

# 6GU7

## TWIN TRIODE

### DESCRIPTION AND RATING

The 6GU7 is a medium-mu twin triode of the 9-pin miniature type intended for use in the matrixing circuits of color television receivers. It can also be used in phase-inverter, multivibrator, and general-purpose amplifier applications.

### GENERAL

#### ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

|                                         | Series<br>Circuit* | Parallel<br>Circuit† |         |
|-----------------------------------------|--------------------|----------------------|---------|
| Heater Voltage, AC or DC . . . . .      | 6.3                | 6.3±0.6§             | Volts   |
| Heater Current . . . . .                | 0.6±0.04§          | 0.6¶                 | Amperes |
| Heater Warm-up Time, average# . . . . . | 11                 | ---                  | Seconds |

Direct Interelectrode Capacitances, approximateΔ

|                                                                | Section 1 | Section 2 |    |
|----------------------------------------------------------------|-----------|-----------|----|
| Grid to Plate: (g to p) . . . . .                              | 3.0       | 3.0       | pf |
| Input: g to (h + k). . . . .                                   | 3.4       | 3.6       | pf |
| Output: p to (h + k) . . . . .                                 | 0.44      | 0.34      | pf |
| Plate (Section 1 to Plate<br>(Section 2): (1p to 2p) . . . . . | 1.0       |           | pf |

#### MECHANICAL

Operating Position - Any

Envelope - T-6 1/2, Glass

Base - E9-1, Small Button 9-Pin

Outline Drawing - EIA 6-3

Maximum Diameter. . . . . 0.875 Inches

Maximum Over-all Length 2.625 Inches

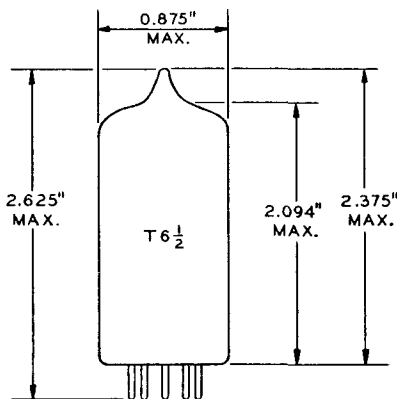
Maximum Seated Height . . . . . 2.375 Inches

### MAXIMUM RATINGS

#### DESIGN-MAXIMUM VALUES

|                                         |     |         |
|-----------------------------------------|-----|---------|
| Plate Voltage . . . . .                 | 330 | Volts   |
| Positive DC Grid Voltage. . . . .       | 0   | Volts   |
| Plate Dissipation, Each Plate . . . . . | 3.0 | Watts   |
| 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   |
| Grid Circuit Resistance                 |     |         |
| With Fixed Bias. . . . .                | 1.0 | Megohms |

#### PHYSICAL DIMENSIONS

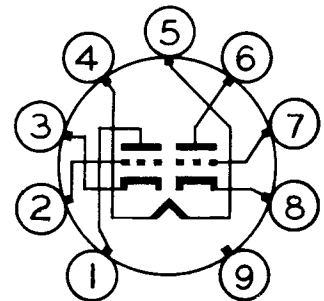


EIA 6-3

#### TERMINAL CONNECTIONS

- Pin 1 - Plate (Section 2)
- Pin 2 - Grid (Section 2)
- Pin 3 - Cathode (Section 2)
- Pin 4 - Heater
- Pin 5 - Heater
- Pin 6 - Plate (Section 1)
- Pin 7 - Grid (Section 1)
- Pin 8 - Cathode (Section 1)
- Pin 9 - No Connection

#### BASING DIAGRAM



EIA 9LP

MAXIMUM RATINGS (Cont'd)

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration:

