Electronic TUBES

12EA6

PENTODE

FOR IF AMPLIFIER APPLICATIONS IN AUTOMOBILE RECEIVERS

DESCRIPTION AND RATING

The 12EA6 is a miniature pentode intended for use as an intermediate-frequency amplifier in automobile radio receivers. The tube is specially designed to operate with its plate and screen voltages supplied directly from a 12-volt storage battery.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential
Heater Voltage, AC or DC . . . . . 12.6* Volts
Heater Current . . . . . 0.175 Amperes
Direct Interelectrode Capacitances†
  Grid-Number 1 to Plate, maximum . . . . . 0.04 μμf
  Input . . . . . 11 μμf
  Output . . . . . 4.0 μμf

MECHANICAL

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

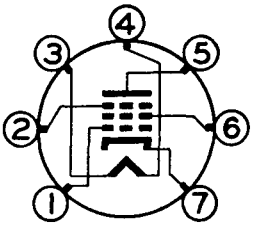
MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Plate Voltage . . . . . 16 Volts
Screen Voltage . . . . . 16 Volts
Positive DC Grid-Number 1 Voltage . . . . . 0 Volts
Heater-Cathode Voltage
  Heater Positive with Respect to Cathode . . . . . 16 Volts
  Heater Negative with Respect to Cathode . . . . . 16 Volts
Grid-Number 1 Circuit Resistance . . . . . 12 Megohms

Design-Maximum Ratings are the limiting values expressed with respect to bogie tubes at which satisfactory tube life can be expected to occur for the types of service for which the tube is rated. Therefore, the equipment designer must establish the circuit design so that initially and throughout equipment life no design-maximum value is exceeded with a bogie tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.

BASING DIAGRAM



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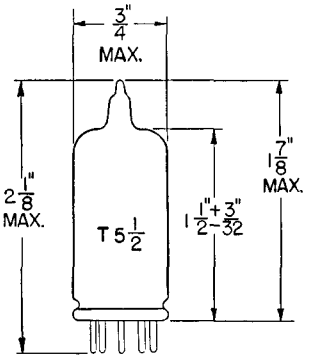
TERMINAL CONNECTIONS

Pin 1—Grid Number 1
Pin 2—Internal Shield and Grid Number 3 (Suppressor)
Pin 3—Heater
Pin 4—Heater
Pin 5—Plate
Pin 6—Grid Number 2 (Screen)
Pin 7—Cathode

PHYSICAL DIMENSIONS



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CHARACTERISTICS AND TYPICAL OPERATION

