

6JN6

COMPACTRON BEAM PENTODE

DESCRIPTION AND RATING

The 6JN6 is a compactron beam-power pentode primarily designed for use as the horizontal-deflection amplifier in television receivers. A separate connection is provided for the beam plates to minimize "snivets".

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC* 6.3±0.6 Volts

Heater Current†. 1.2 Amperes

Direct Interelectrode Capacitances, approximate§

Grid-Number 1 to Plate:

(g1 to p). 0.34 pf

Input: g1 to (h + k + g2 + b.p.) . 16 pf

Output: p to (h + k + g2 + b.p.) . 7.0 pf

MECHANICAL

Operating Position - Any

Envelope - T-12, Glass

Base - E12-74, Button 12-Pin

Outline Drawing - EIA 12-56

Maximum Diameter 1.563 Inches

Maximum Over-all Length. 2.875 Inches

Maximum Seated Height 2.500 Inches

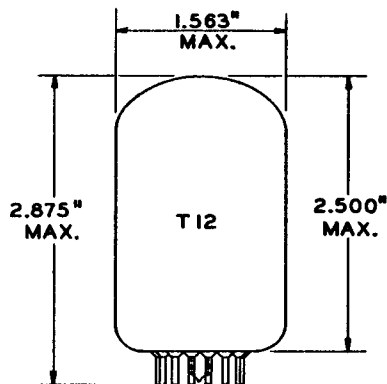
MAXIMUM RATINGS

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.

PHYSICAL DIMENSIONS

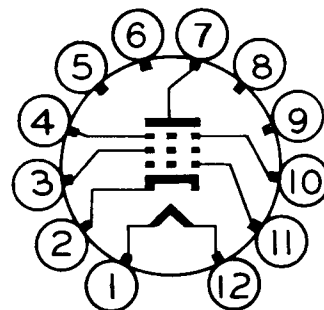


EIA 12-56

TERMINAL CONNECTIONS

- Pin 1 - Heater
- Pin 2 - Cathode
- Pin 3 - Grid Number 2 (Screen)
- Pin 4 - Beam Plates
- Pin 5 - No Connection
- Pin 6 - No Connection
- Pin 7 - Plate
- Pin 8 - No Connection
- Pin 9 - No Connection
- Pin 10 - Beam Plates
- Pin 11 - Grid Number 1
- Pin 12 - Heater

BASING DIAGRAM



EIA 12FK

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MAXIMUM RATINGS (Cont'd)

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE ¶—DESIGN-MAXIMUM VALUES

| | | | |
|---|-----------|-------|--------------|
| DC Plate-Supply Voltage (Boost + DC Power Supply) | | . 770 | Volts |
| Peak Positive Pulse Plate Voltage | | 6500 | Volts |
| Peak Negative Pulse Plate Voltage | | 1500 | Volts |
| Positive DC Beam Plate Voltage | | 70 | Volts |
| Screen Voltage | | 220 | Volts |
| Negative DC Grid-Number 1 Voltage | | 55 | Volts |
| Peak Negative Grid-Number 1 Voltage | | 330 | Volts |
| Plate Dissipation# | | 17.5 | Watts |
| Screen Dissipation | | 3.5 | Watts |
| DC Cathode Current | | 175 | Milliamperes |
| Peak Cathode Current | | 550 | Milliamperes |
| 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-Number 1 Circuit Resistance | | 1.0 | Megohms |
| Bulb Temperature at Hottest Point | | 220 | C |

