The 6AD10-A is a compactron containing a sharp-cutoff, dual-control pentode (Section 2) and a power pentode (Section 1). The dual-control pentode is intended for use as an FM detector and the power pentode as an audio-frequency output amplifier in color television receivers.

**GENERAL**

**ELECTRICAL**

Cathode - Coated Unipotential

Heater Characteristics and Ratings

- Heater Voltage, AC or DC: 6.3±0.6 Volts
- Heater Current: 1.05 Amperes

Direct Inter electrode Capacitances, approximate:

**Section 1**

- Grid-Number 1 to Plate: (1g1 to 1p) 0.26 pf
- Input: 1g1 to (h + 1k + 1g2 + b.p. + 2k + i.s.) 11 pf
- Output: 1p to (h + 1k + 1g2 + b.p. + 2k + i.s.) 11 pf

**Section 2**

- Grid-Number 1 to Plate: (2g1 to 2p) 0.038 pf
- Grid-Number 3 to Plate: (2g3 to 2p) 3.0 pf
- Grid-Number 1 to All Except Plate:
  - 2g1 to (h + 2k + 2g2 + 2g3 + i.s.) 7.0 pf
  - Grid-Number 3 to All:
  - 2g3 to (h + 2k + 2g1 + 2g2 + 2p + i.s.) 8.0 pf

**Section 2 (Cont’d)**

- Grid-Number 1 to Grid-Number 3:
  - (2g1 to 2g3) 0.13 pf
- Coupling:
  - Plate, Section 1 to Plate, Section 2
    - (1p to 2p) 0.18 pf

**MECHANICAL**

- Operating Position: Any
- Envelope: T-9, Glass
- Base: E12-70, Button 12-Pin
- Outline Drawing: EIA 9-59

- Maximum Diameter: 1.188 Inches
- Minimum Diameter: 1.062 Inches
- Maximum Over-all Length: 2.625 Inches
- Maximum Seated Height: 2.250 Inches
- Minimum Seated Height: 2.000 Inches

**PHYSICAL DIMENSIONS**

1.188" MAX. 1.062" MIN.

2.625" MAX. 2.250" MAX. 2.000" MIN.

EIA 9-59

**TERMINAL CONNECTIONS**

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

**BASING DIAGRAM**

EIA 12EZ
MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Section 1
Plate Voltage ............................................................................................................ 300 Volts
Screen Voltage ......................................................................................................... 300 Volts
Plate Dissipation ..................................................................................................... 12 Watts
Screen Dissipation .................................................................................................. 2.5 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-Number 1 Circuit Resistance
  With Fixed Bias .................................................................................................. 0.25 Megohms
  With Cathode Bias ............................................................................................. 0.5 Megohms

Section 2
Plate Voltage ............................................................................................................ 300 Volts
Positive Suppressor Voltage .................................................................................. 25 Volts
Negative Suppressor Voltage ................................................................................ 100 Volts
Screen Supply Voltage .......................................................................................... 300 Volts
Screen Voltage - See Screen Rating Chart
Positive DC Grid-Number 1 Voltage ..................................................................... 0 Volts
Negative DC Grid-Number 1 Voltage ..................................................................... 50 Volts
Plate Dissipation ................................................................................................... 1.7 Watts
Screen Dissipation ................................................................................................ 1.0 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-Number 3 Circuit Resistance ........................................................................ 0.68 Megohms
Grid-Number 1 Circuit Resistance
  With Fixed Bias .................................................................................................. 0.22 Megohms
  With Cathode Bias ............................................................................................. 0.47 Megohms

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

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogy 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 A1 AMPLIFIER

Section 1
Plate Voltage ............................................................................................................ 250 Volts
Screen Voltage ......................................................................................................... 250 Volts
Grid-Number 1 Voltage ......................................................................................... 8.0 Volts
Peak AF Grid-Number 1 Voltage ........................................................................... 8.0 Volts
Plate Resistance, approximate .............................................................................. 100000 Ohms
Transconductance ................................................................................................. 6500 Micromhos
Zero-Signal Plate Current ...................................................................................... 35 Milliamperes
Maximum-Signal Plate Current .............................................................................. 39 Milliamperes
Zero-Signal Screen Current ................................................................................... 2.5 Milliamperes
Maximum-Signal Screen Current ............................................................................ 7.0 Milliamperes
Load Resistance ...................................................................................................... 5000 Ohms
Total Harmonic Distortion, approximate .............................................................. 10 Percent
Maximum-Signal Power Output ............................................................................. 4.2 Watts
CHARACTERISTICS AND TYPICAL OPERATION (Cont’d)

