



### DESCRIPTION AND RATING

The 6CB6-A is a miniature pentode designed for use as a radio-frequency or intermediate-frequency amplifier in television receivers. Features of the tube include high transconductance and low interelectrode capacitances. The suppressor and cathode terminals are brought out to separate base pins to permit the use of an unbypassed cathode-bias resistor to minimize the effects of regeneration.

### GENERAL

#### ELECTRICAL

Cathode—Coated Unipotential

Heater Characteristics and Ratings

	Series Heater Operation*	Parallel Heater Operation*
Heater Voltage, AC or DC . . . . .	6.3	6.3 ± 0.6 Volts
Heater Current . . . . .	0.3 ± 0.02	0.3† Amperes
Heater Warm-up Time‡ . . . . .	11	Seconds

Direct Interelectrode Capacitances

	With§ Shield	Without Shield
Grid-Number 1 to Plate: (g1 to p), max. . . . .	0.015	0.025 pf
Input: g1 to (h+k+g2+g3+i.s.) . . . . .	6.5	6.5 pf
Output: p to (h+k+g2+g3+i.s.) . . . . .	3.0	2.0 pf

#### MECHANICAL

Mounting Position—Any

Envelope—T-5½, Glass

Base—E7-1, Miniature Button 7-Pin

Outline Drawing—EIA 5-2

Maximum Diameter . . . . .	¾	Inches
Maximum Over-all Length . . . . .	2 1/8	Inches
Maximum Seated Height . . . . .	1 7/8	Inches

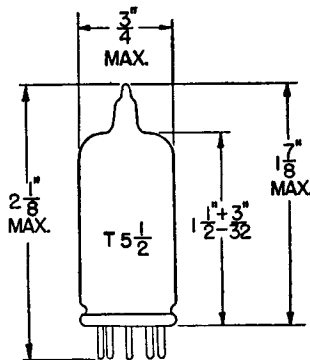
### MAXIMUM RATINGS

Design-Maximum 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 the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

#### PHYSICAL DIMENSIONS

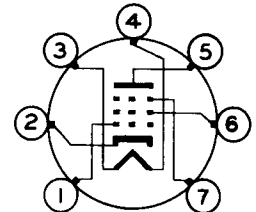


EIA 5-2

#### TERMINAL CONNECTIONS

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

#### BASING DIAGRAM



EIA 7CM

## MAXIMUM RATINGS

## DESIGN-MAXIMUM VALUES

Plate Voltage.....	330	Volts
Screen-Supply Voltage.....	330	Volts
Screen Voltage—See Screen Rating Chart		
Positive DC Grid-Number 1 Voltage.....	0	Volts
Plate Dissipation.....	2.3	Watts
Screen Dissipation.....	0.55	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		
Total DC and Peak.....	200	Volts

## CHARACTERISTICS AND TYPICAL OPERATION

CLASS A<sub>1</sub> AMPLIFIER

Plate Voltage.....	125	125	Volts
Suppressor, Connected to Cathode at Socket			
Screen Voltage.....	125	125	Volts
Grid-Number 1 Voltage.....	-3.0		Volts
Cathode-Bias Resistor.....		56	Ohms
Plate Resistance, approximate.....		0.28	Megohms
Transconductance.....		8000	Micromhos
Plate Current.....	2.8	13	Milliamperes
Screen Current.....		3.7	Milliamperes
Grid-Number 1 Voltage, approximate			
I <sub>b</sub> = 20 Microamperes.....		-6.5	Volts

\* For parallel heater operation, the equipment designer should design the equipment so that heater voltage is centered at the specified rated value, with heater supply variations restricted to maintain heater voltage within the specified tolerance. For series heater operation, the equipment designer should design the equipment so that heater current is centered at the specified rated value, with heater supply variations restricted to maintain heater current within the specified tolerance.

† Heater current of a bogey tube at E<sub>f</sub> = 6.3 volts.

