



BEAM PENTODE

FOR AF POWER AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6CA5 is a miniature beam pentode designed primarily for use in the audio-frequency power output stage of radio and television receivers. The tube features high power sensitivity at relatively low plate and screen voltages.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential
Heater Characteristics and Ratings

Heater Voltage, AC or DC	6.3	Volts
Heater Current	1.2	Amperes

Direct Interelectrode Capacitances, approximate*

Grid-Number 1 to Plate: (g1 to p)	0.5	pf
Input: g1 to (h+k+g2+b.p.)	15	pf
Output: p to (h+k+g2+b.p.)	9	pf

MECHANICAL

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

MAXIMUM RATINGS

DESIGN-CENTER VALUES

Plate Voltage	130	Volts
Screen Voltage	130	Volts
Positive DC Grid-Number 1 Voltage	0	Volts
Plate Dissipation	5.0	Watts
Screen Dissipation	1.4	Watts

Heater-Cathode Voltage

Heater Positive with Respect to Cathode		
DC Component	100	Volts

Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
DC Component		Volts
Total DC and Peak	200	Volts

Grid-Number 1 Circuit Resistance

With Fixed Bias	0.5	Megohms
With Cathode Bias	0.5	Megohms
Bulb Temperature at Hottest Point	180	C

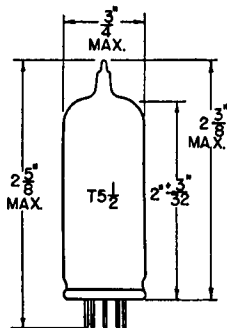
Design-Center ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under normal conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube in average applications, making allowance 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 the characteristics of the tube under consideration and of all other electron devices in the equipment.

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

PHYSICAL DIMENSIONS

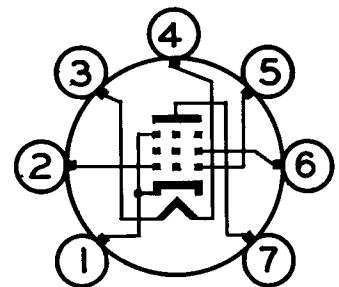


EIA 5-3

TERMINAL CONNECTIONS

- Pin 1—Cathode and Beam Plates
- Pin 2—Grid Number 1
- Pin 3—Heater
- Pin 4—Heater
- Pin 5—Grid Number 1
- Pin 6—Grid Number 2 (Screen)
- Pin 7—Plate

BASING DIAGRAM



EIA 7CV

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A₁ AMPLIFIER

Plate Voltage.....	110	125 Volts
Screen Voltage.....	110	125 Volts
Grid-Number 1 Voltage.....	-4.0	-4.5 Volts
Peak AF Grid-Number 1 Voltage.....	4.0	4.5 Volts
Plate Resistance, approximate.....	16000	15000 Ohms
Transconductance.....	8100	9200 Micromhos
Zero-Signal Plate Current.....	32	37 Milliamperes
Maximum-Signal Plate Current, approximate.....	31	36 Milliamperes
Zero-Signal Screen Current.....	3.5	4.0 Milliamperes
Maximum-Signal Screen Current, approximate.....	7.5	11 Milliamperes
Load Resistance.....	3500	4500 Ohms
Total Harmonic Distortion, approximate.....	5	6 Percent
Maximum-Signal Power Output.....	1.1	1.5 Watts

