12EG6

PENTAGRID AMPLIFIER

7-Pin Miniature Type With Two Independent Control Grids

For Use in "Hybrid" Automobile Receivers Operating Directly From 12-Volt Storage Batteries

TENTATIVE DATA

RCA-12EG6 is a pentagrid amplifier of the 7-pin miniature type intended for use as a radio-frequency amplifier tube in "hybrid" automobile receivers in which the tube and transistor electrode voltages are obtained directly from a 12-volt storage battery.

The design of this tube permits use of both grid No.1 and grid No.3 as independent control electrodes. This feature provides for improved automatic volume control under large-signal conditions when both grids are biased by the avc voltage.

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:		
Voltage range (AC or DC)	10.0 to 15.9	volts
This voltage range is on an absolute basis. For longest life, it is recommended that the heater be operated within the voltage range of 11 to 14 volts.		
Current (Approx.) at 12.6 volts	0.15	amp
Direct Interelectrode Capacitances:•		
Grid No.3 to plate	0.25 max.	μμf
Grid No.3 to grid No.1	0.15 max.	μμf
Grid No.3 to heater, cathode, grid No.1, grids No.2 & 4, grid No.3, and grid No.5	6.5	μμf
Grid No.1 to heater, cathode, grids No.2 & 4, grid No.3, and grid No.5	5.7	μμf
Plate to heater, cathode, grid No.1, grids No.2 & 4, grid No.3, and grid No.5	12	μμf
Grid No.1 to cathode and grid No.5	3.2	μμf
Cathode to heater, grids No.2 & 4, grid No.3, and plate	23	μμf
Grid No.1 to plate	0.04 max.	μμf

Characteristics, Class A_1 Amplifier:

With 12.6 volts on heater and grid No.3 connected to grid No.1 through 100000-ohm resistor

Plate Voltage	12.6	volts
Grids No.2 & 4 (Screen-Grid) Voltage	12.6	volts
Grid-No.1 (Control-Grid) Voltage:		
Developed across 2.2-megohm resistor	-0.6	volt
Plate Current	0.55	ma
Grids-No.2 & 4 Current	2.8	ma
Transconductance, Grid No.3 to Plate	800	μmhos
Plate Resistance (Approx.)	0.15	megohm
Grid-No.1 Voltage (Approx.) for grid-No.3-to-plate transconductance of 20 μmhos	-3	volts

Mechanical:

Operating Position	Any
Maximum Overall Length	2-1/8"
Maximum Seated Length	1-7/8"
Length from Base Seat to Bulb Top (Excluding tip)	1-1/2" ± 3/32"
Diameter:	
Minimum	0.650"
Maximum	0.750"
Bulb	T-5-1/2
Base	Small-Button Miniature 7-Pin (JETEC No.E7-1)

AMPLIFIER — Class A_1

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	16 max.	volts
GRID-No.3 VOLTAGE:		
Positive value	0 max.	volts
Negative value	-16 max.	volts
GRIDS-No.2 & 4 VOLTAGE	16 max.	volts
GRIDS-No.2 & 4 SUPPLY VOLTAGE	16 max.	volts
CATHODE CURRENT	20 max.	ma
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	16 max.	volts
Heater positive with respect to cathode	16 max.	volts

Maximum Circuit Values:

Grid-No.3-Circuit Resistance	10 max.	megohms

• With external shield, JETEC No.316, connected to pin No.2.

OPERATING CONSIDERATIONS

The *maximum ratings* in the tabulated data are estimated in accordance with the following definition of the *Design-Center Rating System* for rating electron devices:

Design-Center ratings are limiting values of operating and environmental conditions applicable to a bogey electron device of a specified type as defined by its published data, and should not be exceeded under normal conditions.

The device manufacturer chooses these values to provide acceptable serviceability of the device in average applications, taking responsibility for normal changes in operating conditions due to rated supply voltage variation*, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in device characteristics.