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service 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, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A<sub>1</sub> AMPLIFIER, EACH SECTION

|                                         |       |              |
|-----------------------------------------|-------|--------------|
| Plate Voltage. . . . .                  | 250   | Volts        |
| Grid Voltage . . . . .                  | -10.5 | Volts        |
| Amplification Factor . . . . .          | 17    |              |
| Plate Resistance, approximate . . . . . | 5500  | Ohms         |
| Transconductance. . . . .               | 3100  | Micromhos    |
| Plate Current. . . . .                  | 11.5  | Milliamperes |
| Plate Current, approximate              |       |              |
| Ec = -14 volts . . . . .                | 4     | Milliamperes |
| Grid Voltage, approximate               |       |              |
| Ib = 50 Microamperes . . . . .          | -23   | Volts        |

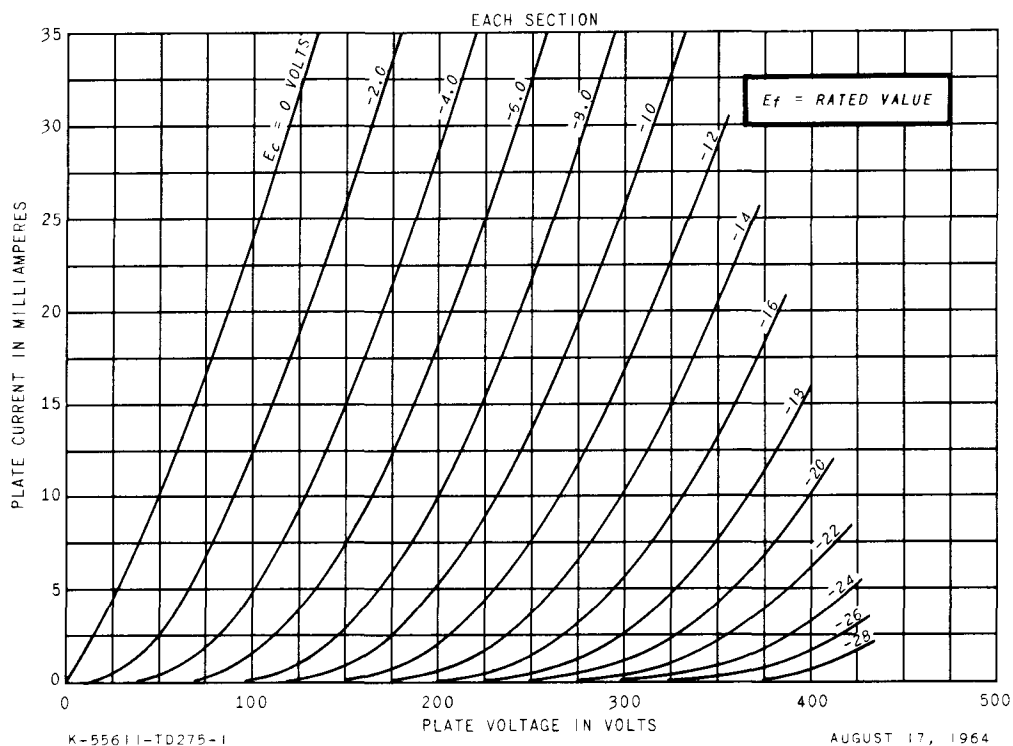
NOTES

- \* Operated with the heater in series with the heaters of other tubes having the same bogey heater current.
- ‡ Operated with the heater in parallel with the heaters of other tubes having the same bogey heater voltage.
- § For parallel heater operation, the equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance; for series heater operation, the equipment designer should design the equipment so that heater current is centered at the specified bogey value, with heater supply variations restricted to maintain heater current within the specified tolerance.
- ¶ Heater current of a bogey tube at Ef = 6.3 volts.
- # The time required for the voltage across the heater to reach 80 percent of the bogey value after applying 4 times the bogey heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the bogey heater voltage divided by the bogey heater current.
- Δ Without external shield.

