

## PENTODE

### DESCRIPTION AND RATING

The 6CF6 is a miniature sharp-cutoff pentode designed especially for use as a gain-controlled intermediate-frequency amplifier in television receivers. Except for the plate-current cutoff characteristic, the 6CF6 is identical to the 6CB6; and like that tube features high transconductance and low interelectrode capacitances. The tube is also useful as a radio-frequency amplifier in VHF television tuners.

The 3CF6 is identical to the 6CF6 except for heater ratings. The 3CF6 in addition incorporates a controlled heater warm-up characteristic which makes it especially suited for use in television receivers that employ 600-milliamperere, series-connected heaters.

### GENERAL

#### ELECTRICAL

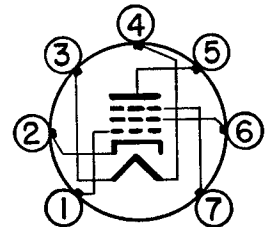
Cathode—Coated Unipotential	<b>3CF6</b>	<b>6CF6</b>	
Heater Voltage, AC or DC	3.15	6.3 ± 10%	Volts
Heater Current	0.6 ± 6%	0.3	Amperes
Heater Warm-up Time*	11	..	Seconds

Direct Interelectrode Capacitances	<b>With Shield†</b>	<b>Without Shield</b>	
Grid-Number 1 to Plate, maximum	0.015	0.025	μμf
Input	6.5	6.5	μμf
Output	3.0	2.0	μμf

#### MECHANICAL

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

#### BASING DIAGRAM

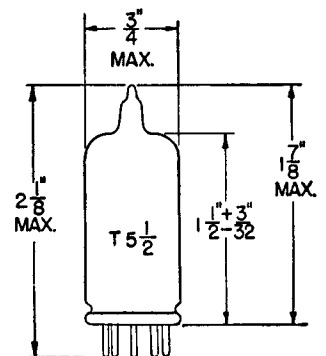


RETMA 7CM

#### 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)

#### PHYSICAL DIMENSIONS



RETMA 5-2

## 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

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.

