

DESCRIPTION AND RATING

The 6BA6 is a miniature remote-cutoff pentode primarily designed for use as a high-gain radio-frequency or intermediate-frequency amplifier. Features include small size, low grid-plate capacitance, and high transconductance.

Except for heater ratings the 3BA6 and 4BA6 are identical to the 6BA6. In addition, they incorporate a controlled heater-warm-up characteristic which makes them especially suited for use in television receivers that employ series-connected heaters.

The 12BA6, which differs from the 6BA6 only in heater ratings and heater-cathode voltage ratings, is especially useful in a-c/d-c radio receivers.

GENERAL

Electrical

Cathode—Coated Unipotential

	3BA6	4BA6	6BA6	12BA6
Heater Voltage, AC or DC	3.15	4.2	6.3	12.6 Volts
Heater Current	0.6	0.45	0.3	0.15 Amperes
Heater Warm-up Time*	11	11 Seconds
Direct Interelectrode Capacitances				

With Shield†

Without Shield

Grid-Number 1 to Plate, maximum	0.0035	0.0035 $\mu\mu\text{f}$
Input	5.5	5.5 $\mu\mu\text{f}$
Output	5.5	5.0 $\mu\mu\text{f}$

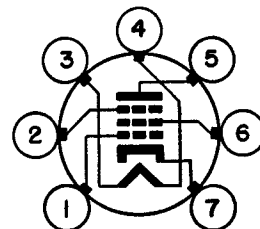
Mechanical

Mounting Position—Any

Envelope—T-5½, Glass

Base—E7-1, Miniature Button 7-Pin

BASIC DIAGRAM

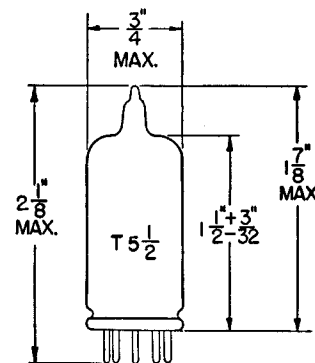


RETMA 7CC

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



RETMA 5-2

MAXIMUM RATINGS

DESIGN-CENTER VALUES

Plate Voltage	300	Volts
Screen-Supply Voltage	300	Volts
Screen Voltage—See Screen Rating Chart		
Positive DC Grid-Number 1 Voltage	0	Volts
Negative DC Grid-Number 1 Voltage	50	Volts
Plate Dissipation	3.0	Watts
Screen Dissipation	0.6	Watts

	3BA6	
Heater-Cathode Voltage	4BA6	
Heater Positive with Respect to Cathode	6BA6	12BA6
DC Component	100	. . . Volts
Total DC and Peak	200	100 Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	100 Volts

