12V6-GT

BEAM POWER AMPLIFIER

TENTATIVE DATA

RCA-12V6-GT is a beam power tube of the heater-cathode type intended primarily for use in the output amplifier of automobile radio receivers operating from a 12-volt storage battery.

The application of directed electron beam principles in the design of this tube makes it capable of producing relatively high power output with high power sensitivity. For example, a single 12V6-GT operated with a plate and grid-No.2 voltage of 250 volts can deliver a maximum-signal power output of 4.5 watts with a driving voltage of only about 12 volts. These features together with relatively low plate-current drain make the 12V6-GT especially suitable for use in the output stage of automobile receivers.

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:		
Voltage (AC or DC)	12.6	volts
Current	0.225	ampere
Direct Interelectrode Capacitances (Approx. without external shield):		
Grid No.1 to Plate	0.7	μμf
Input	9.0	μμf
Output	7.5	μμf

Mechanical:

Mounting Position	Any
Maximum Overall Length	3-5/16"
Maximum Seated Length	2-3/4"
Maximum Diameter	1-9/32"
Bulb	T-9
Base	Intermediate-Shell Octal 7-Pin (JETEC No.B7-7)

SINGLE-TUBE CLASS A_1 AMPLIFIER

Maximum Ratings, *Design-Center Values*:

PLATE VOLTAGE	315 max.	volts
GRID-No.2 (SCREEN) SUPPLY VOLTAGE	315 max.	volts
GRID-No.2 VOLTAGE	See Rating Chart	
PLATE DISSIPATION	12 max.	watts
GRID-No.2 INPUT	2 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:

Plate Voltage	180	250	315	volts
Grid-No.2 Voltage	180	250	225	volts
Grid-No.1 Voltage	-8.5	-12.5	-13	volts
Peak AF Grid-No.1 Voltage	8.5	12.5	13	volts
Zero-Signal Plate Current	29	45	34	ma
Max-Signal Plate Current	30	47	35	ma
Zero-Signal Grid-No.2 Current (Approx.)	3	4.5	2.2	ma
Max.-Signal Grid-No.2 Current (Approx.)	4	7	6	ma
Plate Resistance (Approx.)	50000	50000	80000	ohms
Transconductance	3700	4100	3750	μmhos
Load Resistance	5500	5000	8500	ohms
Total Harmonic Distortion	8	8	12	per cent
Max.-Signal Power Output	2	4.5	5.5	watts

PUSH-PULL CLASS AB_1 AMPLIFIER

Values are for two tubes

Maximum Ratings, *Design-Center Values*:

PLATE VOLTAGE	315 max.	volts
GRID-No.2 (SCREEN) SUPPLY VOLTAGE	315 max.	volts
GRID-No.2 VOLTAGE	See Rating Chart	
PLATE DISSIPATION	12 max.	watts
GRID-No.2 INPUT	2 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:

Plate Voltage	250	285	volts
Grid-No.2 Voltage▲	250	285	volts
Grid-No.1 Voltage▲	-15	-19	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage	30	38	volts
Zero-Signal Plate Current	70	70	ma
Max.-Signal Plate Current	79	92	ma
Zero-Signal Grid-No.2 Current (Approx.)	5	4	ma
Max.-Signal Grid-No.2 Current (Approx.)	13	13.5	ma
Plate Resistance (Approx.)	60000	70000	ohms
Transconductance	3750	3600	μmhos
Effective Load Resistance	10000	8000	ohms
Total Harmonic Distortion	5	3.5	per cent
Max.-Signal Power Output	10	14	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

▲ The type of input coupling used should not introduce too much resistance in the grid-No.1 circuit. Transformer- or impedance-coupling devices are recommended.