CHARACTERISTICS AND TYPICAL OPERATION

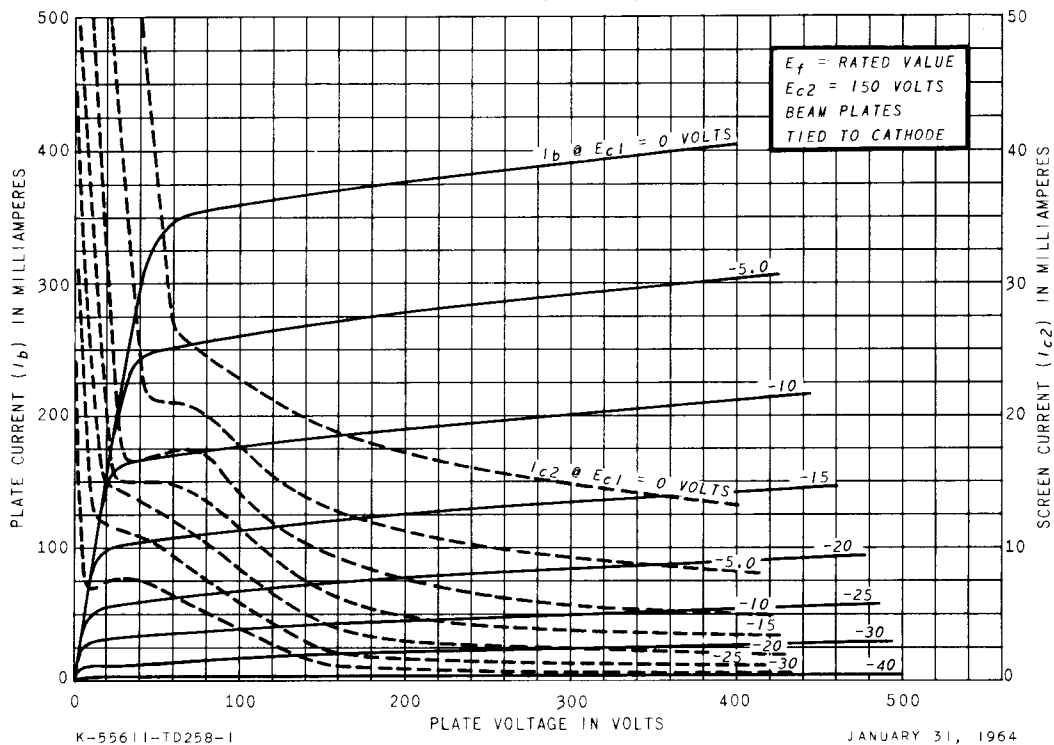
AVERAGE CHARACTERISTICS

| | | | | | |
|---|-----------|------|-----|-------|--------------|
| Plate Voltage | | 5000 | 60 | 250 | Volts |
| Beam Plates, Connected to Cathode at Socket | | | | | |
| Screen Voltage | | 150 | 150 | 150 | Volts |
| Grid-Number 1 Voltage | | --- | 0Δ | -22.5 | Volts |
| Plate Resistance, approximate | | --- | --- | 18000 | Ohms |
| Transconductance | | --- | --- | 7300 | Micromhos |
| Plate Current | | --- | 345 | 65 | Milliamperes |
| Screen Current | | --- | 27 | 1.8 | Milliamperes |
| Grid-Number 1 Voltage, approximate | | | | | |
| I _b = 1.0 Milliamperes | | -100 | --- | -42 | Volts |
| Triode Amplification Factor** | | --- | --- | 4.4 | |

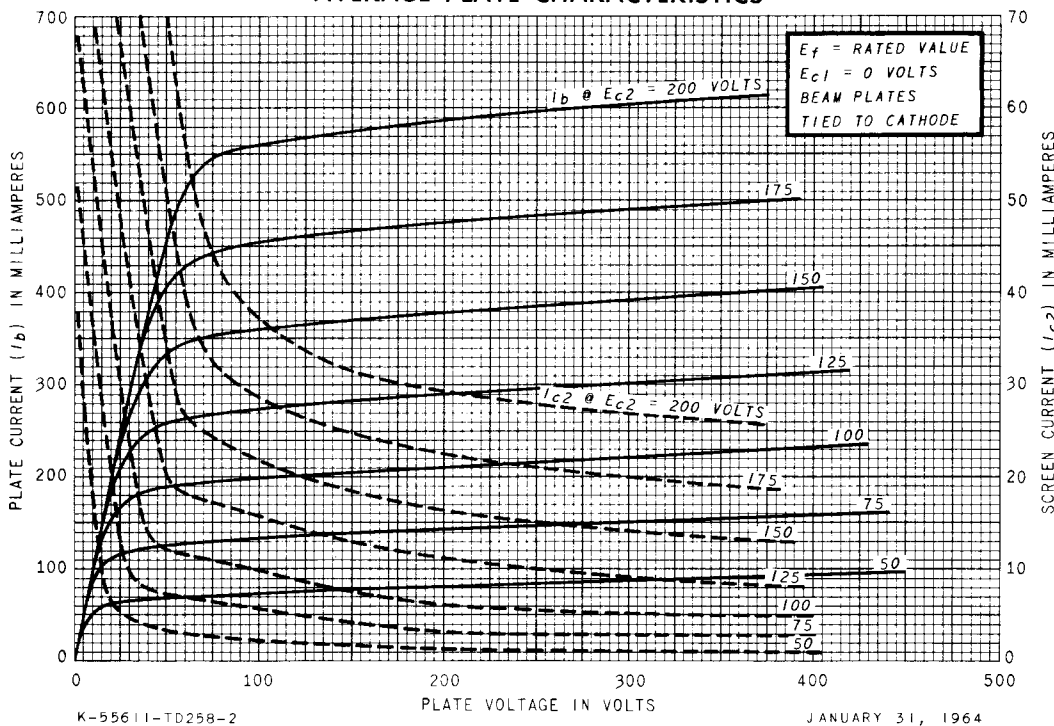
NOTES

- * 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.
- ‡ Heater current of a bogey tube at E_f = 6.3 volts.
- § Without external shield.
- ¶ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.
- # 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.
- Δ Applied for short interval (two seconds maximum) so as not to damage tube.
- ** Triode connection (screen triode to plate) with E_b = E_{c2} = 150 volts and E_{c1} = -22.5 volts.

