



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	μmF	
Input	9.0	μmF	
Output	7.5	μmF	

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 A₁ 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 AB₁ 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.

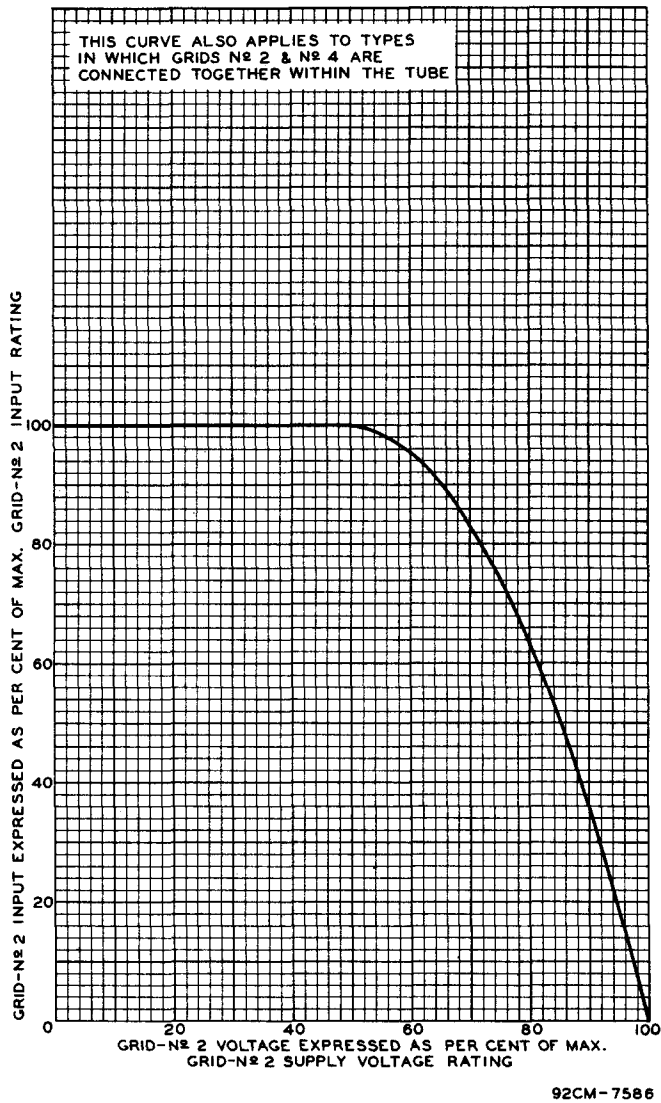


Fig. 1 - Grid-No. 2 Input Rating Curve

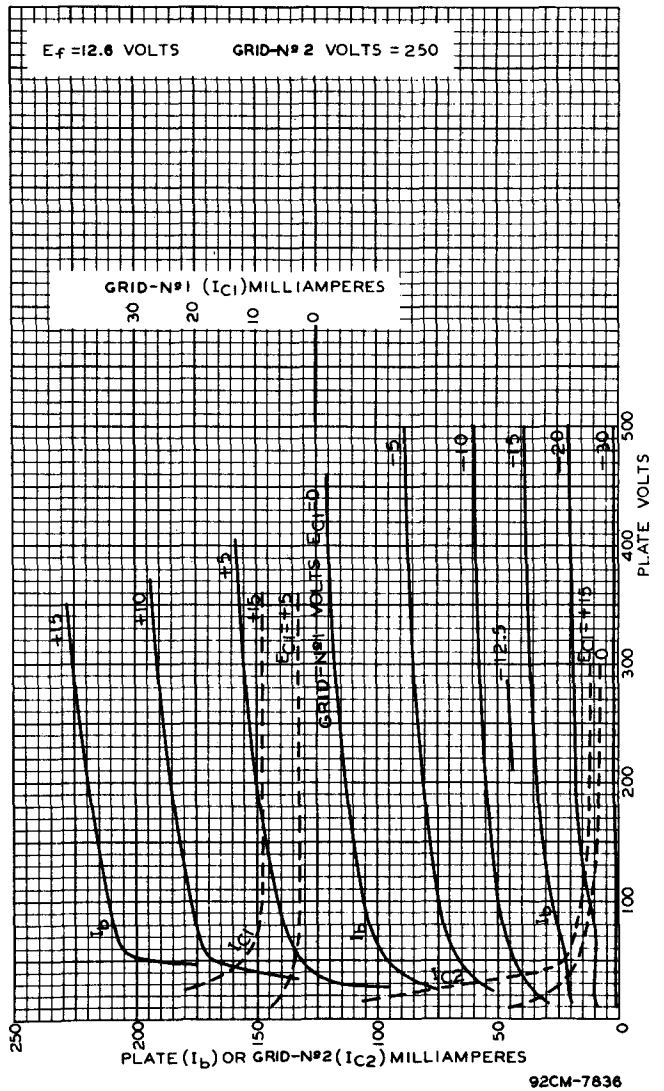


Fig. 2 - Average Plate Characteristics of
