

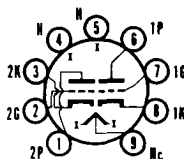
**12AU7A/ECC82**

7AU7, 9AU7

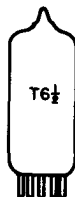
Color Television Type

**VERTICAL or HORIZ. DEFLECTION  
OSCILLATOR and AMPLIFIER****Double Medium Mu Triode**

Construction ..... Miniature T-6½  
 Base ..... Button 9 Pin, E9-1  
 Basing<sup>(2)</sup> ..... 9A  
 Outline ..... 6-2  
 Maximum Diameter ..... 0.875 In.  
 Maximum Seated Height ..... 1.937 In.  
 Maximum Overall Height ..... 2.187 In.



9A

**ELECTRICAL DATA****HEATER OPERATION**

|                                         | 7AU7    | 9AU7    | 12AU7/ECC82    |
|-----------------------------------------|---------|---------|----------------|
| Heater Voltage.....                     | 7.0/3.5 | 9.4/4.7 | 12.6/6.3 Volts |
| Heater Current.....                     | 300/600 | 450/225 | 150/300 Ma     |
| Heater Warm-up Time .....               | 11      | 11      | — Seconds      |
| Maximum Heater-Cathode Voltage          |         |         |                |
| 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      |

**DIRECT INTERELECTRODE CAPACITANCES**

|                                           | Shielded <sup>(1)</sup> | Unshielded |
|-------------------------------------------|-------------------------|------------|
| Grid to Plate: Section 1 .....            | 1.5                     | 1.5 Pf     |
| Section 2 .....                           | 1.5                     | 1.5 Pf     |
| Input: g to (h + k) Section 1 and 2 ..... | 1.8                     | 1.6 Pf     |
| Output: p to (h + k) Section 1 .....      | 2.0                     | 0.40 Pf    |
| Section 2 .....                           | 2.0                     | 0.32 Pf    |

**RATINGS (Design Maximum Rating System) (Each Section)**

|                                                          | Class A1<br>Amplifier | Vertical <sup>(3)</sup><br>Deflection<br>Amplifier |
|----------------------------------------------------------|-----------------------|----------------------------------------------------|
| Plate Voltage (Max.) .....                               | 330                   | 330 Volts                                          |
| Peak Positive Plate Voltage (Abs. Max.) .....            | —                     | 1200 Volts                                         |
| Plate Dissipation <sup>(4)</sup> Each Plate (Max.) ..... | 2.75                  | 2.75 Watts                                         |
| Both Plates (Max.) .....                                 | 5.5                   | 5.5 Watts                                          |
| Peak Negative Grid Voltage (Max.) .....                  | —                     | 275 Volts                                          |
| Average Cathode Current (Max.) .....                     | 22                    | 22 Ma                                              |
| Peak Cathode Current (Max.) .....                        | —                     | 66 Ma                                              |
| Grid Circuit Resistance                                  |                       |                                                    |
| Fixed Bias (Max.) .....                                  | 0.25                  | — Megohm                                           |
| Cathode Bias (Max.) .....                                | 1.0                   | 2.2 Megohms                                        |

**RATINGS (Design Center Rating System)**

|                                         | Vertical <sup>(3)</sup><br>Deflection<br>Oscillator | Horizontal <sup>(3)</sup><br>Deflection<br>Oscillator |
|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------------|
| Plate Voltage (Max.) .....              | 330                                                 | 330 Volts                                             |
| Plate Dissipation <sup>(4)</sup> .....  |                                                     |                                                       |
| Each Plate (Max.) .....                 | 2.75                                                | 2.75 Watts                                            |
| Both Plates (Max.) .....                | 5.5                                                 | 5.5 Watts                                             |
| Peak Negative Grid Voltage (Max.) ..... | 440                                                 | 660 Volts                                             |
| Average Cathode Current (Max.) .....    | 22                                                  | 22 Ma                                                 |
| Peak Cathode Current (Max.) .....       | 66                                                  | 330 Ma                                                |
| Grid Circuit Resistance (Max.) .....    | 2.2                                                 | 2.2 Megohms                                           |

**CHARACTERISTICS AND TYPICAL OPERATION****Class A1 Amplifier (Each Section)**

|                                                  |      |                 |
|--------------------------------------------------|------|-----------------|
| Plate Voltage .....                              | 100  | 250 Volts       |
| Grid Voltage .....                               | 0    | -8.5 Volts      |
| Plate Current .....                              | 11.8 | 10.5 Ma         |
| Plate Resistance (Approx.) .....                 | 6500 | 7700 Ohms       |
| Transconductance .....                           | 3100 | 2200 $\mu$ mhos |
| Amplification Factor .....                       | 20   | 17              |
| Grid Voltage for Ib = 10 $\mu$ a (Approx.) ..... | —    | -24 Volts       |