



# 50C5—12C5 17C5—25C5 BEAM PENTODE

FOR AF POWER AMPLIFIER APPLICATIONS

**50C5**  
**12C5**  
**17C5**  
**25C5**  
ET-T990A  
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12-56

## DESCRIPTION AND RATING

The 50C5 is a miniature beam pentode primarily designed for use in the audio-frequency power-output stage of radio receivers. The tube features high power sensitivity and high efficiency at relatively low plate and screen voltages normally available in this application.

The 25C5 differs from the 50C5 in heater ratings; the 12C5 and 17C5 differ from the 50C5 in heater and heater-cathode voltage ratings; in all other characteristics the four types are identical.

The controlled heater warm-up characteristic incorporated in the 12C5 and 17C5 make them especially suited for television receivers that employ series-connected heaters.

### GENERAL

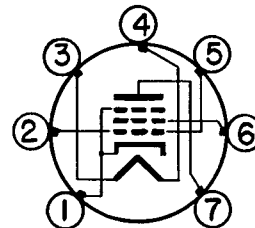
#### ELECTRICAL

	12C5	17C5	25C5	50C5	
Cathode—Coated Unipotential					
Heater Voltage, AC or DC	12.6	16.8	25.0	50.0	Volts
Heater Current	0.6	0.45	0.3	0.15	Amperes
Heater Warm-up Time*	11	11	....	....	Seconds
Direct Interelectrode Capacitances†					
Grid-Number 1 to Plate				0.55	μμf
Input				13	μμf
Output				9.0	μμf

#### MECHANICAL

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

### BASING DIAGRAM

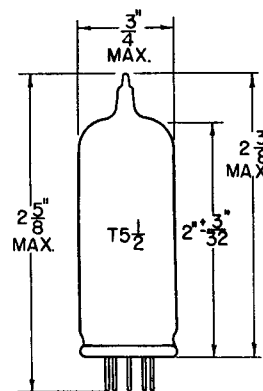


RETMA 7CV

### 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

### PHYSICAL DIMENSIONS



RETMA 5-3

**GENERAL ELECTRIC**

Supersedes ET-T990, dated 12-55

## MAXIMUM RATINGS

### DESIGN-CENTER VALUES

Plate Voltage . . . . .	135		Volts
Screen Voltage . . . . .	117		Volts
Plate Dissipation . . . . .	5.5		Watts
Screen Dissipation . . . . .	1.25		Watts
Heater-Cathode Voltage	<b>12C5</b>	<b>25C5</b>	
Heater Positive with Respect to Cathode	<b>17C5</b>	<b>50C5</b>	
DC Component . . . . .	100	100	Volts
Total DC and Peak . . . . .	200	200	Volts
Heater Negative with Respect to Cathode			
DC Component . . . . .	200	. . .	Volts
Total DC and Peak . . . . .	300	200	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias . . . . .		0.1	Megohms
With Cathode Bias . . . . .		0.5	Megohms
Bulb Temperature at Hottest Point . . . . .		250	C