## CHARACTERISTICS AND TYPICAL OPERATION

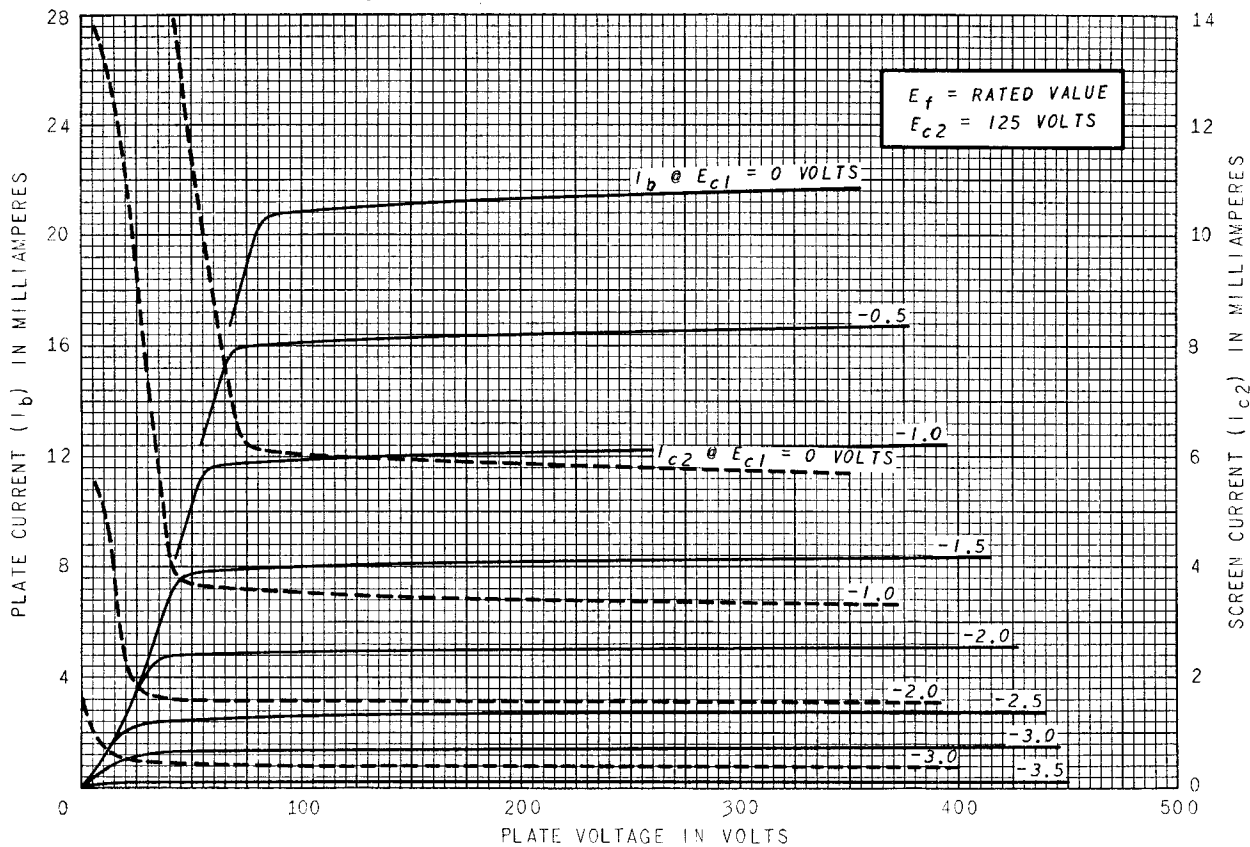
### CLASS A<sub>1</sub> AMPLIFIER

Plate Voltage .....	125			
Suppressor, Connected to Cathode at Socket		125	Volts	
Screen Voltage .....	125		Volts	
Grid-Number 1 Voltage .....	-3.0		Volts	
Cathode-Bias Resistor .....		56	Ohms	
Plate Resistance, approximate .....		0.3	Megohms	