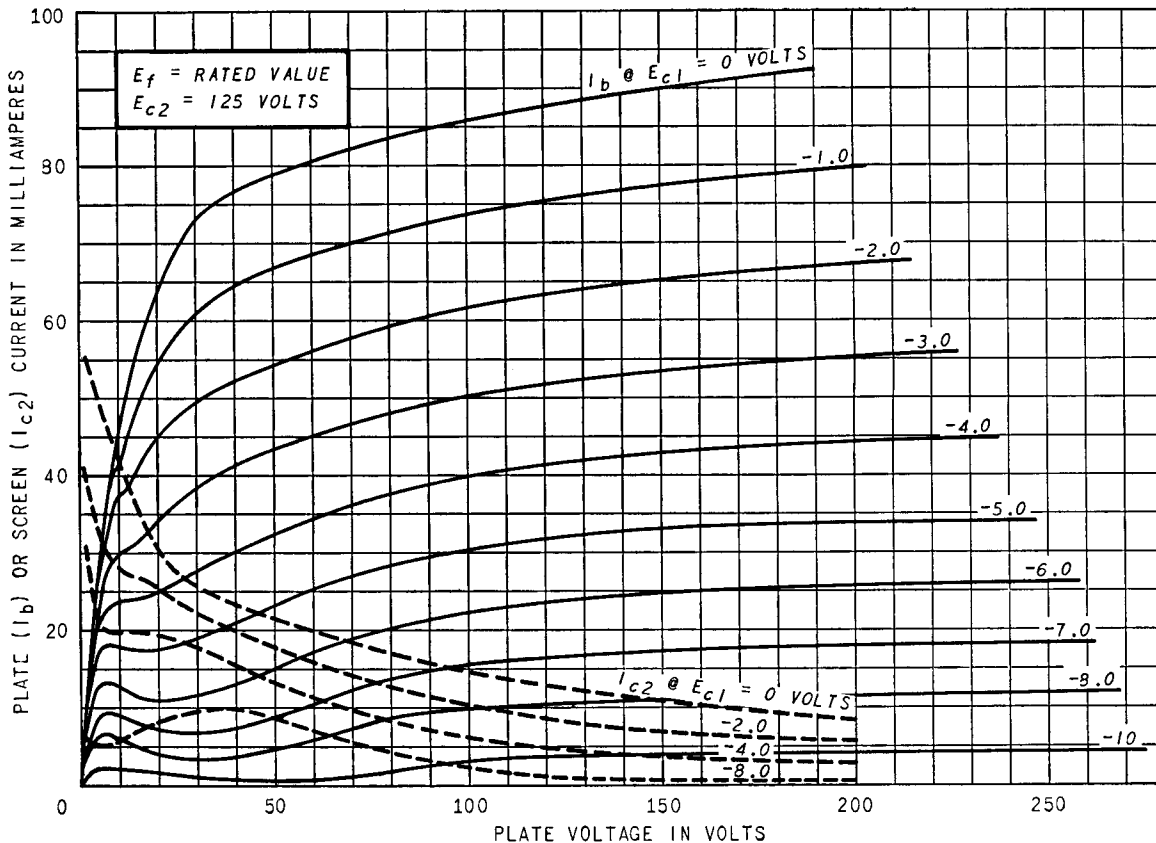
NOTES

* Without external shield.