## CHARACTERISTICS AND TYPICAL OPERATION

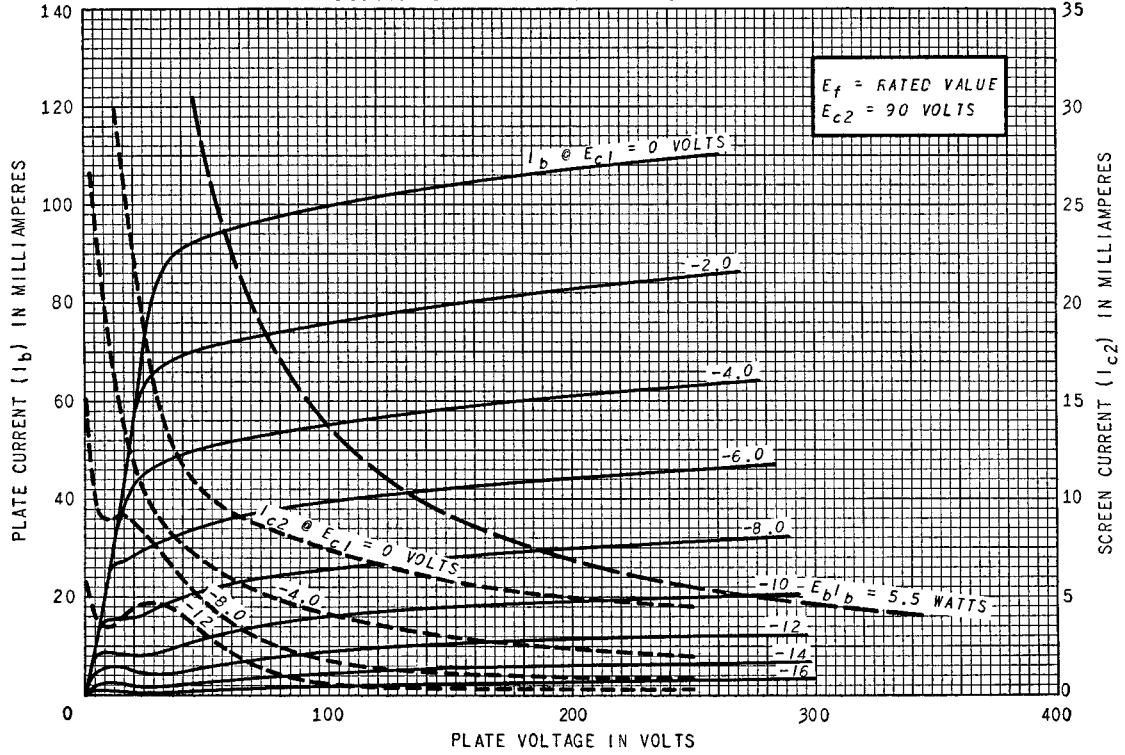
### CLASS A<sub>1</sub> AMPLIFIER

Plate Voltage . . . . .	110	Volts
Screen Voltage . . . . .	110	Volts
Grid-Number 1 Voltage . . . . .	-7.5	Volts
Peak AF Grid-Number 1 Voltage . . . . .	7.5	Volts
Plate Resistance, approximate . . . . .	10000	Ohms
Transconductance . . . . .	.7500	Micromhos
Zero-Signal Plate Current . . . . .	49	Milliamperes
Maximum-Signal Plate Current . . . . .	50	Milliamperes
Zero-Signal Screen Current . . . . .	4.0	Milliamperes
Maximum-Signal Screen Current . . . . .	8.5	Milliamperes
Load Resistance . . . . .	2500	Ohms
Total Harmonic Distortion, approximate . . . . .	9	Percent
Maximum-Signal Power Output . . . . .	1.9	Watts

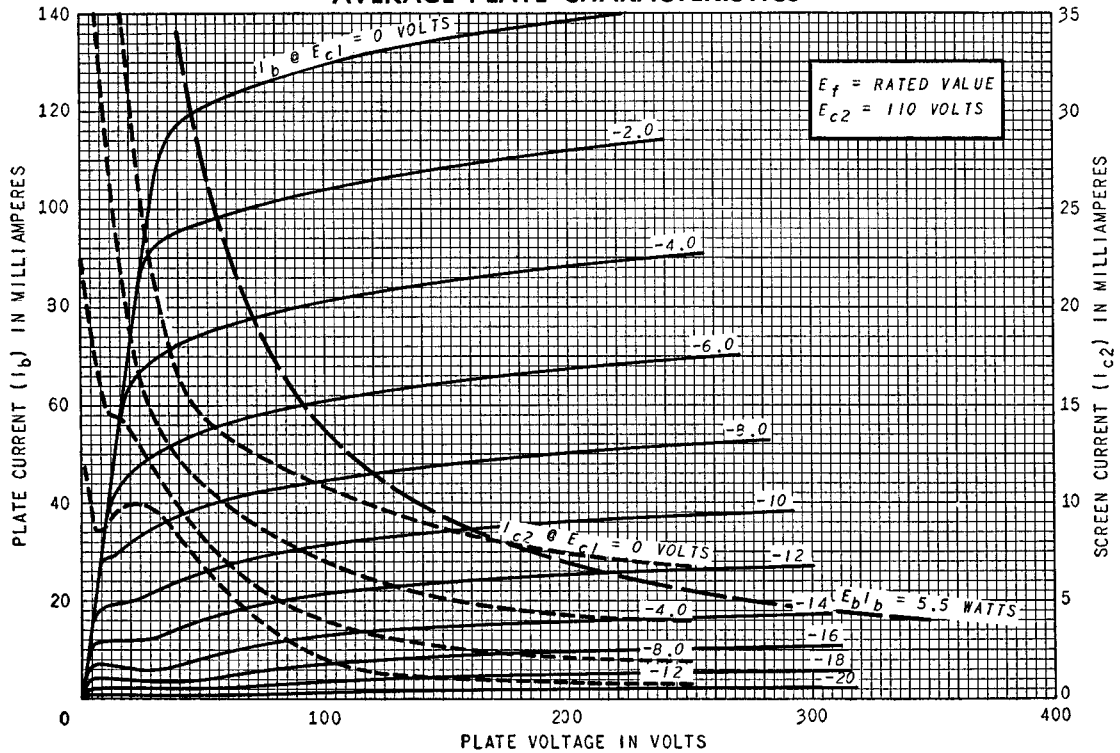
\* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† Without external shield.

