



# engineering data service

## MECHANICAL DATA

|                             |                              |
|-----------------------------|------------------------------|
| Bulb . . . . .              | T-6 1/2                      |
| Base . . . . .              | E9-1, Miniature Button 9-Pin |
| Outline . . . . .           | 6-3                          |
| Basing . . . . .            | 9HF                          |
| Cathode . . . . .           | Coated Unipotential          |
| Mounting Position . . . . . | Any                          |

## ELECTRICAL DATA

### HEATER CHARACTERISTICS

|   | 6DE7 | 10DE7 | 13DE7 |         |      |
|---|------|-------|-------|---------|------|
| Heater Voltage (ac or dc) . . . . .                         | 6.3  | 9.7   | 13.0  | Volts   |      |
| Heater Current . . . . .                                    | 900  | 600   | 450   | Ma      |      |
| Heater Warm-up Time <sup>1</sup> . . . . .                  | —    | 11    | 11    | Seconds |      |
| Heater-Cathode Voltage (Design Maximum Values) <sup>2</sup> |      |       |       |         |      |
| Heater Negative with Respect to Cathode                     |      |       |       |         |      |
| Total DC and Peak . . . . .                                 |      |       | 200   | Volts   | Max. |
| Heater Positive with Respect to Cathode                     |      |       |       |         |      |
| DC . . . . .  |      |       | 100   | Volts   | Max. |
| Total DC and Peak . . . . .                                 |      |       | 200   | Volts   | Max. |

### DIRECT INTERELECTRODE CAPACITANCES (Approx.)

|                                | Triode No. 1 | Triode No. 2       |
|--------------------------------|--------------|--------------------|
| Grid to Plate . . . . .        | 4.0          | 8.5 $\mu\text{mf}$ |
| Input: g to (h + k) . . . . .  | 2.2          | 5.5 $\mu\text{mf}$ |
| Output: p to (h + k) . . . . . | 0.52         | 1.0 $\mu\text{mf}$ |

### RATINGS<sup>2</sup> (Design Maximum Values—Except as Noted)

#### Vertical Deflection Oscillator and Amplifier<sup>3</sup>

|  | Triode No. 1<br>Oscillator | Triode No. 2<br>Amplifier |            |
|--|----------------------------|---------------------------|------------|
| DC Plate Voltage . . . . .                                 | 330                        | 275                       | Volts Max. |
| Peak Positive Pulse Plate Voltage<br>(Abs. Max.) . . . . . | —                          | 1500                      | Volts      |
| Peak Negative Pulse Grid Voltage . . . . .                 | 400                        | 250                       | Volts Max. |
| Plate Dissipation <sup>4</sup> . . . . .                   | 1.5                        | 7.0                       | Watts Max. |
| Average Cathode Current . . . . .                          | 22                         | 50                        | Ma Max.    |
| Peak Cathode Current . . . . .                             | 77                         | 175                       | Ma Max.    |
| Grid Circuit Resistance . . . . .                          |                            | 2.2                       | Megohms    |
| Self Bias . . . . .  | 2.2                        |                           |            |

### AVERAGE CHARACTERISTICS

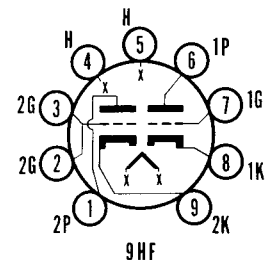
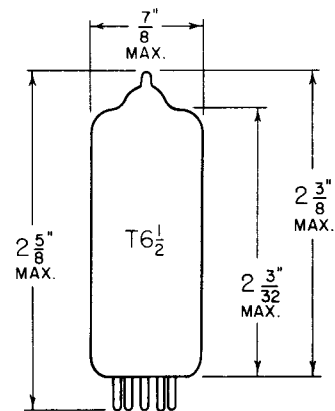
|   | Triode No. 1 | Triode No. 2 |                  |
|---|--------------|--------------|------------------|
| Plate Voltage . . . . .   | 250          | 150          | Volts            |
| Grid No. 1 Voltage . . . . .                                      | -11          | -17.5        | Volts            |
| Plate Current . . . . .   | 5.5          | 35           | Ma               |
| Transconductance . . . . .  | 2000         | 6500         | $\mu\text{mhos}$ |
| Amplification Factor . . . . .                                    | 17.5         | 6.0          |                  |
| Plate Resistance (approx.) . . . . .                              | 8750         | 925          | Ohms             |
| Grid Voltage for $I_b = 10 \mu\text{a}$ . . . . .                 | -20          | —            | Ohms             |
| Grid Voltage for $I_b = 50 \mu\text{a}$ . . . . .                 | —            | -44          | Volts            |
| Plate Current at $E_c = -24 \text{ Vdc}$ . . . . .                | —            | 10           | Ma               |
| Zero Bias Plate Current . . . . .                                 |              |              |                  |
| $E_b = 60 \text{ V}; E_c = 0$ (Instantaneous<br>Values) . . . . . | —            | 80           | Ma               |

## QUICK REFERENCE DATA

The Sylvania Type 6DE7 is a miniature double triode with dissimilar sections. Section No. 1 is intended for use as a Vertical Deflection Oscillator having medium  $\mu$  and Section No. 2 is intended for use as a Vertical Deflection Amplifier having low  $\mu$ .