AVerAGE CHARACTERISTICS

Section 2
Plate Voltage ........................................................................................................... 150 Volts
Suppressor Voltage ............................................................................................... 0 Volts
Screen Voltage ......................................................................................................... 100 Volts
Cathode-Bias Resistor ......................................................................................... 180 Ohms
Plate Resistance, approximate ........................................................................... 0.11 Megohms
Grid-Number 1 Transconductance ..................................................................... 2500 Microhms
Grid-Number 3 Transconductance ...................................................................... 850 Microhms
Plate Current .......................................................................................................... 2.8 Milliamperes
Screen Current ........................................................................................................ 3.4 Milliamperes
Grid-Number 1 Voltage, approximate
 Ib = 20 Microamperes ....................................................................................... -4.0 Volts
Grid-Number 3 Voltage, approximate
 Ib = 20 Microamperes ....................................................................................... -3.0 Volts

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 at Ef = 6.3 volts.

  △ 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 express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.
OPERATION CHARACTERISTICS

SECTION 1

$E_t =$ RATED VALUE
$E_b =$ 250 VOLTS
$E_c2 =$ 250 VOLTS
$E_c1 =$ -8.0 VOLTS
$E_{sig} =$ 5.6 VOLTS (RMS)

POWER OUTPUT IN MILLIAMPERES

RMS CURRENT IN PERCENT

TOTAL HARMONIC DISTORTION IN PERCENT

PLATE CURRENT

MAXIMUM SIGNAL PLATE OR SCREEN CURRENT IN MILLIAMPERES

LOAD RESISTANCE IN OHMS

AVerAGE PLATE CHARACTERISTICS

SECTION 2

$E_t =$ RATED VALUE
$E_c2 =$ 100 VOLTS
$E_c1 =$ 0 VOLTS

PLATE CURRENT IN MILLIAMPERES

PLATE VOLTAGE IN VOLTS

PLATE CURRENT IN MILLIAMPERES
AVERAGE PLATE CHARACTERISTICS

SECTION 2

\[ E_1 = \text{RATED VALUE} \]
\[ E_{c3} = 0 \text{ VOLTS} \]
\[ E_{c2} = 100 \text{ VOLTS} \]

Plate Current in Milliamperes

Plate Voltage in Volts

AVERAGE TRANSFER CHARACTERISTICS

SECTION 2

\[ E_1 = \text{RATED VALUE} \]
\[ E_b = 150 \text{ VOLTS} \]
\[ E_{c3} = 0 \text{ VOLTS} \]

Plate Current in Milliamperes

Grid-Number 1 Voltage in Volts
AVERAGE TRANSFER CHARACTERISTICS

SECTION 2

$E_t =$ RATED VALUE
$E_b =$ 150 VOLTS
$E_c1 =$ 0 VOLTS

PLATE CURRENT ($I_b$) IN MILLIAMPERES

GRID-NUMBER 3 VOLTAGE IN VOLTS

SCREEN CURRENT ($I_c2$) IN MILLIAMPERES

AVERAGE TRANSFER CHARACTERISTICS

SECTION 2

$E_t =$ RATED VALUE
$E_b =$ 150 VOLTS
$E_c3 =$ 0 VOLTS

PLATE CURRENT IN MILLIAMPERES

GRID-NUMBER 1 VOLTAGE IN VOLTS
SCREEN CURRENT IN MILLIAMPERES

GRID-VOLTAGE 1 VOLTAGE IN VOLTS

SCREEN RATING CHART

SCREEN DISSIPATION IN WATTS

SCREEN VOLTAGE IN VOLTS

AREA OF PERMISSIBLE OPERATION

E\text{f} = \text{RATED VALUE}
E_b = 150 \text{ VOLTS}
E_c3 = 0 \text{ VOLTS}

TUBE PRODUCTS DEPARTMENT
Owensboro, Kentucky 42301

GENERAL ELECTRIC