CHARACTERISTICS AND TYPICAL OPERATION

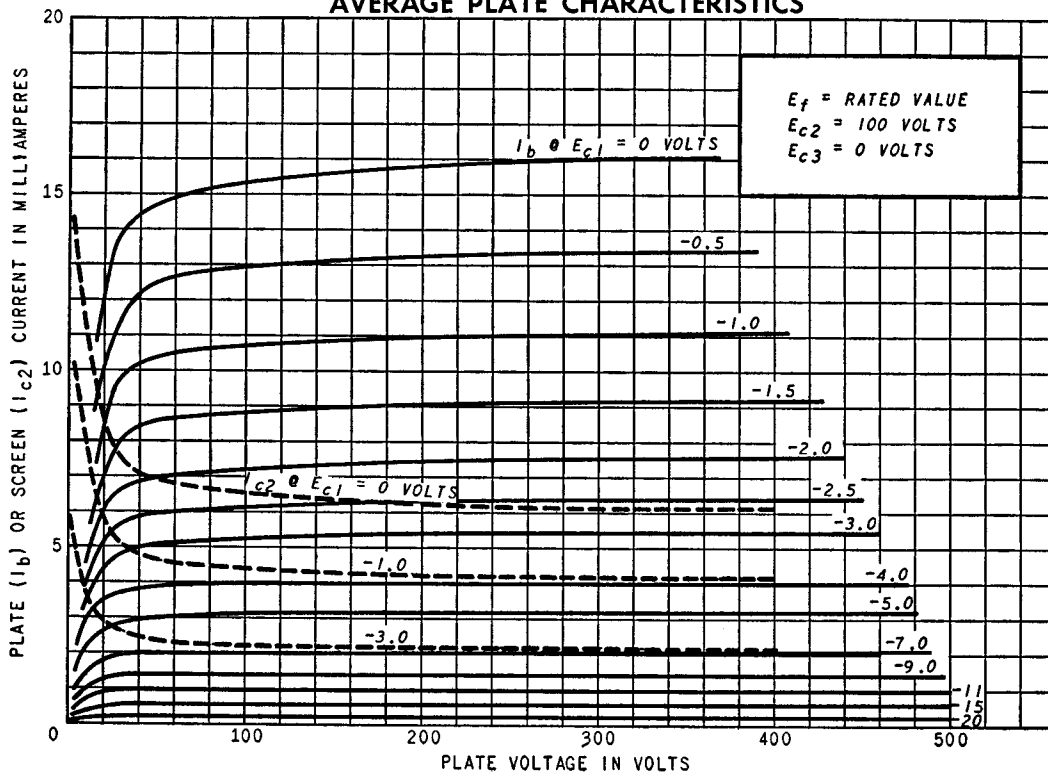
CLASS A₁ AMPLIFIER

Plate Voltage	100	250 Volts
Suppressor, Connected to Cathode at Socket		
Screen Voltage	100	100 Volts
Cathode-Bias Resistor	68	68 Ohms
Plate Resistance, approximate	0.25	1.0 Megohms
Transconductance	4300	4400 Micromhos
Plate Current	10.8	11 Milliampere
Screen Current	4.4	4.2 Milliampere
Grid-Number 1 Voltage, approximate		
$G_m = 40$ Micromhos	-20	-20 Volts

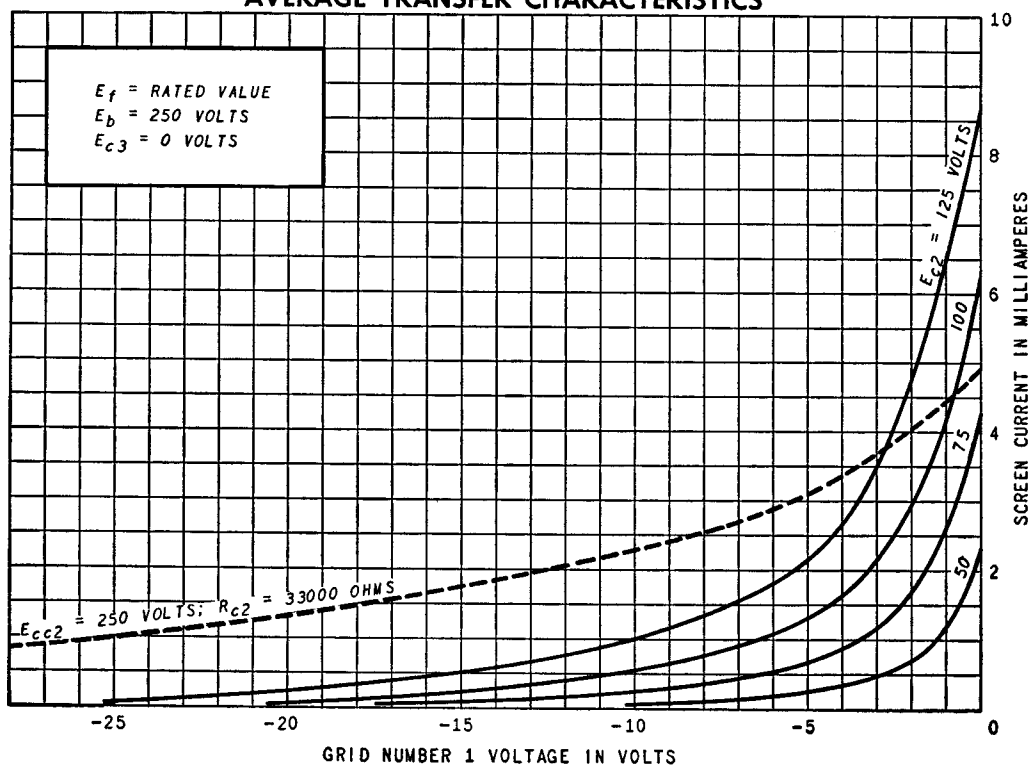
* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† With external shield (RETMA 316) connected to pin 7.

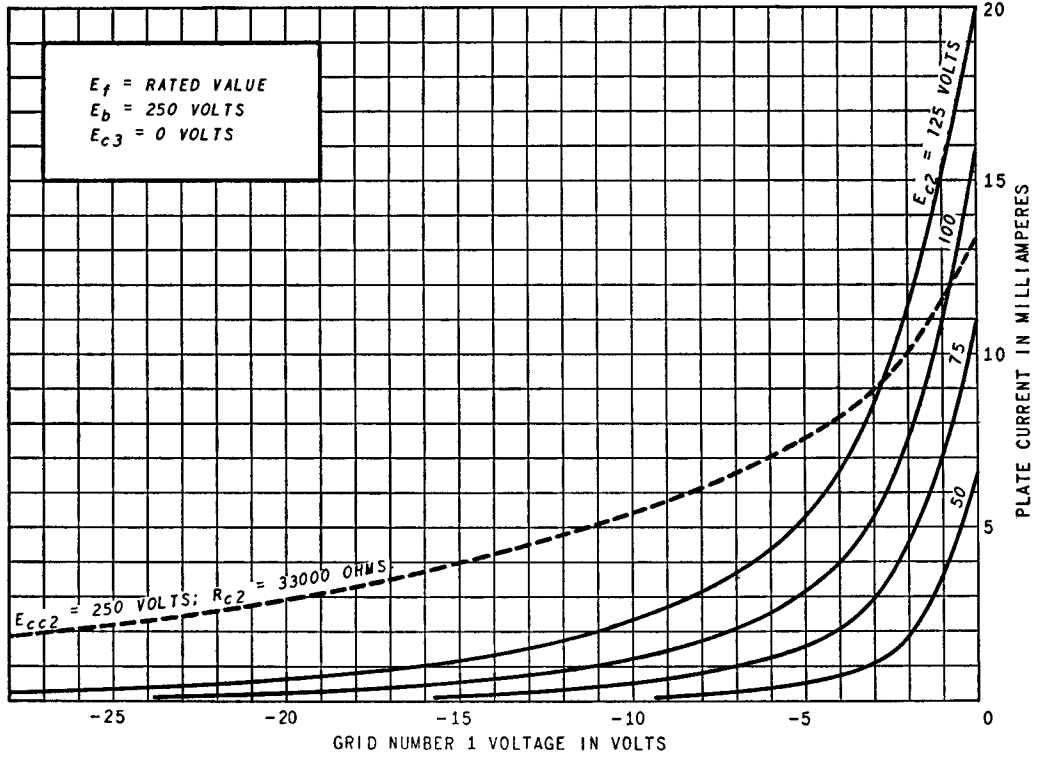
AVERAGE PLATE CHARACTERISTICS



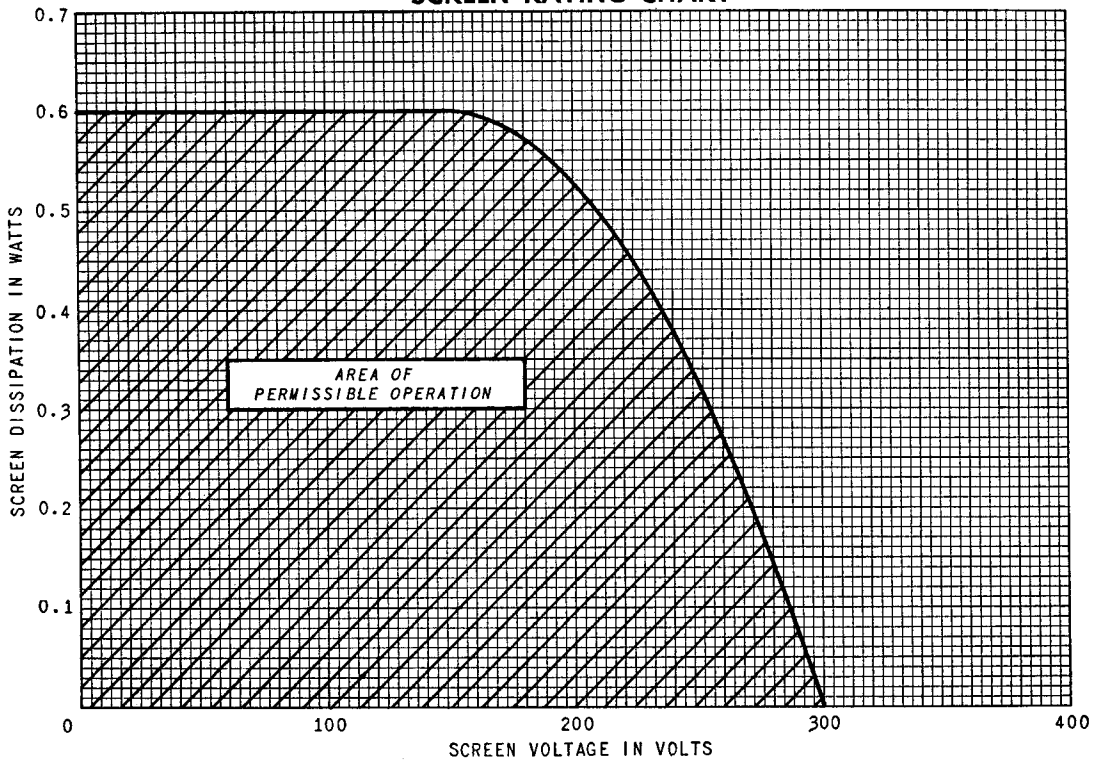
AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



SCREEN RATING CHART



AVERAGE TRANSFER CHARACTERISTICS

