



ELECTRONIC TUBE REFERENCE

12A6GT

Power - Beam Single (NOT sweep) (under 10W) electronic tube

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
BEAMPOWER

Glass tubular beam-power output tube for Class-A audio-frequency amplification in radio and related receiving equipment, using a 12.6 V heater.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	7
NOMINAL HEATER	12.6 V / 150 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Beam Power	
TRANSCONDUCTANCE	0.003 S
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	7.5 W
MAXIMUM SCREEN DISSIPATION	1.5 W

12A6GT — Beam Power Amplifier

The **12A6GT** is an indirectly heated beam power amplifier designed for audio-frequency power amplification. It features a unipotential cathode and is housed in a glass envelope, offering efficient power output in Class A1 amplifier applications.

Physical Specifications and Basing

The 12A6GT is constructed with a T-9 glass bulb and an intermediate shell octal base. Although octal bases typically accommodate eight pins, this tube uses a 7-pin configuration where Pin 6 is omitted. The tube does not have a top cap.

The physical dimensions of the tube are:

- **Maximum Diameter:** 1 5/16 inches
- **Maximum Overall Length:** 3 1/4 inches
- **Maximum Seated Height:** 2 11/16 inches

The pin connections, viewed from the bottom of the base, are assigned as follows:

Pin Number	Connection
Pin 1	No Connection
Pin 2	Heater
Pin 3	Plate
Pin 4	Grid 2 (Screen Grid)
Pin 5	Grid 1 (Control Grid)
Pin 6	None (Omitted Pin)
Pin 7	Heater
Pin 8	Cathode & Deflector

The tube operates with its unipotential cathode and deflector connected together at Pin 8.

Heater and Interelectrode Capacitances

The 12A6GT features a heater designed for operation in circuits providing a nominal 12.6 V.

- **Heater Voltage:** 12.6 V
- **Heater Current:** 0.15 A
- **Calculated Heater Power:** 1.89 W (calculated as 12.6 V × 0.15 A)

When measured with a standard RMA shield (type M8-308), the direct interelectrode capacitances of the tube are:

- **Control Grid to Cathode:** 9.0 μF
- **Plate to Cathode:** 9.0 μF
- **Grid to Plate:** 0.6 μF (Maximum)

Maximum Ratings

The maximum ratings for the 12A6GT are established in accordance with the RMA Standard M8-210. These ratings represent the limiting values of operating and environmental conditions for the tube:

Rating Parameter	Maximum Value
Maximum Plate Voltage	250 V
Maximum Screen (Grid 2) Voltage	250 V
Maximum Plate Dissipation	7.5 W
Maximum Screen (Grid 2) Dissipation	1.5 W

Typical Operating Conditions and Characteristics

In typical Class A1 audio-frequency amplifier service, the 12A6GT operates with equal plate and screen voltages. The typical operating parameters are defined as follows:

- **Heater Voltage:** 12.6 V
- **Heater Current:** 0.15 A
- **Plate Voltage:** 250 V
- **Screen Voltage:** 250 V
- **Control Grid (Grid 1) Voltage:** -12.5 V
- **Peak AF Signal Voltage:** 12.5 V
- **Zero-Signal Plate Current:** 30 mA
- **Maximum-Signal Plate Current:** 32 mA
- **Zero-Signal Screen Current:** 3.5 mA
- **Maximum-Signal Screen Current:** 5.5 mA
- **Transconductance:** 3000 μmhos
- **Load Resistance:** 7500 Ω
- **Total Harmonic Distortion:** 7%
- **Power Output:** 3.0 W

The plate resistance and amplification factor are not specified for these typical operating conditions.

Grid Circuit Resistance Limits

To ensure stable operation and prevent thermal runaway or bias instability under maximum rated conditions, limits are placed on the direct current (DC) resistance in the control grid circuit:

- **Self-Bias Operation:** The DC resistance in the grid circuit must not exceed **0.5 Megohm**.
- **Fixed Bias Operation:** The DC resistance in the grid circuit must not exceed **0.1 Megohm**.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1961 Tung Sol

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1961 TUNG SOL

Section 1 · Beam Power

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Control Grid to Cathode	9 pF	—
Plate to Cathode	9 pF	—
Grid to Plate	0.6 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Or Filament Voltage	12.6 V	—
Max Imum Plate Voltage	250 V	—
Max Imum Screen Voltage	2 V	—
Maximum Plate Dissipation	7.5 W	—
Max Imum Screen Dissipation	1.5 W	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	250 V	—
Screen Voltage	250 V	—
Control GrId Voltage	-12.5 V	—
Peak Af Signal Voltage	12.5 V	—
Zero-Signal Plate Current	30 mA	—
Zero-Signal Screen Current	3.5 mA	—
Max Imum=—S Gnal Plate Current	3 mA	—
Transconductance	3000 uS	—
Load Resistance	7500 ohm	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power Output	3 W	—

TUBE TINKER

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