Type 12V6-GT

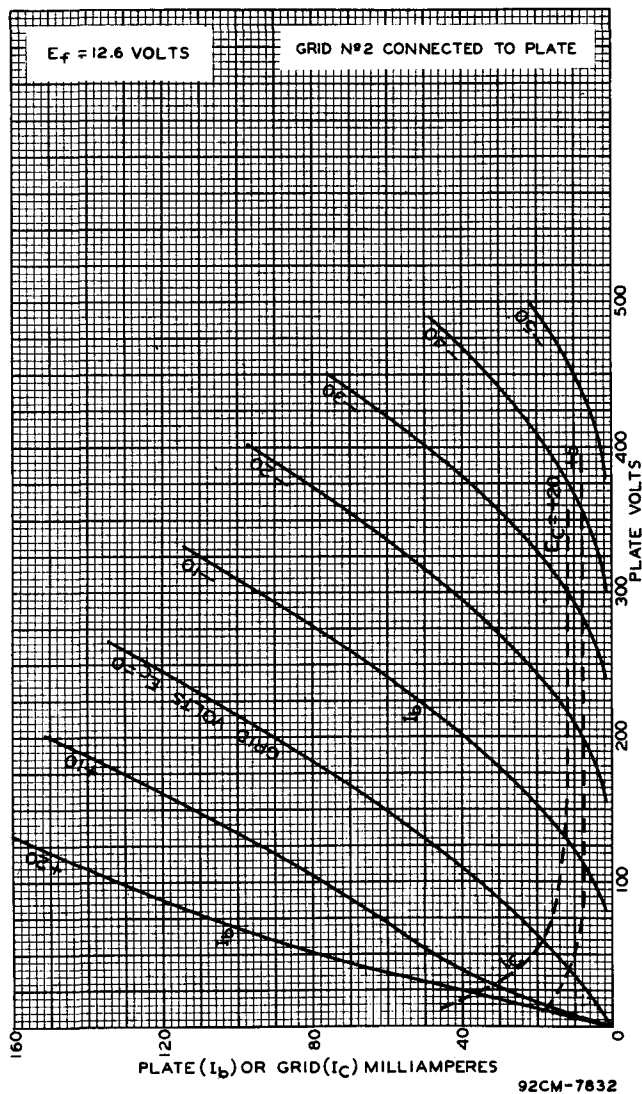


Fig. 3 - Average Plate Characteristics of Type 12V6-GT connected as Triode

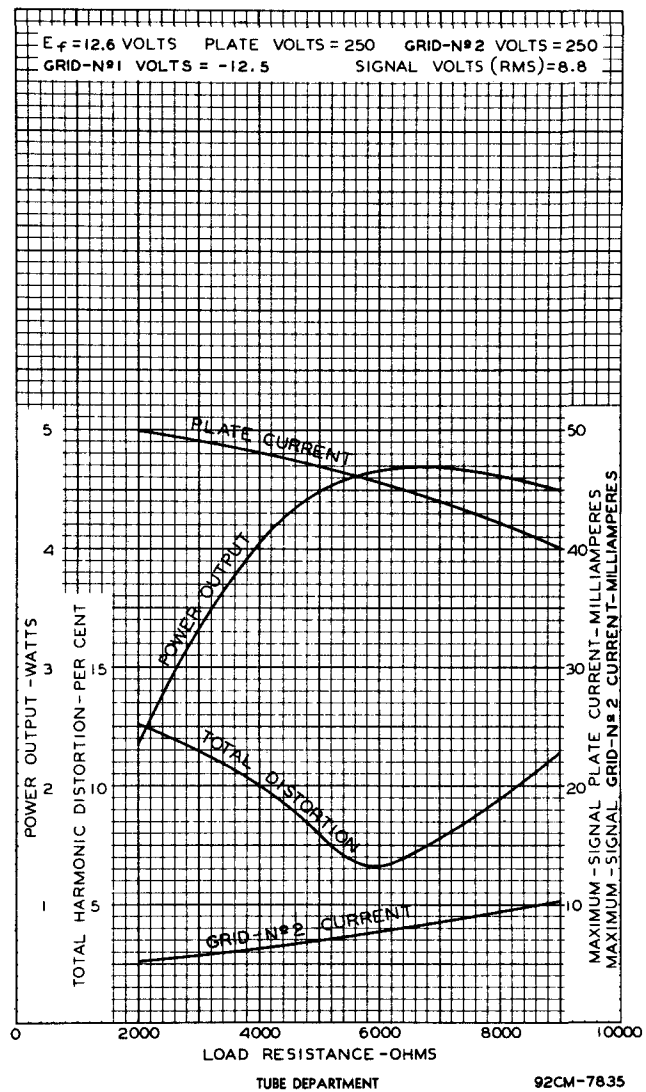
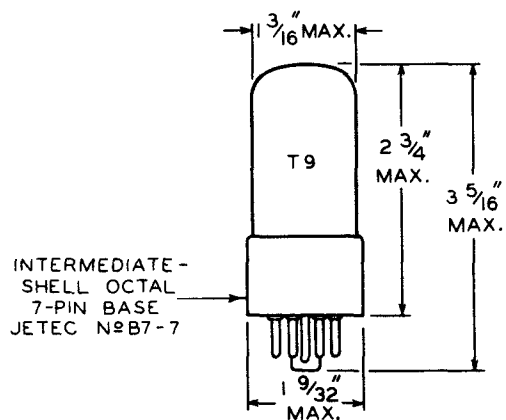


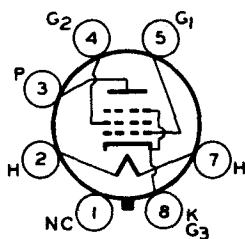
Fig. 4 - Operation Characteristics of Type 12V6-GT



DIMENSIONAL OUTLINE



SOCKET CONNECTIONS Bottom View



7AC

- 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