‡ The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

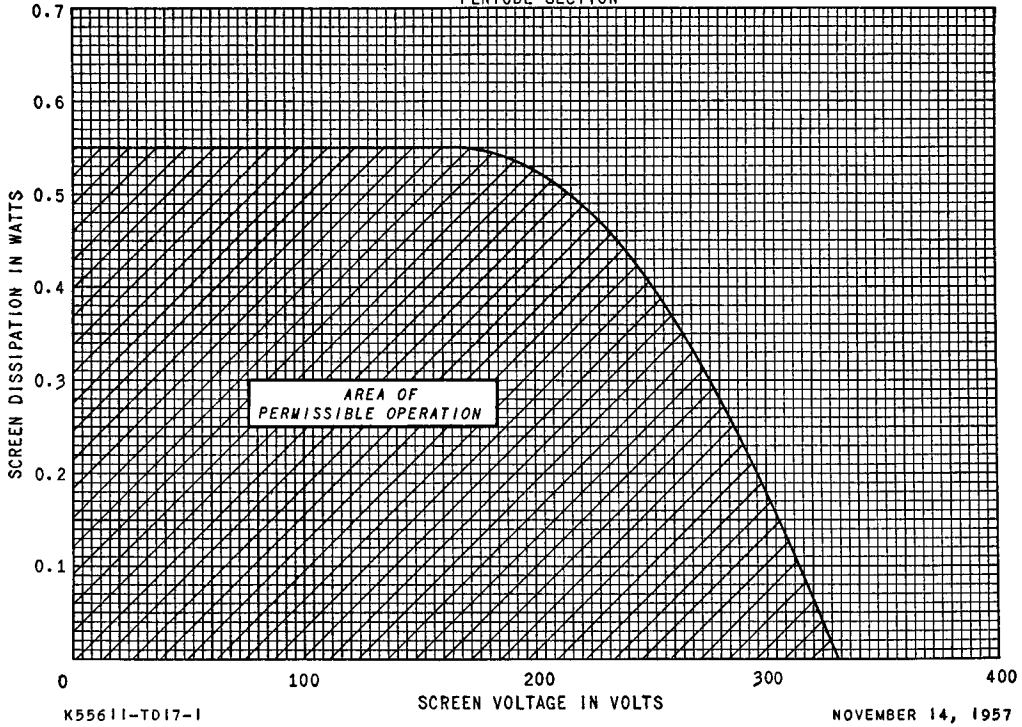
§ With external shield (EIA 316) connected to pin 2.

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or

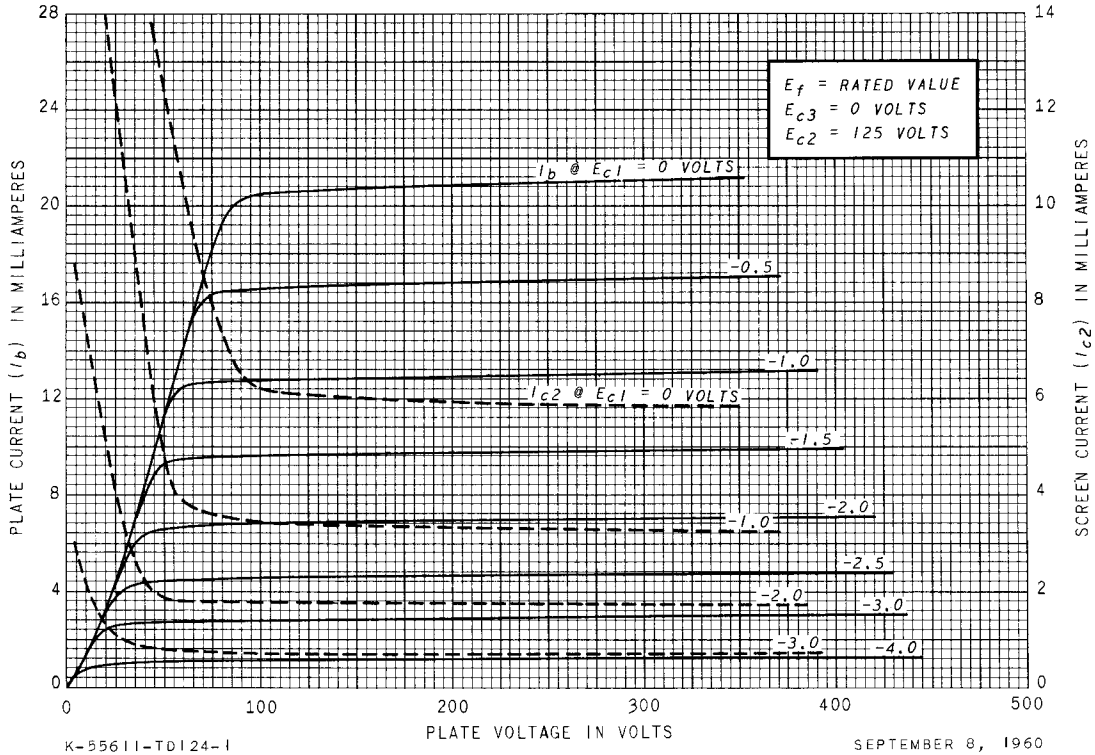
elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

