6AG7
POWER PENTODE
SINGLE-ENDED METAL TYPE

GENERAL DATA

Electrical:
Heater, for Unipotentential Cathode:
  Voltage ...... 6.3 ...... ac or dc volts
  Current ...... 0.65 ...... amp

Direct Interelectrode Capacitances:
  With Pin No.1 and Pin No.3 connected to Pin No.5
  Grid No.1 to Plate ...... 0.06 max. ...... \mu f
  Input ...... 13 ...... \mu f
  Output ...... 7.5 ...... \mu f

Characteristics, Amplifier Class A1
  Plate Voltage ...... 300 volts
  Grid-No.2 Voltage ...... 150 volts
  Grid-No.1 Voltage ...... -3 volts
  Peak AF Grid-No.1 Signal Voltage ...... 3 volts
  Zero-Signal DC Plate Current ...... 30 ma
  Max.-Signal DC Plate Current ...... 30.5 ma
  Zero-Signal DC Grid-No.2 Current ...... 7 ma
  Max.-Signal DC Grid-No.2 Current ...... 9 ma
  Plate Resistance (Approx.) ...... 0.13 megohm
  Transconductance ...... 11000 \mu mhos
  Load Resistance ...... 10000 ohms
  Total Harmonic Distortion ...... 7 per cent
  Max.-Signal Power Output ...... 3 watts

Mechanical:
  Mounting Position ...... Any
  Maximum Overall Length ...... 3-1/4"
  Seated Length ...... 2-19/32" ± 3/32"
  Maximum Diameter ...... 1-5/16"
  Bulb ...... Metal Shell, MT-8
  Base ...... Small-Wafer Octal 8-Pin (JETEC No.88-21)

Basing Designation for BOTTOM VIEW ...... BY

Pin 1 - Shell, Grid No.3
Pin 2 - Heater
Pin 3 - No Connection
Pin 4 - Grid No.1

Pin 5 - Cathode
Pin 6 - Grid No.2
Pin 7 - Heater
Pin 8 - Plate

AMPLIFIER - Class A1

Maximum Ratings, Design-Center Values:
  PLATE VOLTAGE ...... 300 max. volts
  GRID-No.2 (SCREEN) VOLTAGE ...... 300 max. volts

Indicates a change

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DATA 1
GRID-No.1 (CONTROL-GRID) VOLTAGE:
- Positive bias value .............. 0 max. volts
- PLATE DISSIPATION ............... 9 max. watts
- GRID-No.2 INPUT ................. 1.5 max. watts

PEAK HEATER-CATHODE VOLTAGE:
- Heater negative with respect to cathode 90 max. volts
- Heater positive with respect to cathode 90 max. volts

Typical Operation in 4-Mc Bandwidth Video Amplifier
Circuit of Fig. 1:

With Grid-Resistor Bias
Used where dc restoration is accomplished in grid-No.1 circuit of the 6A07

- Plate Supply Voltage .............. 300 volts
- Grid-No.2 Voltage† ................ 115 volts
- Zero-Signal Grid-No.1 Voltage .... 0 volts
- Grid-No.1 Resistor .......................... 0.25 to 0.5 megohms
- Grid-No.1 Signal Voltage (Peak to Peak) .......................... 4 volts
- Zero-Signal Plate Current .............. 45 ma
- Zero-Signal Grid-No.2 Current ........ 13 ma
- Load Resistor .......................... 3500 ohms
- Voltage Output (Peak to Peak) ........ 135 volts

With Cathode-Resistor Bias

- Plate Supply Voltage .............. 300 volts
- Grid-No.2 Voltage§ ................ 125 volts
- from series resistor of .............. 25000 ohms
- Grid-No.1 Voltage ..................... -2 volts
- Cathode Resistor (Bypassed with 250 µf, approx.) .............. 57 ohms
- Grid-No.1 Signal Voltage (Peak to Peak) .......................... 4 volts
- Zero-Signal Plate Current .............. 28 ma
- Zero-Signal Grid-No.2 Current ........ 7 ma
- Load Resistor .......................... 3500 ohms
- Voltage Output (Peak to Peak) ........ 140 volts

Maximum Circuit Values:

- Grid-No.1-Circuit Resistance:
  - For fixed-bias operation .............. 0.25 max. megohms
  - For cathode-bias operation .............. 1.0 max. megohms

† Obtained from supply having good regulation.
§ Obtained preferably from 300-volt plate supply through resistor of value shown.

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**Fig. 1 - Typical Video Voltage Amplifier Circuit Having Bandwidth of 4 Mc.**

- \( C_1 = 9.5 \mu \text{f} \): Tube Output Capacitance + Socket Capacitance + Wiring Capacitance + Coil Capacitance
- \( C_2 = 19 \mu \text{f} \): Kinescope Capacitance + Socket Capacitance + Wiring Capacitance + Coil Capacitance
- \( L_1 = 250 \mu \text{h} \): Filter Inductor
- \( L_2 = 125 \mu \text{h} \): Filter Inductor
- \( R_1 = 20000\text{-Ohm} \), Non-Reactive Resistor
- \( R_L = 3500\text{-Ohm}, 10\text{-Watt}, \) Non-Reactive Resistor

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AVERAGE PLATE CHARACTERISTICS
WITH $E_{C1}$ AS VARIABLE

$E_f = 6.3$ VOLTS  GRID-N°2 VOLTS = 150

GRID-N°1 $(I_{C1})$ MILLIAMPERES

GRID-N°2 $(I_{C2})$ MILLIAMPERES

PLATE $(I_B)$ OR GRID-N°2 $(I_{C2})$ MILLIAMPERES

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