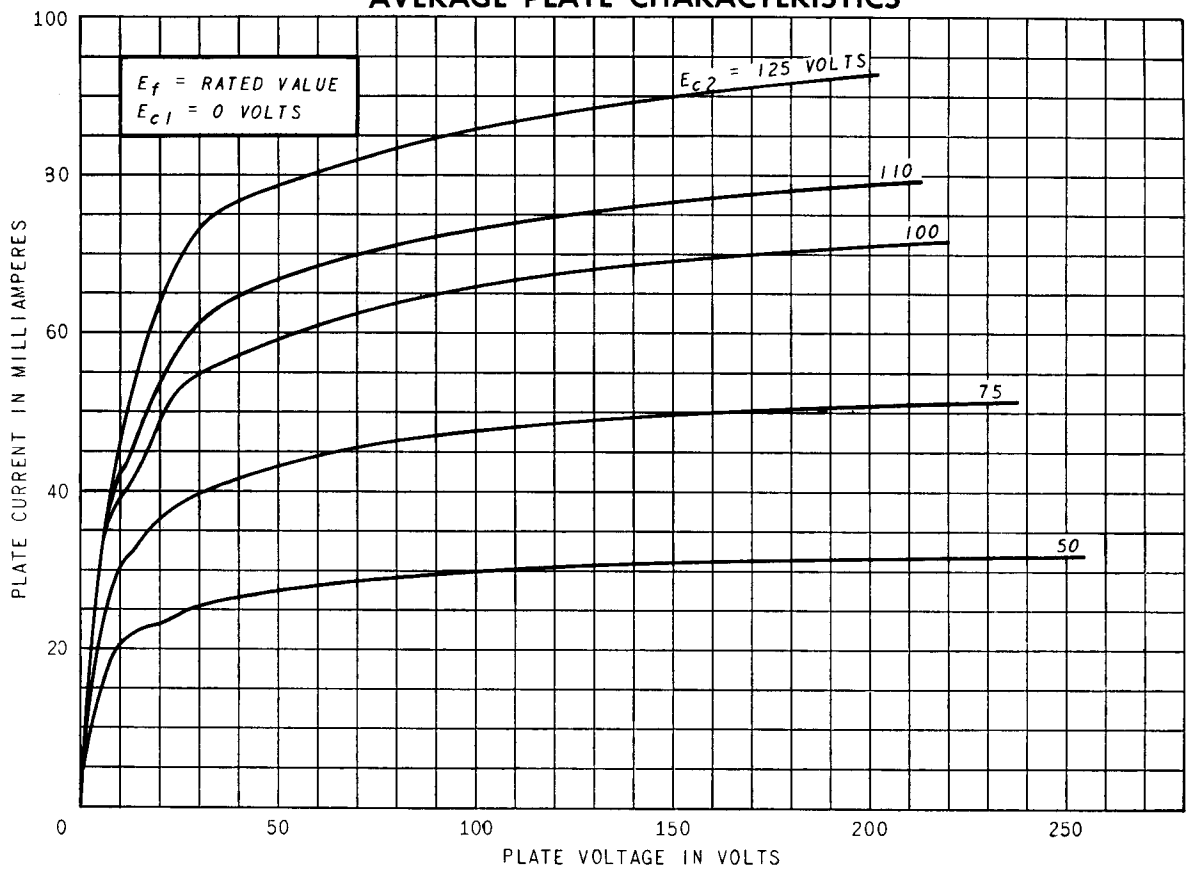
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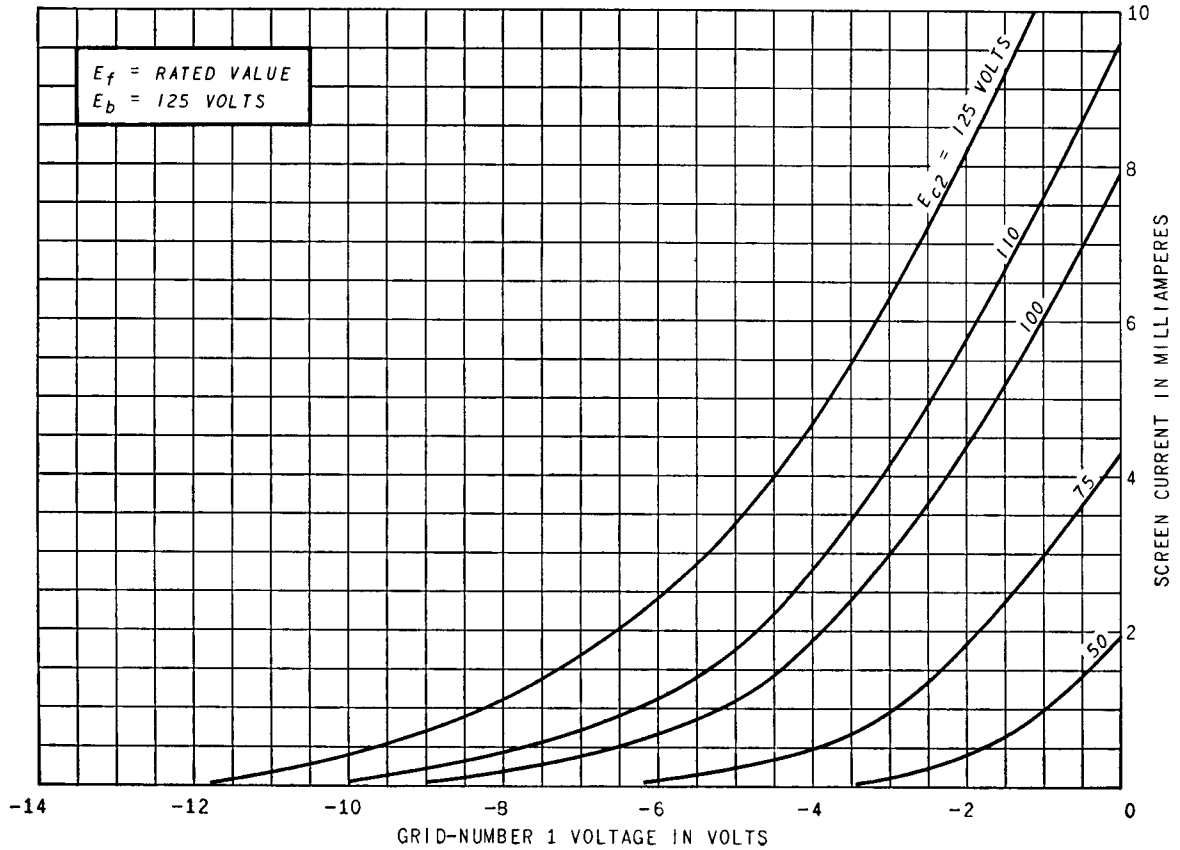
AVERAGE PLATE CHARACTERISTICS



