |
| HEATER CURRENT <sup>C</sup> (SERIES OPERATION) | 0.10   | AMP.    |
| PLATE VOLTAGE                                  | 110    | VOLTS   |
| GRID #2 VOLTAGE                                | 110    | VOLTS   |
| GRID #1 VOLTAGE                                | -7.5   | VOLTS   |
| PEAK AF GRID #1 VOLTAGE                        | 7.5    | VOLTS   |
| ZERO-SIGNAL PLATE CURRENT                      | 30     | MA.     |
| ZERO-SIGNAL GRID #2 CURRENT                    | 2.8    | MA.     |
| TRANSCONDUCTANCE                               | 5500   | μMHOS   |
| PLATE RESISTANCE (APPROX.)                     | 21 500 | OHMS    |
| LOAD RESISTANCE                                | 2800   | OHMS    |
| MAXIMUM-SIGNAL POWER OUTPUT                    | 1.2    | WATTS   |
| TOTAL HARMONIC DISTORTION (APPROX.)            | 10     | PERCENT |

<sup>C</sup> FOR SERIES OPERATION OF HEATERS, EQUIPMENT SHOULD BE DESIGNED THAT AT NORMAL SUPPLY VOLTAGE BOGEY TUBES WILL OPERATE AT THIS VALUE OF HEATER CURRENT.

<sup>B</sup> HEATER VOLTAGE SUPPLY VARIATIONS SHALL BE RESTRICTED TO MAINTAIN HEATER CURRENT WITHIN THE SPECIFIED VALUES.

\* 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.