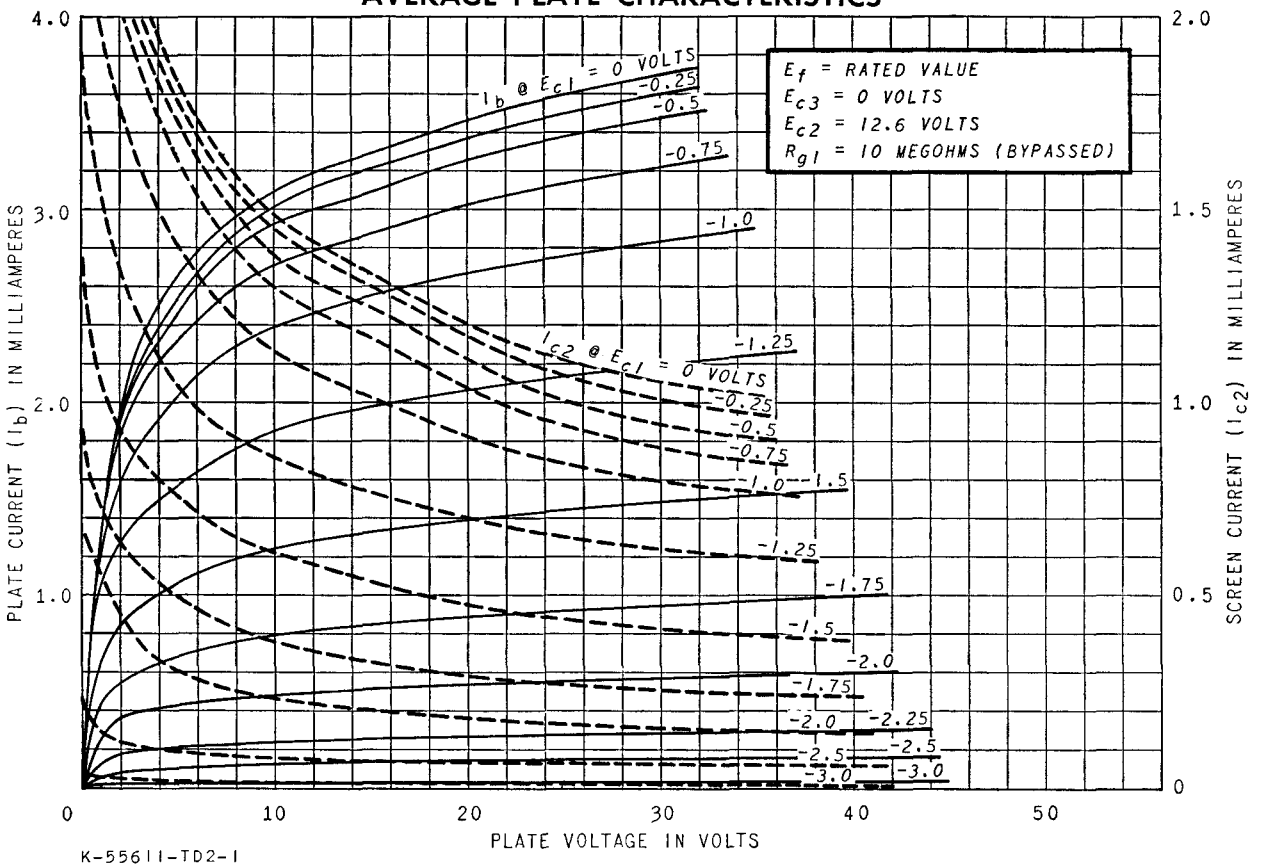
CLASS A_1 AMPLIFIER

Plate Voltage	12.6	Volts
Suppressor Voltage	0	Volts
Screen Voltage	12.6	Volts
Grid-Number 1 Resistor (bypassed)	10	Megohms
Plate Resistance, approximate	32,000	Ohms
Transconductance	3800	Micromhos
Plate Current	3.2	Milliamperes
Screen Current	1.4	Milliamperes
Grid-Number 1 Voltage, approximate Ib = 10 Microamperes	−3.4	Volts

* When used in automotive service from a 12-volt source, under no circumstances should the heater voltage be less than 10.0 volts or more than 15.9 volts. These extreme variations in heater voltage may be tolerated for short periods; however, operation at or near these absolute limits in heater voltage necessarily involves sacrifice in performance at low heater voltage and in life expectancy at high heater voltage. Equipment reliability can be significantly increased with improved supply-voltage regulation.

† Without external shield.

AVERAGE PLATE CHARACTERISTICS



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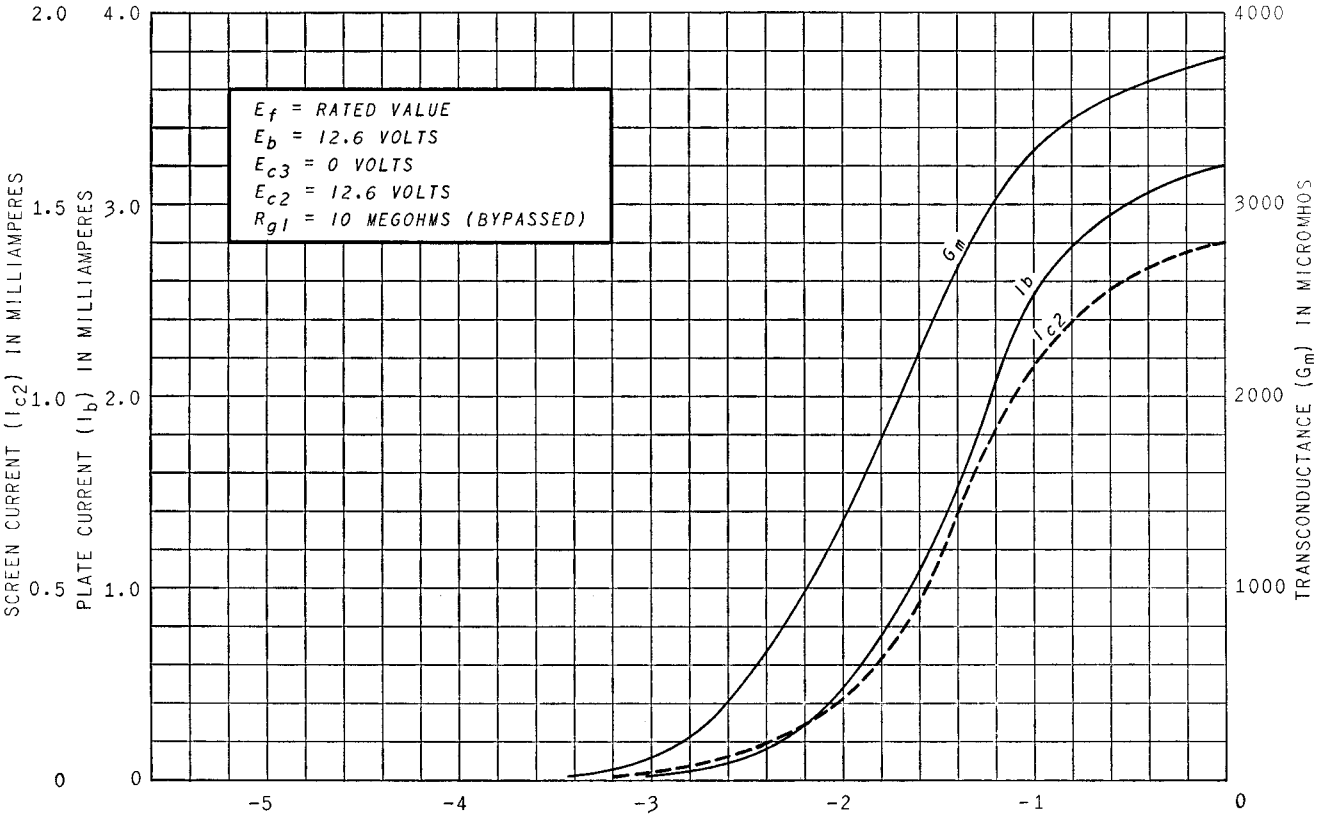
AVERAGE TRANSFER CHARACTERISTICS



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