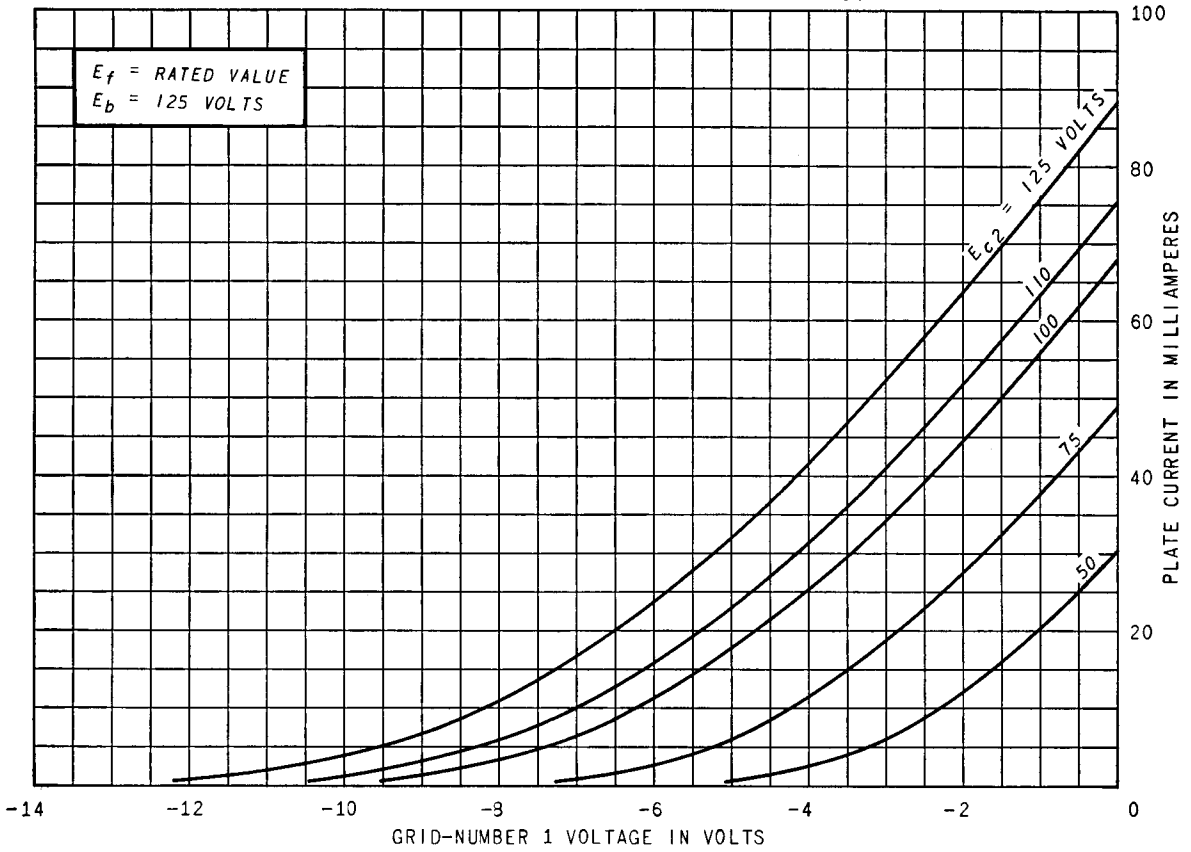
AVERAGE PLATE CHARACTERISTICS



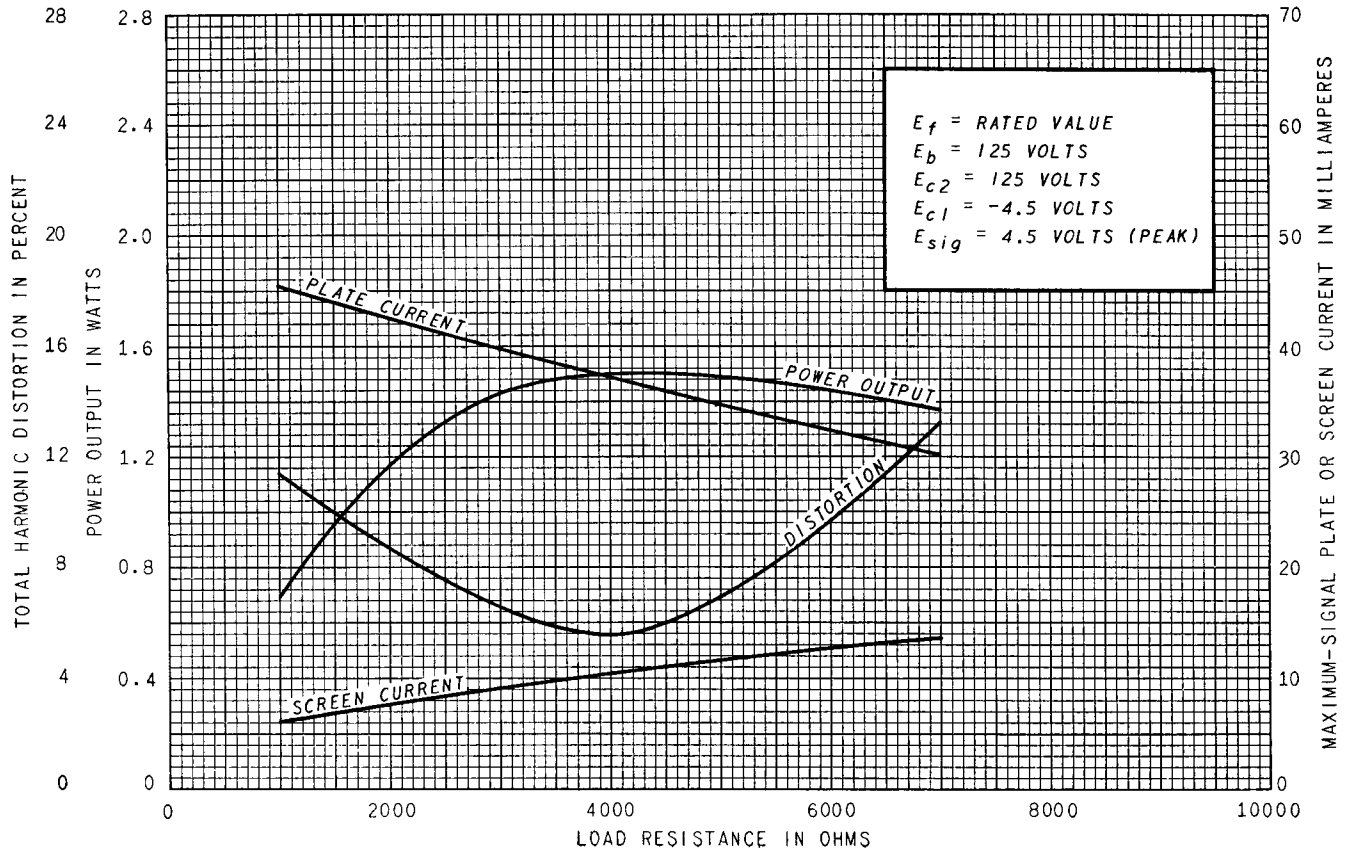
AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



OPERATION CHARACTERISTICS



OPERATION CHARACTERISTICS