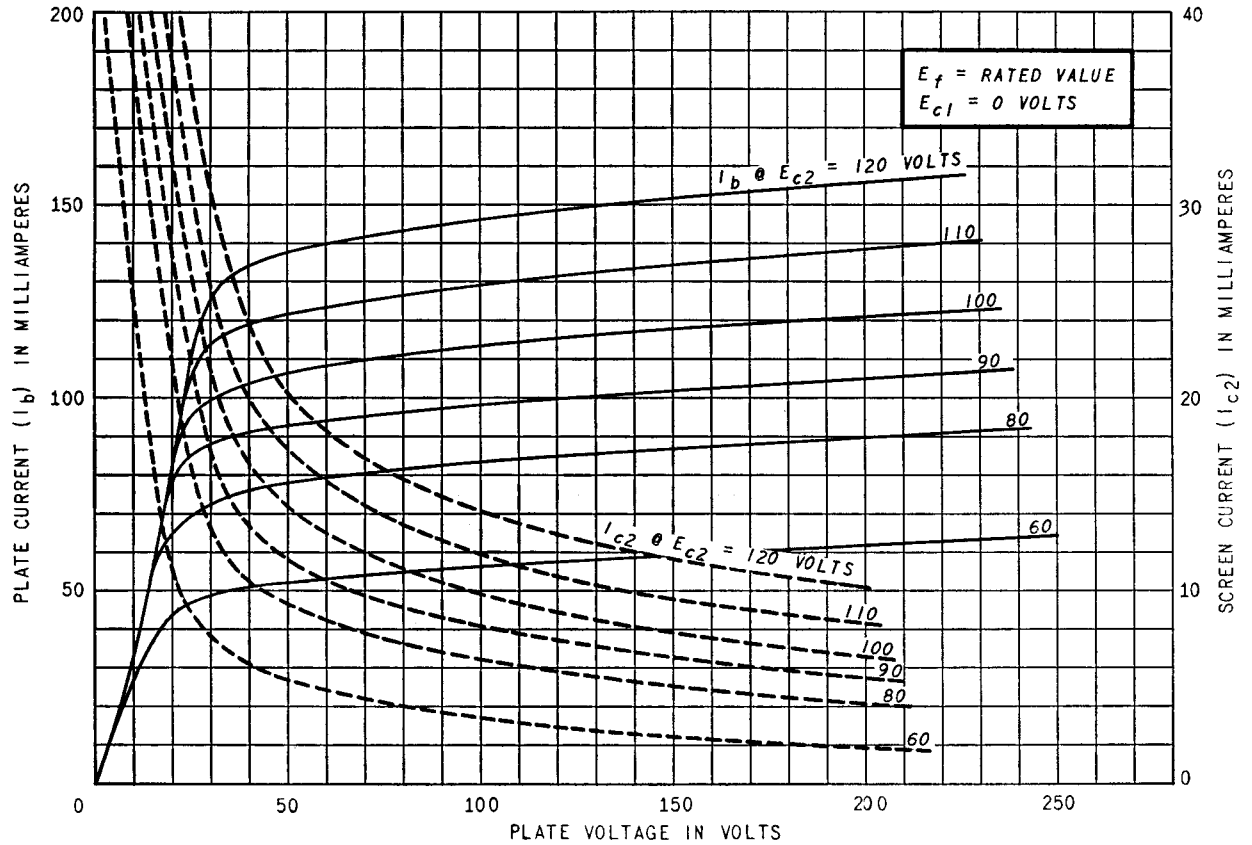
**AVERAGE PLATE CHARACTERISTICS**



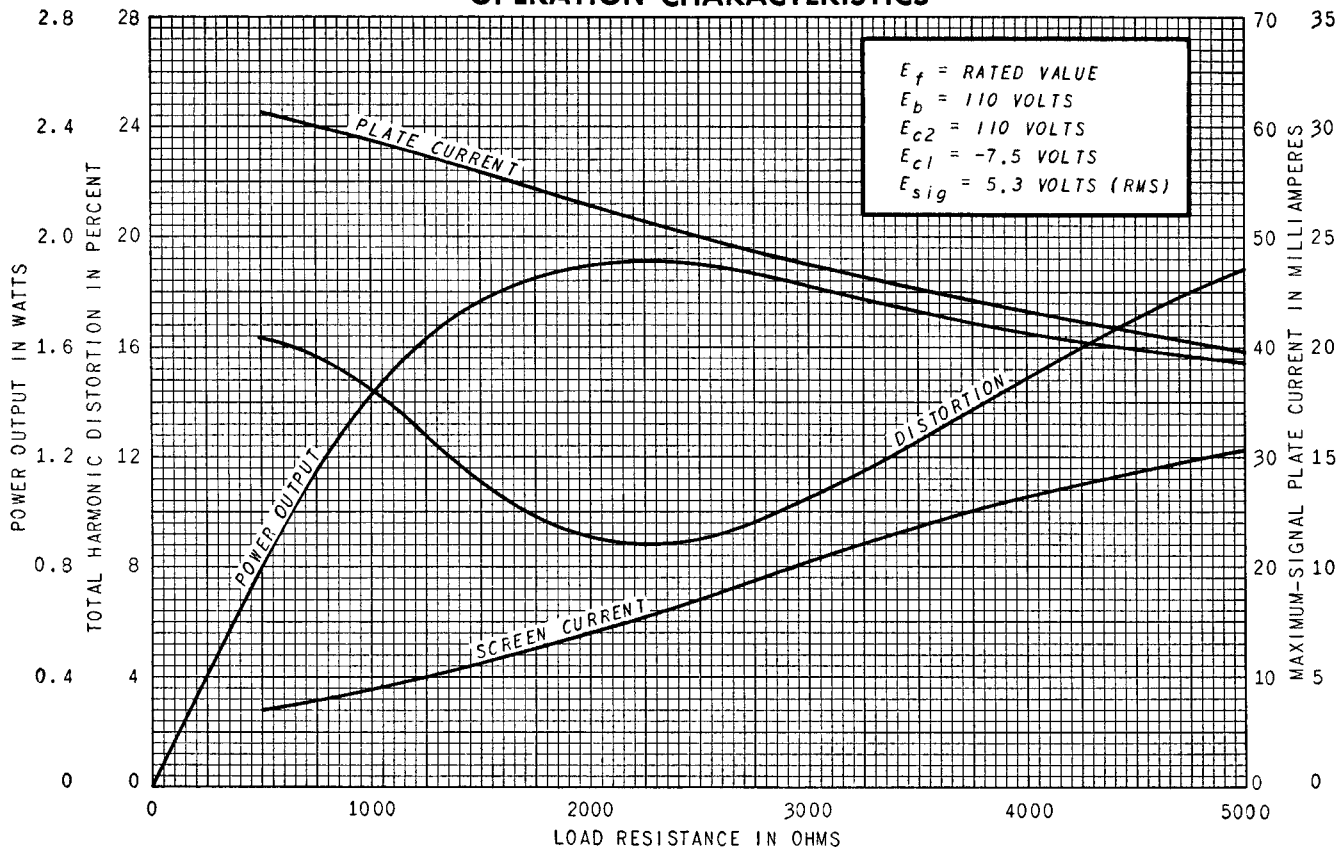