**SCREEN RATING CHART**

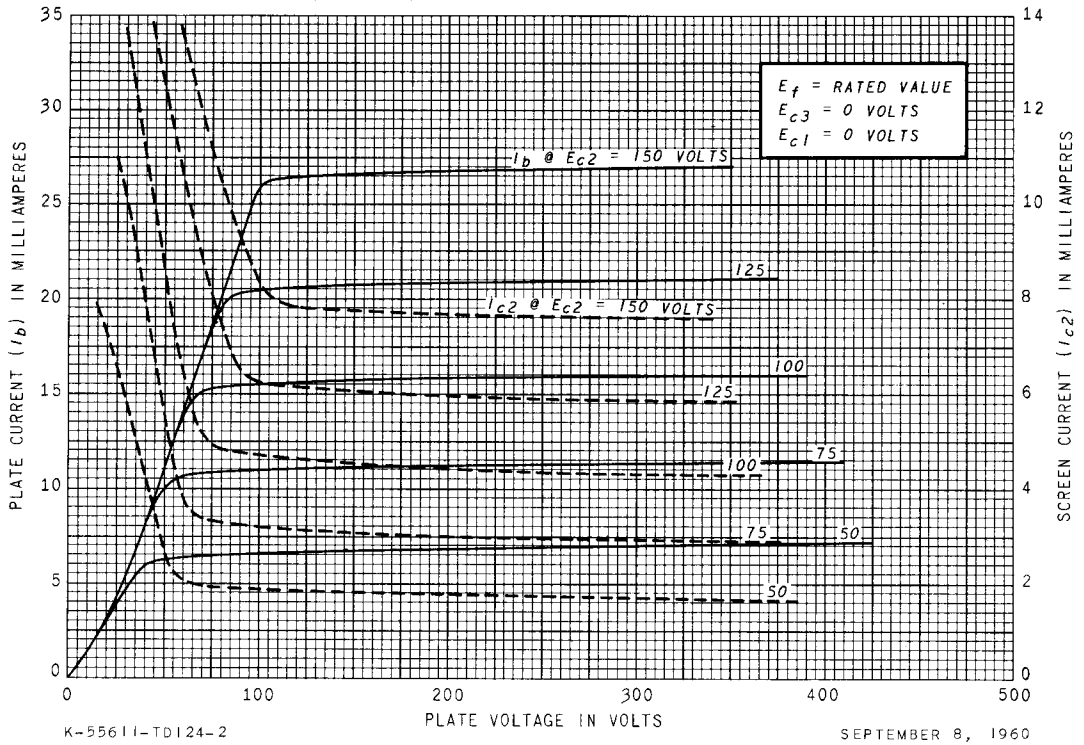
PENTODE SECTION



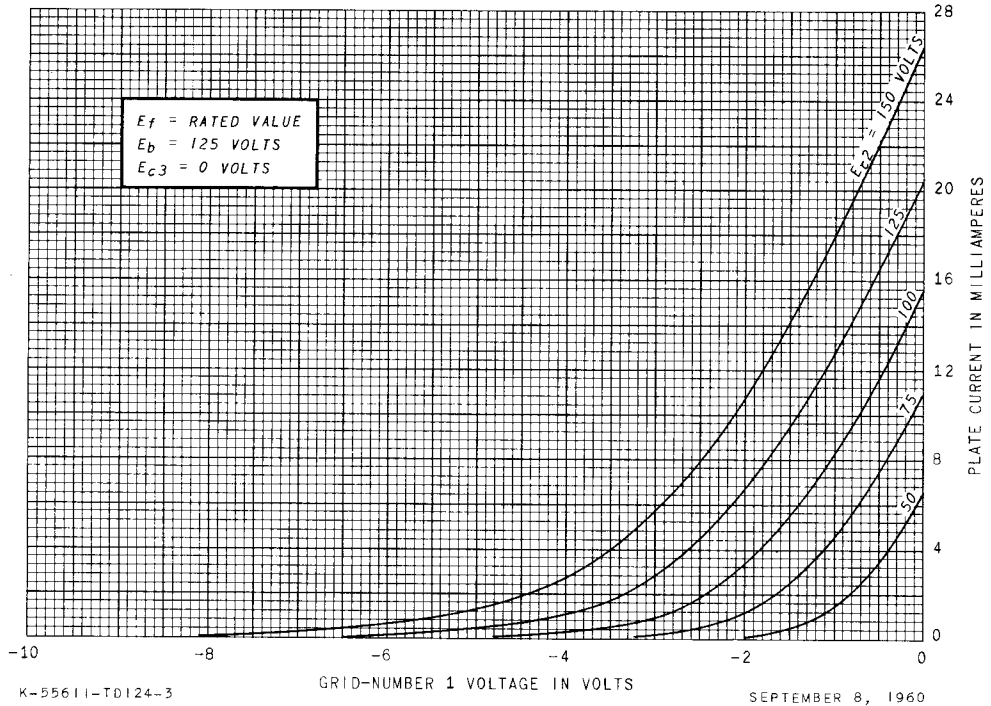
**AVERAGE PLATE CHARACTERISTICS**



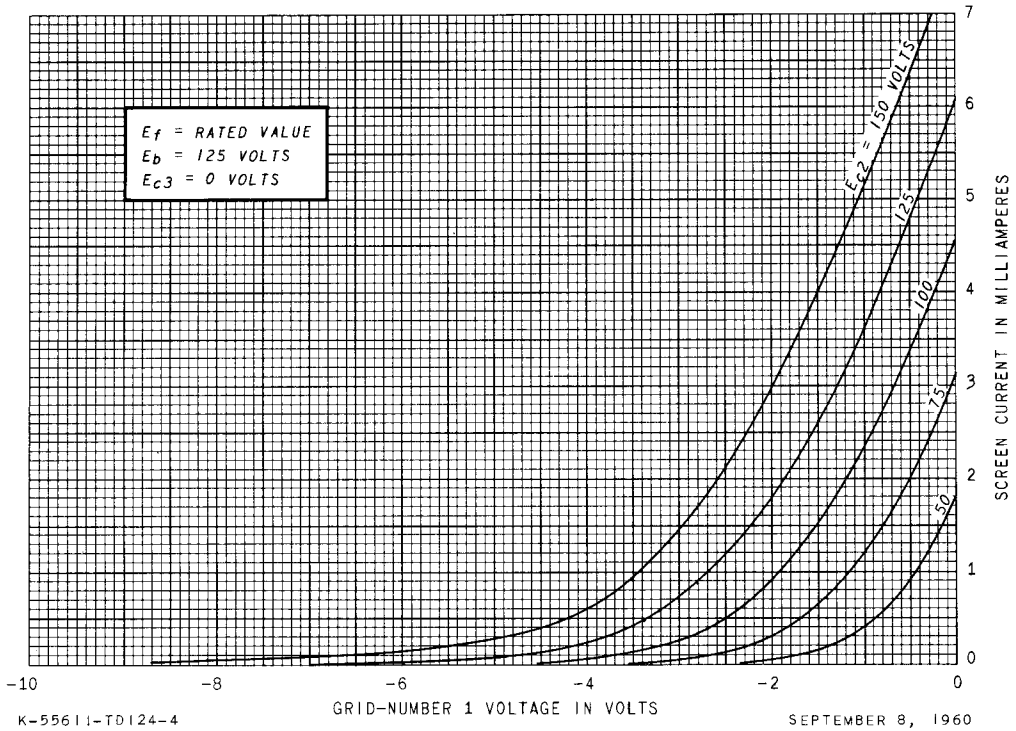
**AVERAGE PLATE CHARACTERISTICS**



**AVERAGE TRANSFER CHARACTERISTICS**



### AVERAGE TRANSFER CHARACTERISTICS



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