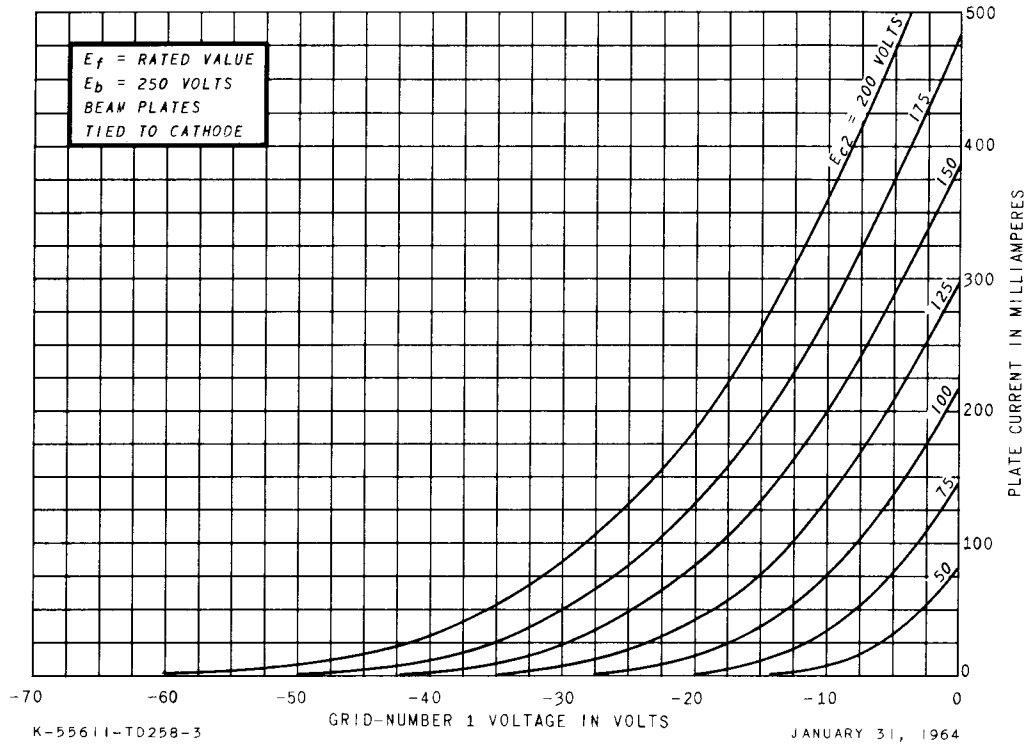
AVERAGE PLATE CHARACTERISTICS



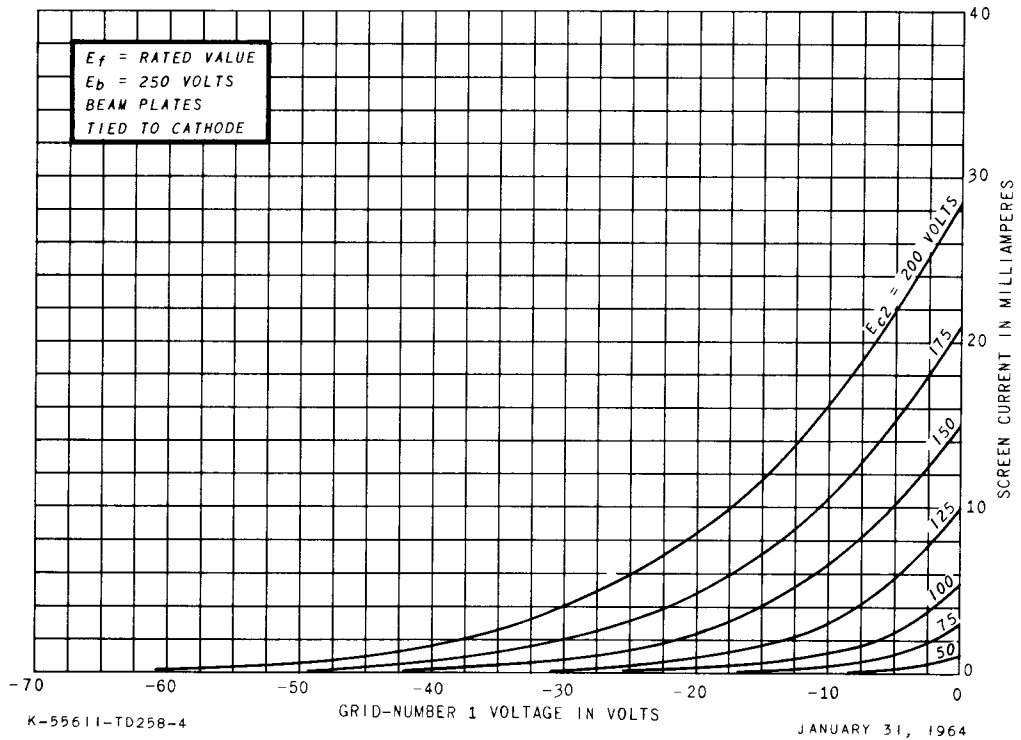
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



TUBE DEPARTMENT



Owensboro, Kentucky