The 10DE7 has a 600 Ma heater and the 13DE7 has a 450 Ma heater. Both types have controlled heater warm-up time and are identical to the 6DE7 except for heater characteristics.

The 10DE7 and 13DE7 are intended for use in television receivers employing series heater strings.



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 PRODUCTS INC.**

**RADIO TUBE DIVISION  
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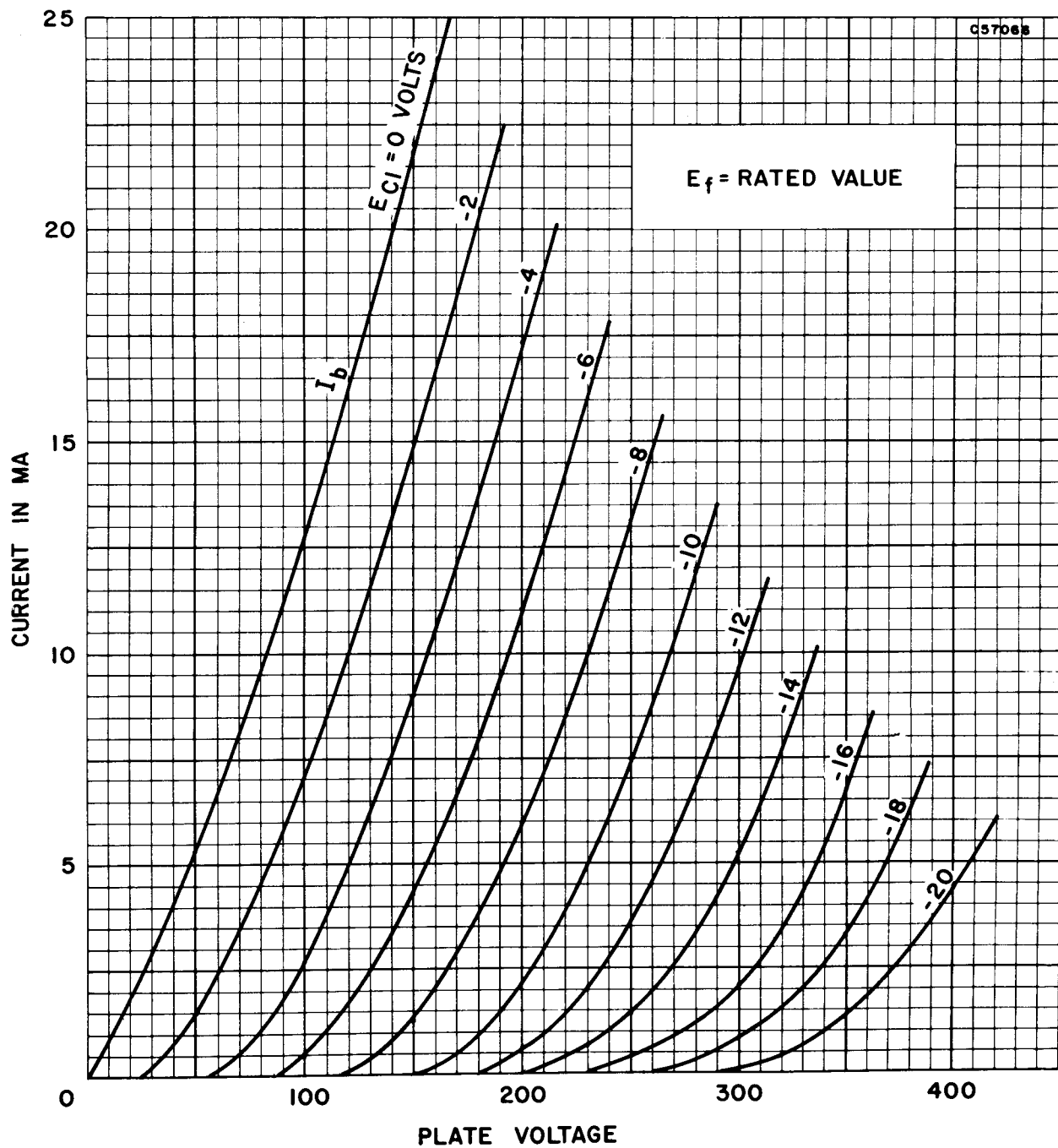
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**NOTES:**

1. *Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.*
2. *Design Maximum Ratings are the limiting values expressed with respect to bogey tubes at which satisfactory tube life can be expected to occur. To obtain satisfactory circuit performance, therefore, the equipment designed must establish the circuit design so that no design-maximum value is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.*
3. *For operation in a 525 line, 30 frame system as described in "Standards of Good Engineering Practice for Television Stations; Federal Communications Commission". The duty cycle of the voltage pulse must not exceed 15% of one scanning cycle.*
4. *In stages operating with grid leak bias, an adequate bias resistor or other suitable means is required to protect the tube in the absence of excitation.*

AVERAGE PLATE CHARACTERISTICS  
(TRIODE No. 1)



AVERAGE PLATE CHARACTERISTICS  
(TRIODE No. 2)