**AVERAGE PLATE CHARACTERISTICS**



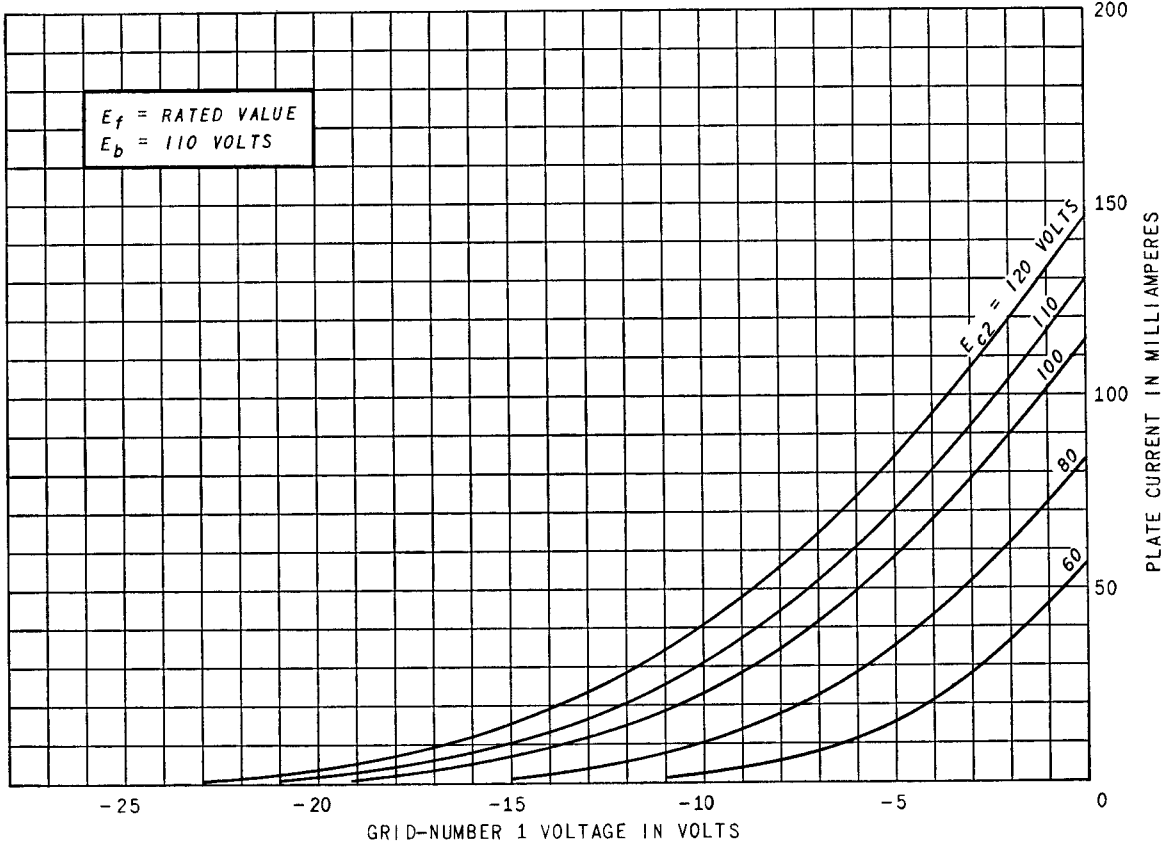
### AVERAGE PLATE CHARACTERISTICS



### OPERATION CHARACTERISTICS



### AVERAGE TRANSFER CHARACTERISTICS



### AVERAGE TRANSFER CHARACTERISTICS