OPERATING CONSIDERATIONS

The *maximum ratings* in the tabulated data for the 12V6-GT are working design-center maximums established according to the standard design-center system of rating electron tubes. Tubes so rated will give satisfactory performance in storage-battery-operated equipment provided the following stipulations are observed:

When storage-battery equipment is operated without a charger, it should be designed so that the published maximum values of plate voltages, grid-No.2 supply voltages, dissipations, and rectified output currents are never exceeded for a terminal potential at the battery source of 2.0 volts per cell. When storage-battery equipment is operated with a charger, it should be designed so that 90 per cent of the same maximum values is never exceeded for a terminal potential at the battery source of 2.2 volts.

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

12V6-GT-10-52
Photolithographed
in U.S.A.

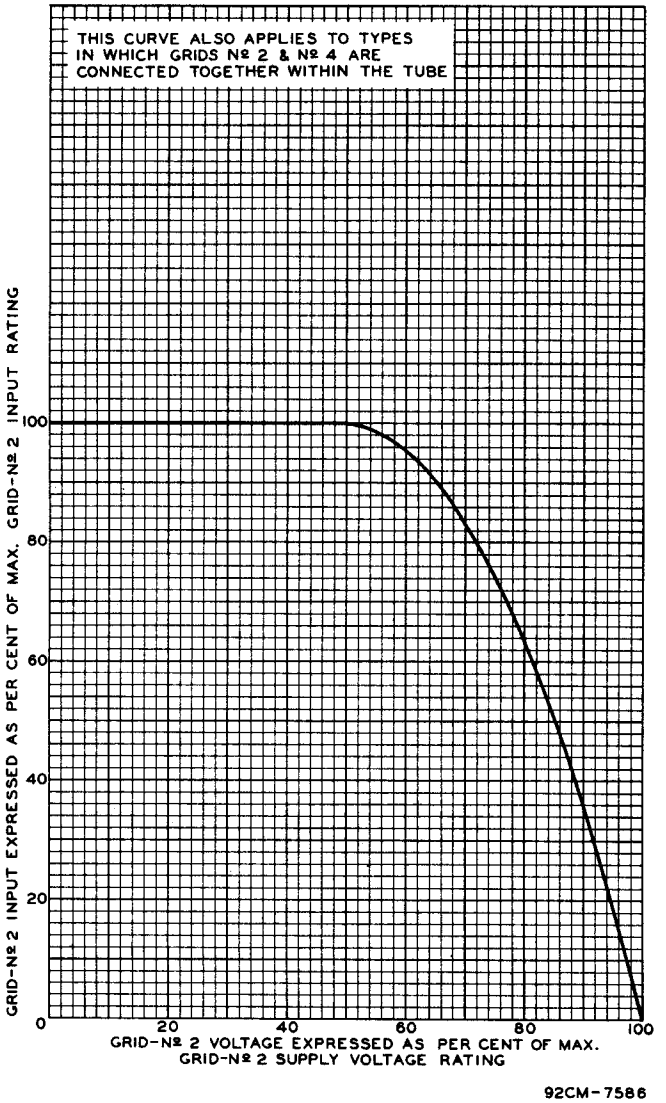


Fig. 1 - Grid-No. 2 Input Rating Curve

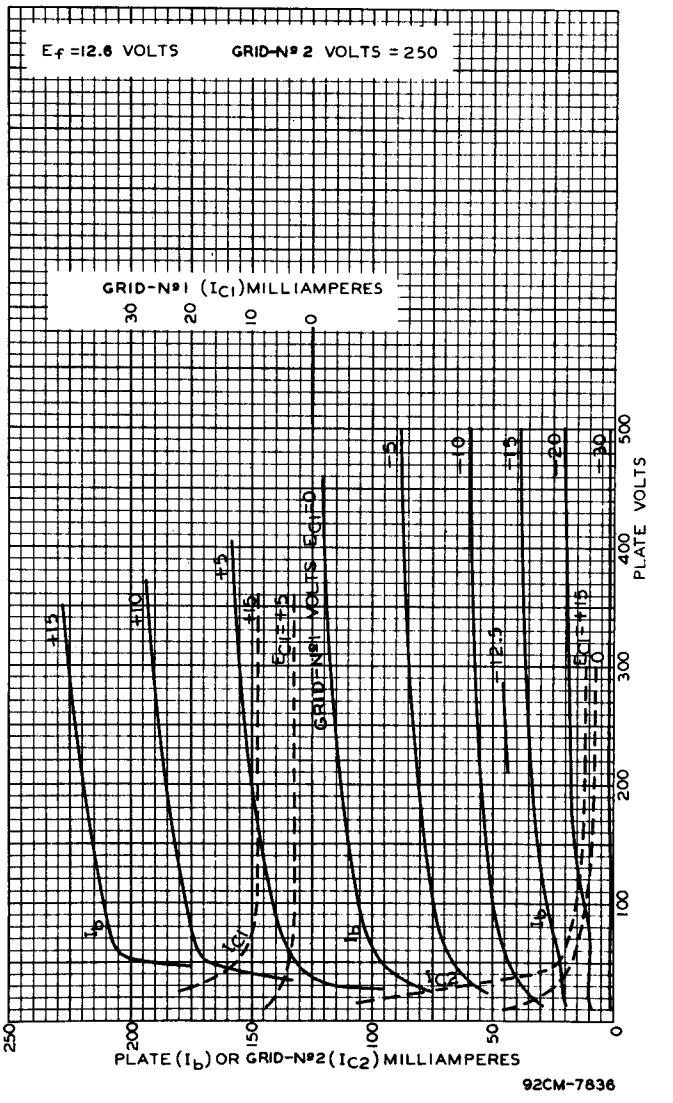


Fig. 2 - Average Plate Characteristics of Type 12V6-GT