Transconductance .....		7800	Micromhos	
Plate Current .....	2.2		Milliamperes	
Screen Current .....		3.7	Milliamperes	
Grid-Number 1 Voltage, approximate				
I <sub>b</sub> —20 Microamperes .....		-6.0	Volts	

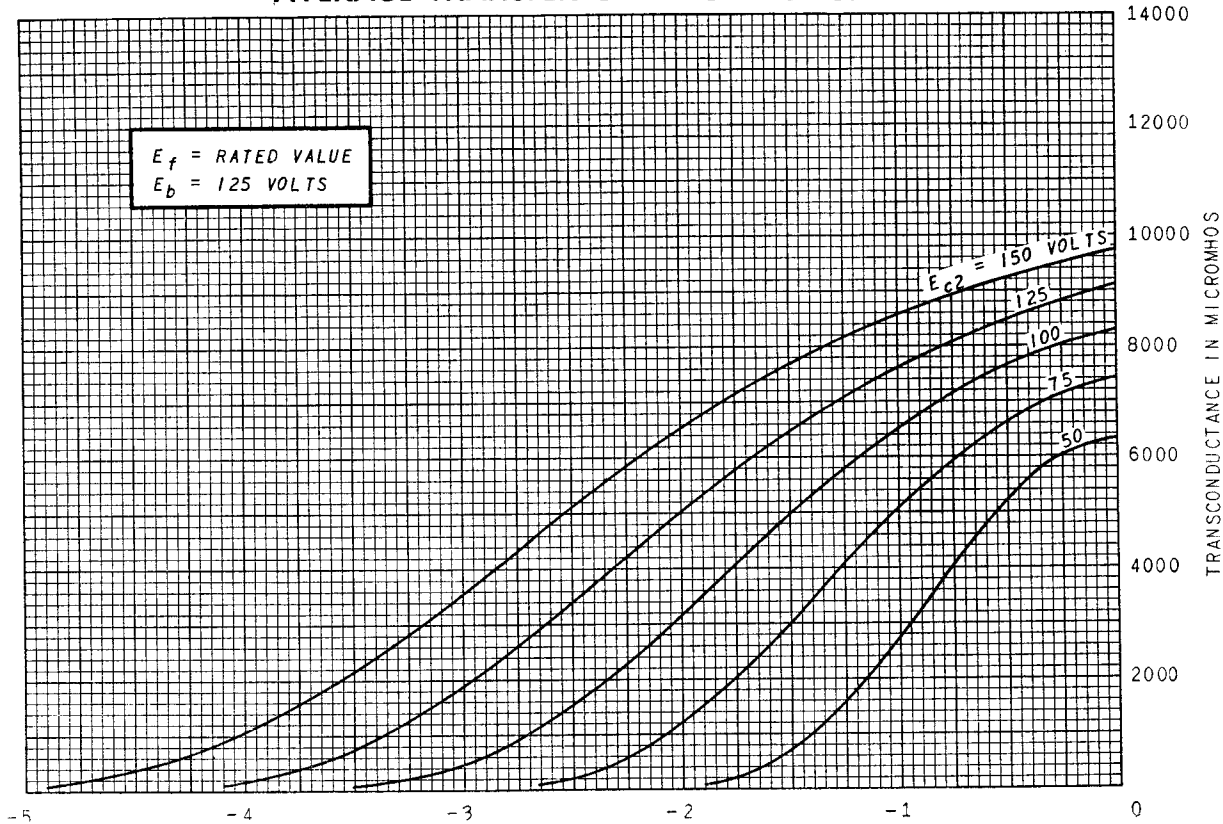
\* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† With external shield (RETMA 316) connected to pin 2.

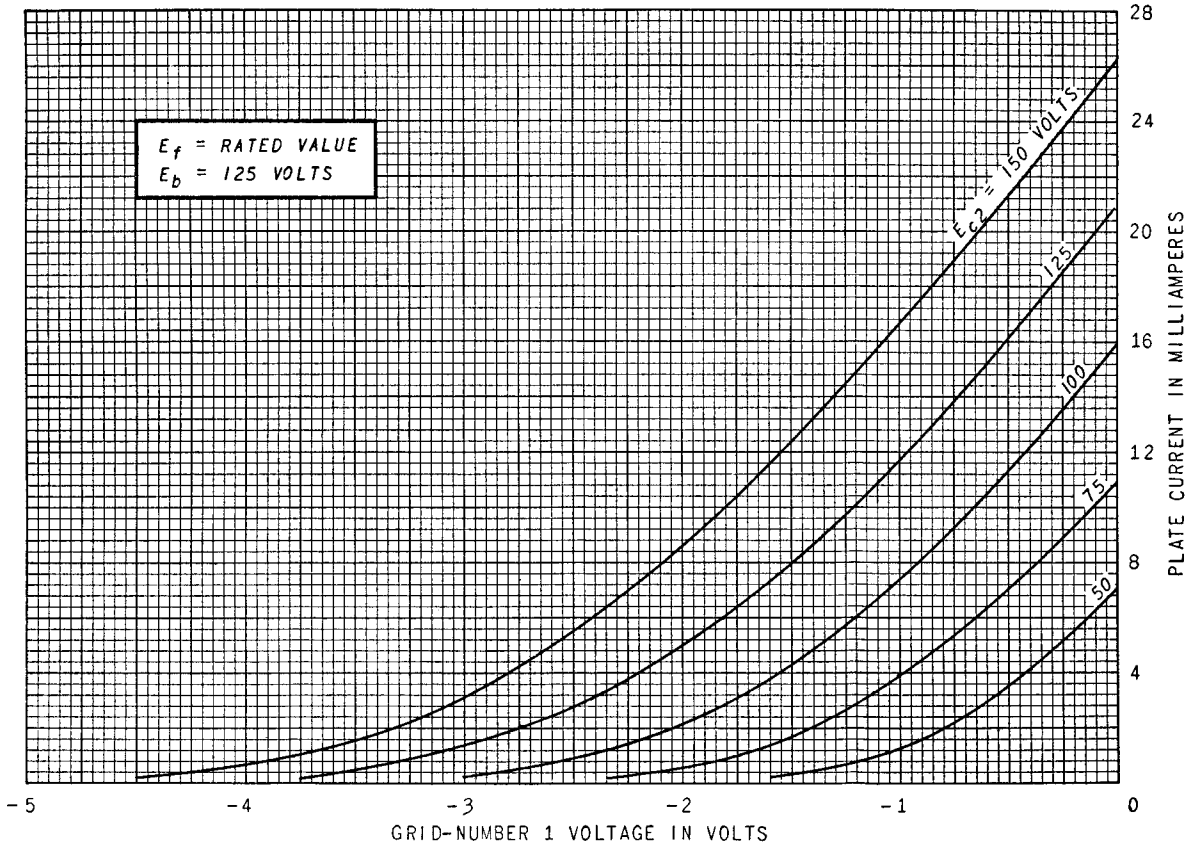
### AVERAGE PLATE CHARACTERISTICS



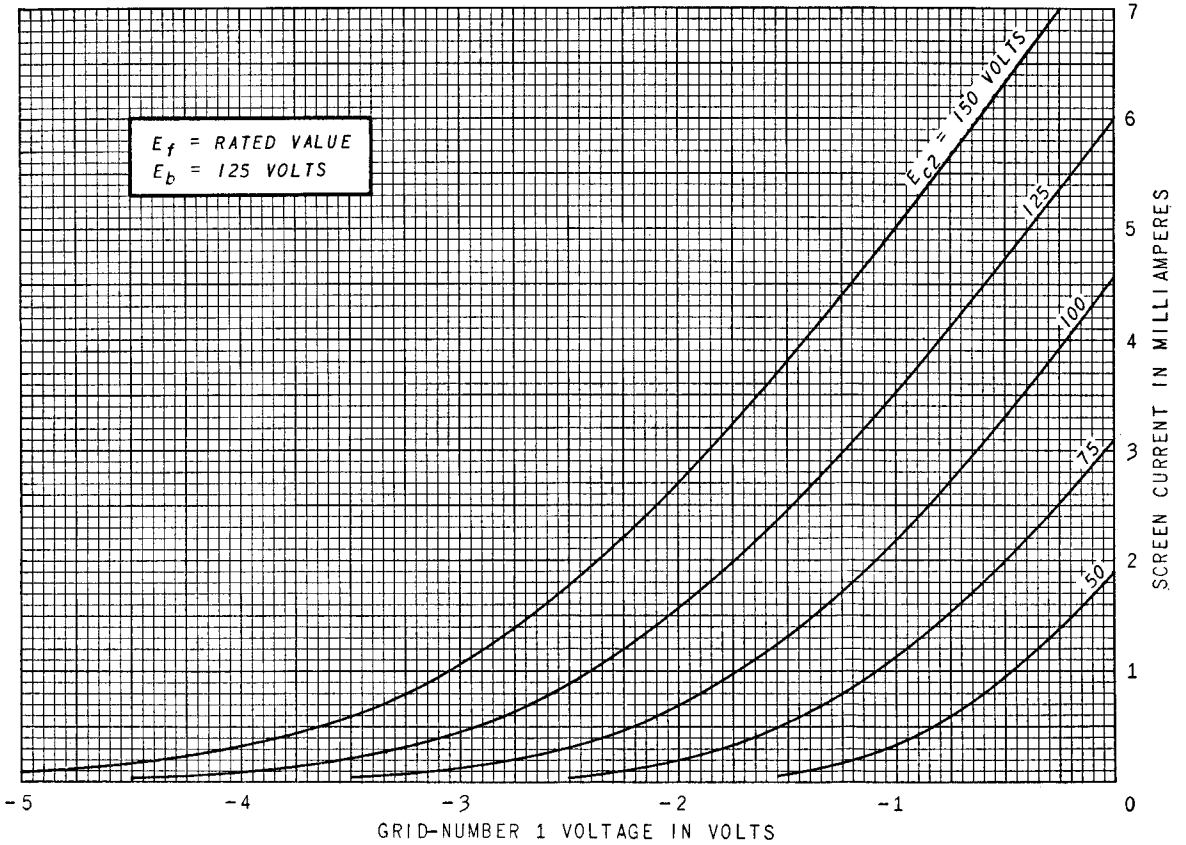
### AVERAGE TRANSFER CHARACTERISTICS



### AVERAGE TRANSFER CHARACTERISTICS



### AVERAGE TRANSFER CHARACTERISTICS



### SCREEN RATING CHART

