6JN6-A
COMPACTRON BEAM PENTODE

DESCRIPTION AND RATING

The 6JN6-A 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".

The 6JN6-A is unilaterally interchangeable with the 6JN6, and differs in having a lower knee.

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
Minimum Diameter . . . . . . 1.437 Inches
Maximum Over-all Length . . . 2.875 Inches
Maximum Seated Height . . . . 2.500 Inches
Minimum Seated Height . . . . 2.250 Inches

MAXIMUM RATINGS

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogoey 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 bogoey 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

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 55 250 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 ................................... 15000 Ohms
Transconductance .................................................. 7300 Micromhos
Plate Current ....................................................... 345 70 Milliamperes
Screen Current ..................................................... 30 2.4 Milliamperes
Grid-Number 1 Voltage, approximate
  Ib = 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 Ef = 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 tied to plate) with Eb = Ec2 = 150 volts and Ec1 = -22.5 volts.