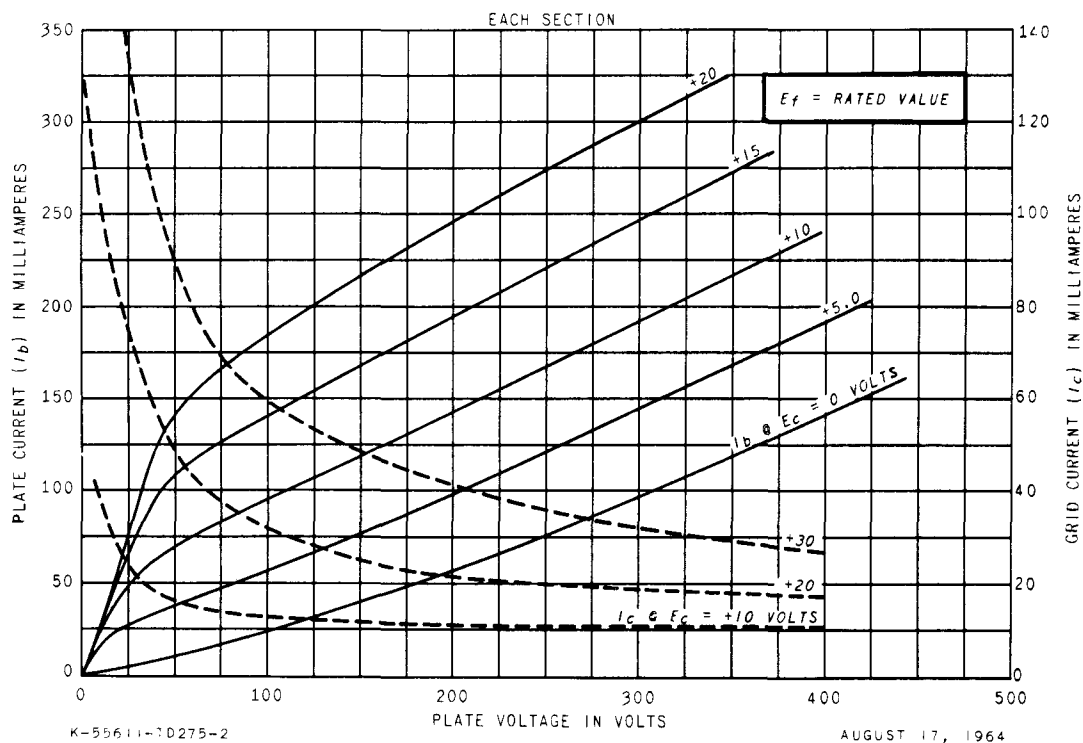
The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an

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# AVERAGE PLATE CHARACTERISTICS