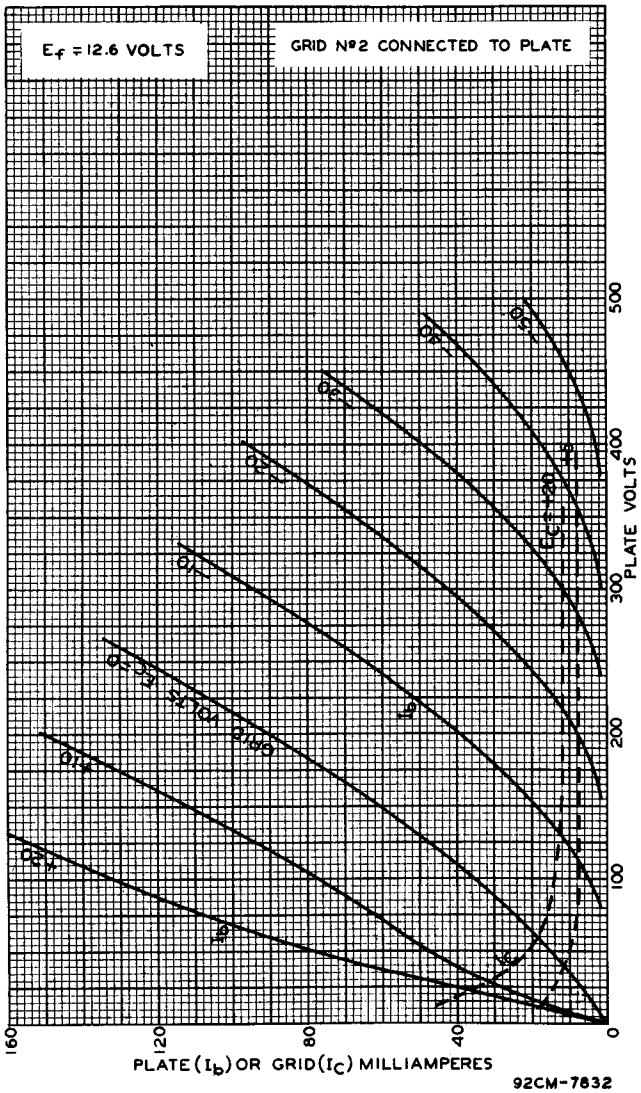


Fig. 3 - Average Plate Characteristics of Type 12V6-GT connected as Triode

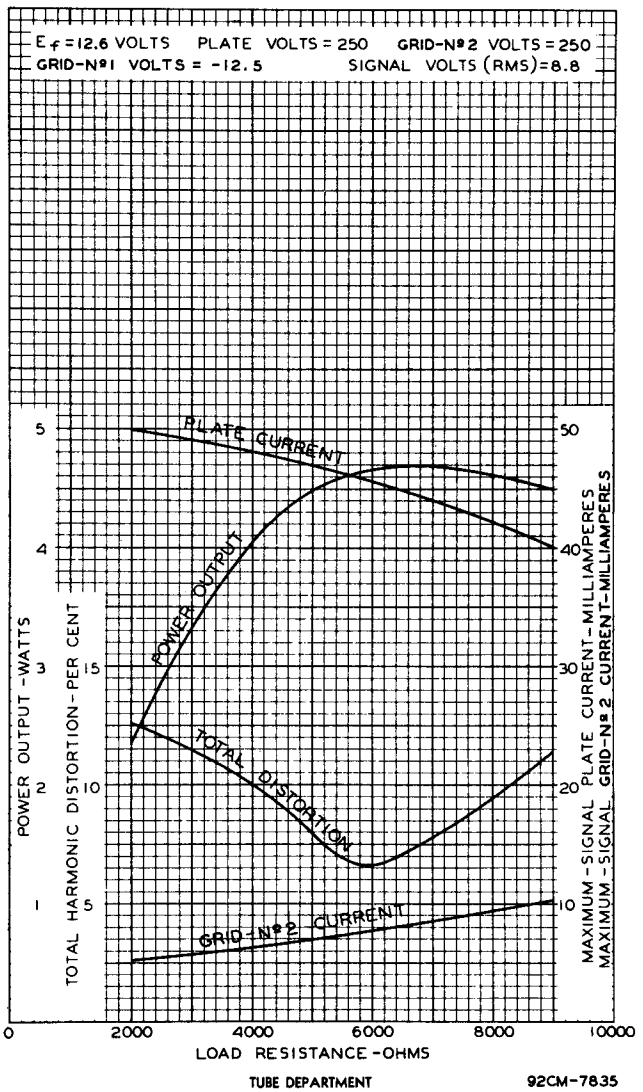
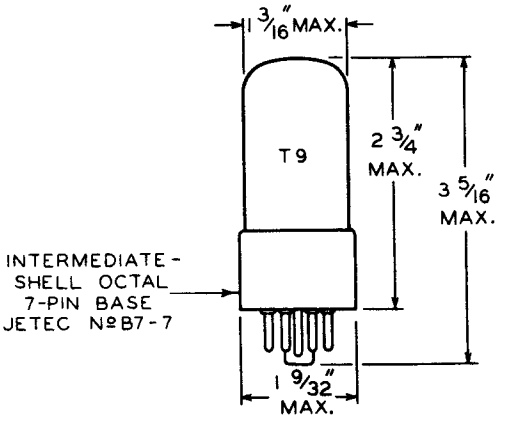
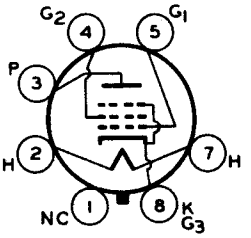


Fig. 4 - Operation Characteristics of Type 12V6-GT

DIMENSIONAL OUTLINE



SOCKET CONNECTIONS
Bottom View



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PIN 1: NO CONNECTION
PIN 2: HEATER
PIN 3: PLATE
PIN 4: GRID No.2
PIN 5: GRID No.1
PIN 7: HEATER
PIN 8: CATHODE, GRID No.3