The equipment manufacturer should design so that initially no design-center value for the intended service is exceeded with a bogey device in equipment operating at the stated normal supply voltage.*

* For automotive equipment utilizing a 12-volt system, battery-voltage range of 10.0 volts to 15.9 volts is accepted U.S.A. practice.

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

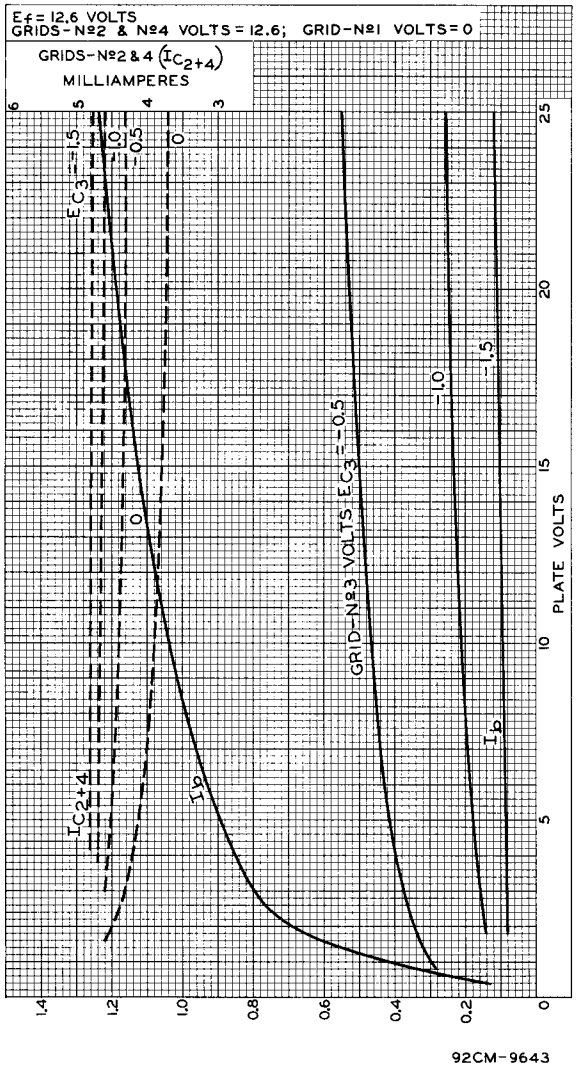


Fig. 1 - Average Characteristics of Type 12EG6.

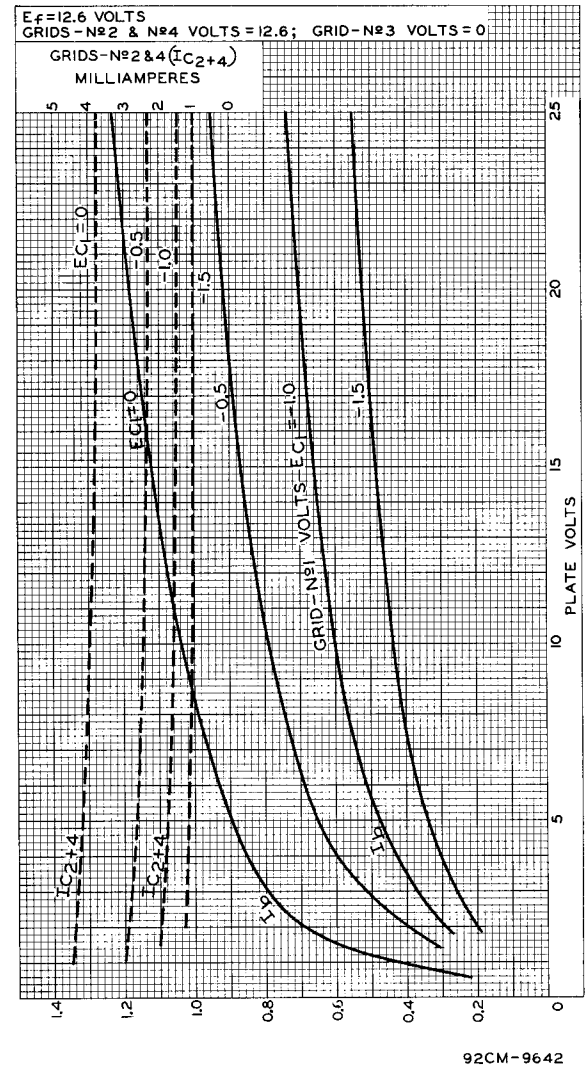


Fig. 2 - Average Characteristics of Type 12EG6.

