6AR11
COMPACTRON TWIN PENTODE

DESCRIPTION AND RATING

The 6AR11 is a compactron containing two remote-cutoff pentodes. It is designed primarily for intermediate-frequency amplifier service in television receivers.

GENERAL

ELECTRICAL
Cathode - Coated Unipotential
Heater Characteristics and Ratings
Heater Voltage, AC or DC* ... 6.3±0.6 Volts
Heater Current†... ... 0.8 Amperes
Direct Inter-electrode Capacitances§

Section 1
Grid-Number 1 to Plate: (1g1 to 1p) 0.026 pf
Input: 1g1 to (1k + 1g2 + 1g3 + h + i.s.). ... 10 pf
Output: 1p to (1k + 1g2 + 1g3 + h + i.s.). ... 2.8 pf

Section 2
Grid-Number 1 to Plate: (2g1 to 2p) 0.026 pf
Input: 2g1 to (2k + 2g2 + 2g3 + 1g3 + h + i.s.). ... 10 pf
Output: 2p to (2k + 2g2 + 2g3 + 1g3 + h + i.s.). ... 3.0 pf

Coupling
Plate to Plate: (1p to 2p),
maximum ... ... ... ... 0.016 pf
Grid-Number 1, Section 1, to Plate, Section 2: (1g1 to 2p),
maximum ... ... ... ... 0.002 pf
Grid-Number 1, Section 2, to Plate, Section 1: (2g1 to 1p),
maximum ... ... ... ... 0.004 pf

MECHANICAL
Operating Position - Any
Envelope - T-9, Glass
Base - E12-70, Button 12-Pin
Outline Drawing - EIA 9-58
Maximum Diameter ... ... ... 1.188 Inches
Minimum Diameter ... ... ... 1.062 Inches
Maximum Over-all Length ... ... ... 2.375 Inches
Maximum Seated Height ... ... ... 2.000 Inches
Minimum Seated Height ... ... ... 1.750 Inches

PHYSICAL DIMENSIONS
TERMINAL CONNECTIONS
BASING DIAGRAM

Pin 1 - Heater
Pin 2 - Plate (Section 2)
Pin 3 - Grid Number 2 (Screen)
   (Section 2)
Pin 4 - Grid Number 3 (Suppressor)
   (Section 2)
Pin 5 - Grid Number 1 (Section 2)
Pin 6 - Cathode (Screen 2)
Pin 7 - Grid Number 3 (Suppressor)
   (Section 1) and Internal
   Shield
Pin 8 - Plate (Section 1)
Pin 9 - Grid Number 2 (Screen)
   (Section 1)
Pin 10 - Grid Number 1 (Section 1)
Pin 11 - Cathode (Section 1)
Pin 12 - Heater

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.
MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES, Each Section
Plate Voltage ......................................................... 330 Volts
Suppressor Voltage .................................................. 0 Volts
Screen-Supply Voltage ............................................. 330 Volts
Screen Voltage – See Screen Rating Chart
Positive DC Grid-Number 1 Voltage ......................... 0 Volts
Plate Dissipation ..................................................... 3.1 Watts
Screen Dissipation ................................................. 0.65 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

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 equipment 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

AVERAGE CHARACTERISTICS, Each Section
Plate Voltage ......................................................... 125 Volts
Suppressor, Connected to Cathode at Socket
Screen Voltage ...................................................... 125 Volts
Cathode-Bias Resistor ............................................. 56 Ohms
Plate Resistance, approximate .................................. 0.2 Megohms
Transconductance ................................................... 10500 Micromhos
Plate Current ......................................................... 11 Milliamperes
Screen Current ..................................................... 3.5 Milliamperes
Grid-Number 1 Voltage, approximate
  Gm = 50 Micromhos ............................................. -15 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 tube at Ef = 6.3 volts.
§ With external shield (EIA 309) connected to cathode of section under test.
AVERAGE TRANSFER CHARACTERISTICS

Each Section

$E_t =$ RATED VALUE
$E_b = 125$ VOLTS
$E_c = 0$ VOLTS

GRID-NUMBER 1 VOLTAGE IN VOLTS

PLATE CURRENT IN MILLIAMPERES

SCREEN CURRENT IN MILLIAMPERES

GRID-NUMBER 1 VOLTAGE IN VOLTS

OCtober 8, 1963
AVERAGE TRANSFER CHARACTERISTICS

\[ E_T = \text{RATED VALUE} \]
\[ E_b = 125 \text{ VOLTS} \]
\[ E_c3 = 0 \text{ VOLTS} \]
TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky