

GENERAL DESCRIPTION

APPLICATION:

The Hytron Bantam 6W6GT is a cathode type high-mu beam-power amplifier intended for use in the output stage of automobile receivers having low voltage power supplies. Designed along lines similar to the original beam-power type 6L6G, this tube provides high power output with high sensitivity and high efficiency.

PHYSICAL CHARACTERISTICS: BULB T-9D

RATINGS AND CHARACTERISTICS

Heater:
Voltage 6.5 volts AC or DC
Current 1.25 amps.
Note: Voltage between heater and cathode should be kept at a minimum if direct connection is not possible.

AMPLIFIER OPERATION - SINGLE TUBE

CLASS A	
Plate Voltage	135 volts max.
Screen Voltage	135 volts max.
Grid Voltage#	-9.5 volts
Plate Current (Zero Signal)	56.0 ma.
Plate Current (Max. Signal)	61.0 ma.
Screen Current (Zero Signal)	2.8 ma.
Screen Current (Max. Signal)	12.0 ma.
Signal Input Volts	6.7 volts RMS
Mutual Conductance	9000 umhos.
Amplification Factor	215
Load Resistance	2000 ohms
Harmonic Distortion:	
Second	2 1/2%
Third	3%
Total	11%
Maximum Power Output	3.3 watts

BASING CONNECTIONS

Pin 1 - Shell	Pin 5 - Grid
Pin 2 - Heater	Pin 6 - Open
Pin 3 - Plate	Pin 7 - Heater
Pin 4 - Screen	Pin 8 - Cathode

The type of input coupling used should not introduce too much resistance in the grid circuits. Transformer or impedance coupling devices are recommended. When the grid circuit has a resistance not higher than 0.1 megohm fixed bias may be used; for higher values, self-bias is required. With self-bias, the grid circuit may have a resistance not to exceed 0.5 megohm. Where self-bias is used, the cathode resistor must be shunted by a suitable by-pass filter condenser to prevent degeneration at low audio frequencies.

JETEC DATA
JOINT ELECTRON TUBE ENGINEERING COUNCIL
COMMITTEE ON RECEIVING TUBES

JETEC Type 6W6GT
Release 191B

JETEC TYPE 6W6GT

BEAM PENTODE

MECHANICAL DATA

Coated unipotential cathode		
Outline drawing.	9-11 or 9-41	Bulb. T-9
Base	B6-81 or B7-7.	intermediate shell octal
	or .B6-84 or B7-59	short intermediate shell octal
Maximum diameter		1-9/32"
Maximum overall length		3-5/16"
Maximum seated height.		2-3/4 "
Pin connections.		Basing 7AC
*Pin 1 - No connection		Pin 5 - Grid #1
Pin 2 - Heater		Pin 7 - Heater
Pin 3 - Plate		Pin 8 - Cathode, grid #3
Pin 4 - Grid #2		

*Pin #1 omitted on Base Nos. B6-81 and B6-84.

Mounting position. Any

ELECTRICAL DATA

Direct Interelectrode Capacitances (Approx.)

Grid to plate: (g1 to p).	0.8	μf
Input: g1 to (h+k+g2+g3).	15.0	μf
Output: p to (h+k+g2+g3).	9.0	μf

Heater Characteristics

Heater voltage	6.3	volts
Heater current	1.2	amperes
Maximum heater-cathode voltage		
Heater negative with respect to cathode: Total D.C. and peak.	200	volts
Heater positive with respect to cathode: D.C.	100	volts
	Total D.C. and peak.	200 volts

Ratings - Class A₁ Amplifier

Maximum plate voltage.	300	volts
Maximum grid #2 voltage.	150	volts
Maximum plate dissipation.	10	watts
Maximum grid #2 dissipation.	1.25	watts
Maximum grid #1 circuit resistance		
Fixed bias	0.1	megohm
Cathode bias	0.5	megohm

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Typical Operating Conditions and Characteristics, Class A₁ Amplifier (single Tube)

Plate voltage.	110	200	volts
Grid #2 voltage.	110	125	volts
Grid #1 voltage.	-7.5	---	volts
Cathode bias resistor.	---	180	ohms
Peak AF grid #1 voltage.	7.5	8.5	volts
Zero-signal plate current.	49	46	ma
Maximum-signal plate current.	50	47	ma
Zero-signal grid #2 current.	4.0	2.2	ma
Maximum-signal grid #2 current.	10.0	8.5	ma
Plate resistance (approx.)	13,000	28,000	ohms
Transconductance	8000	8000	μmhos
Maximum-signal power output.	2.1	3.8	watts
Load resistance.	2000	4000	ohms
Total harmonic distortion (approx.)	10	10	%

Ratings § Vertical Deflection Amplifier §§ Triode Connected

Maximum DC plate voltage	300	volts
Maximum peak positive voltage (absolute maximum)	1200	volts
Maximum plate dissipation #.	7.5	watts
Maximum peak negative grid voltage	250	volts
Maximum average cathode current.	60	ma
Maximum peak cathode current	180	ma
Maximum grid circuit resistance (cathode bias)	2.2	megohms

Ratings § Vertical Deflection Amplifier §§ Pentode Connected

Maximum DC plate voltage	300	volts
Maximum peak positive plate voltage (absolute maximum)	1500	volts
Maximum DC grid #2 voltage	150	volts
Maximum plate dissipation #.	7.0	watts
Maximum grid #2 dissipation.	1.0	watt
Maximum peak negative grid #1 voltage.	250	volts
Maximum average cathode current.	60	ma
Maximum peak cathode current	180	ma
Maximum grid #1 circuit resistance (cathode bias).	2.2	megohms

Average Characteristics - Triode Connected

Plate voltage.	225	volts
Grid voltage	-30	volts
Plate current.	22	ma
Transconductance	3800	μmhos
Amplification factor	6.2	
Plate resistance (approx.)	1600	ohms
Grid voltage (approx.) for I _b = 0.5 ma	-42	volts

\$All values are evaluated on design center system except where absolute maximum is stated.

\$\$For operation in a 525 line, 30 frame system as described in "Standards of Good Engineering Practice for Television Broadcasting Stations; Federal Communications Commission". The duty cycle of the voltage pulse not to exceed 15% of a 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.

Refer to "Interpretation of Receiving Tube Ratings"

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