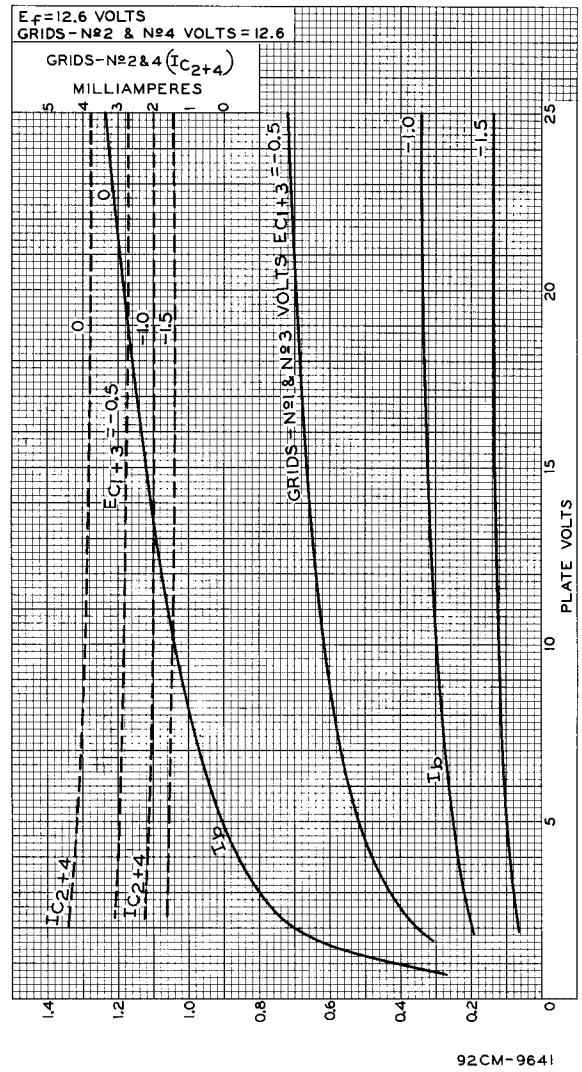
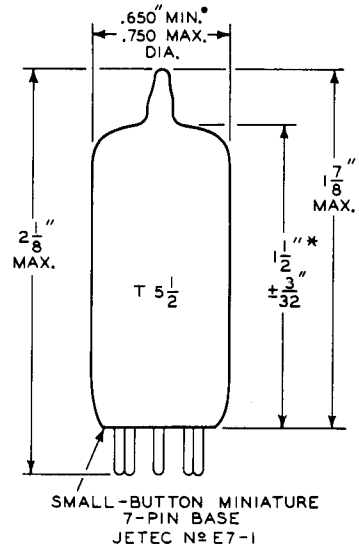


Fig. 3 - Average Characteristics of Type 12EG6.

DIMENSIONAL OUTLINE

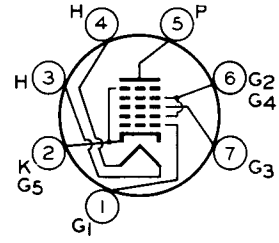


● APPLIES IN ZONE STARTING 0.375" FROM BASE SEAT.

* MEASURED FROM BASE SEAT TO BULB-TOP LINE AS DETERMINED BY RING GAUGE OF 7/16" I.D.

SOCKET CONNECTIONS

Bottom View



7CH

PIN 1 - GRID No.1
PIN 2 - CATHODE, GRID No.5
PIN 3 - HEATER
PIN 4 - HEATER
PIN 5 - PLATE
PIN 6 - GRIDS No.2 & 4
PIN 7 - GRID No.3