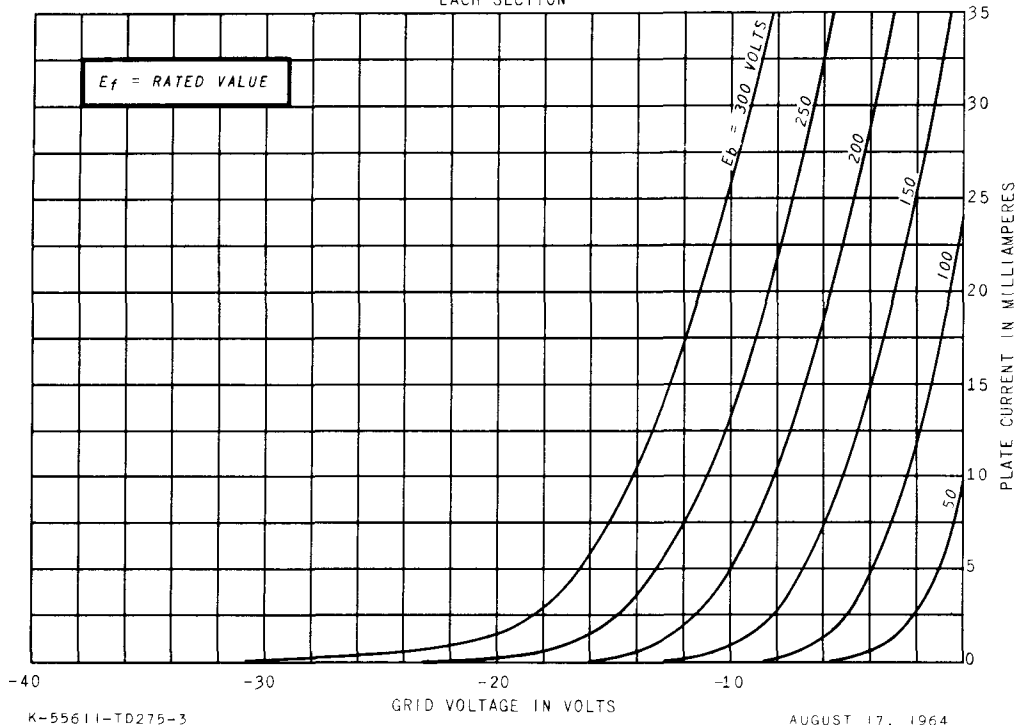


# AVERAGE PLATE CHARACTERISTICS



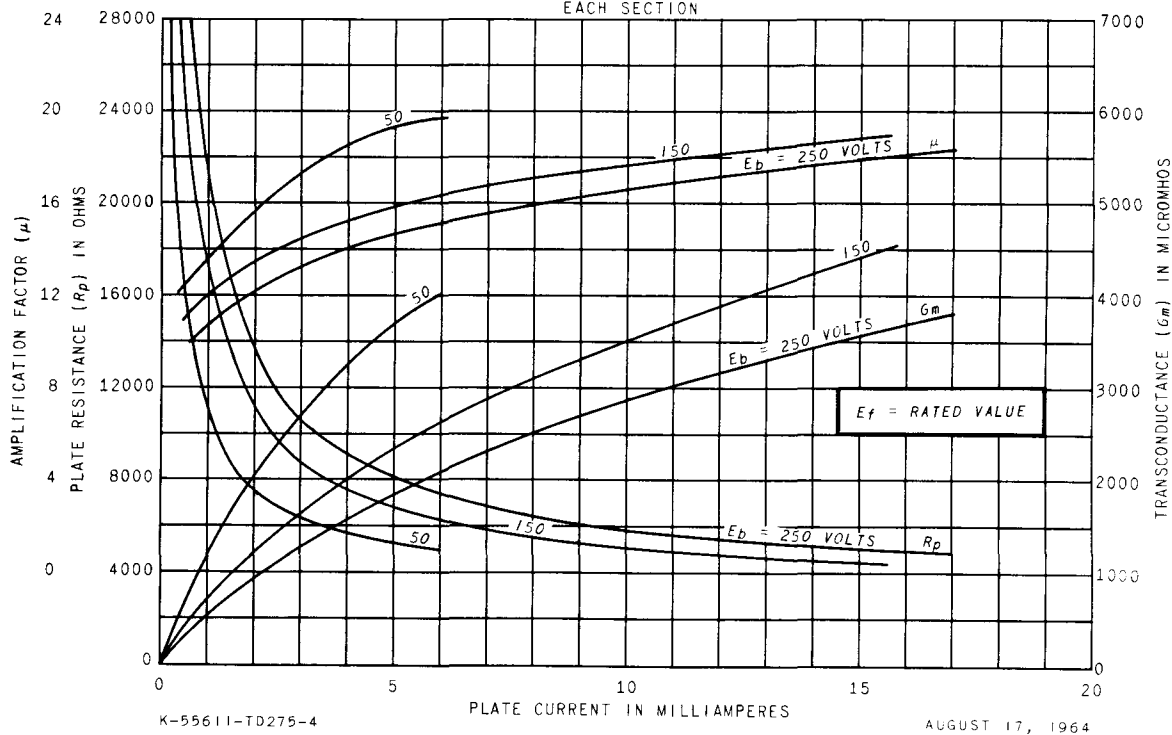
## AVERAGE TRANSFER CHARACTERISTICS

EACH SECTION



## AVERAGE CHARACTERISTICS

EACH SECTION



TUBE DEPARTMENT

**GENERAL  ELECTRIC**

Owensboro, Kentucky