6BA6—3BA6—4BA6—12BA6

PENTODE

FOR RF AND IF AMPLIFIER APPLICATIONS

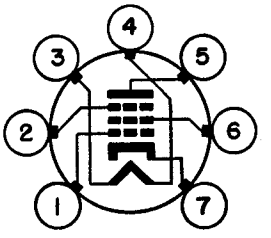
DESCRIPTION AND RATING

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.

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

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

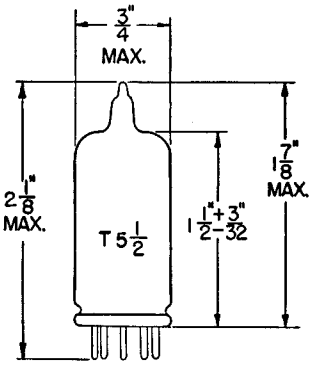
Direct Interelectrode Capacitances

	With Shield†	Without Shield	
Grid-Number 1 to Plate, maximum	0.0035	0.0035	μμf
Input	5.5	5.5	μμf
Output	5.5	5.0	μμf

Mechanical

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

PHYSICAL DIMENSIONS



RETMA 5-2

GENERAL ELECTRIC

Supersedes ET-T897 dated 9-54

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 4BA6 6BA6	12BA6	
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
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

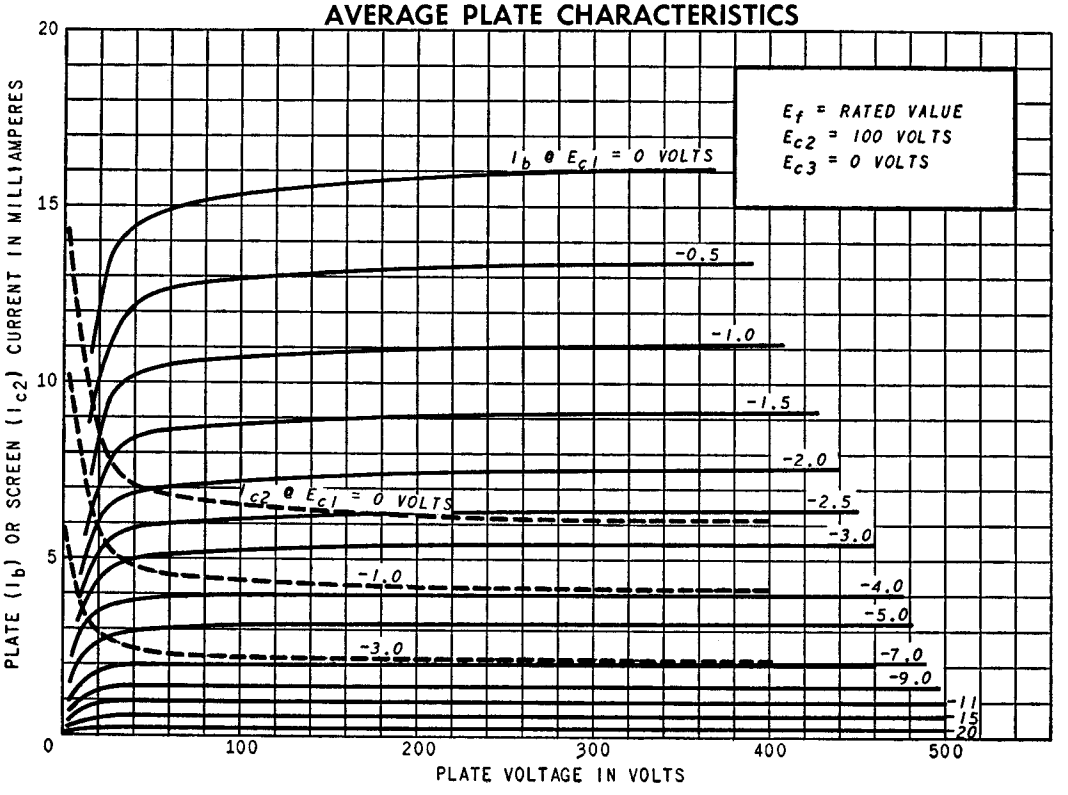
CLASS A_1 AMPLIFIER

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	Milliamperes
Screen Current	4.4	4.2	Milliamperes
Grid-Number 1 Voltage, approximate			
G_m=40 Micromhos	−20	−20	Volts

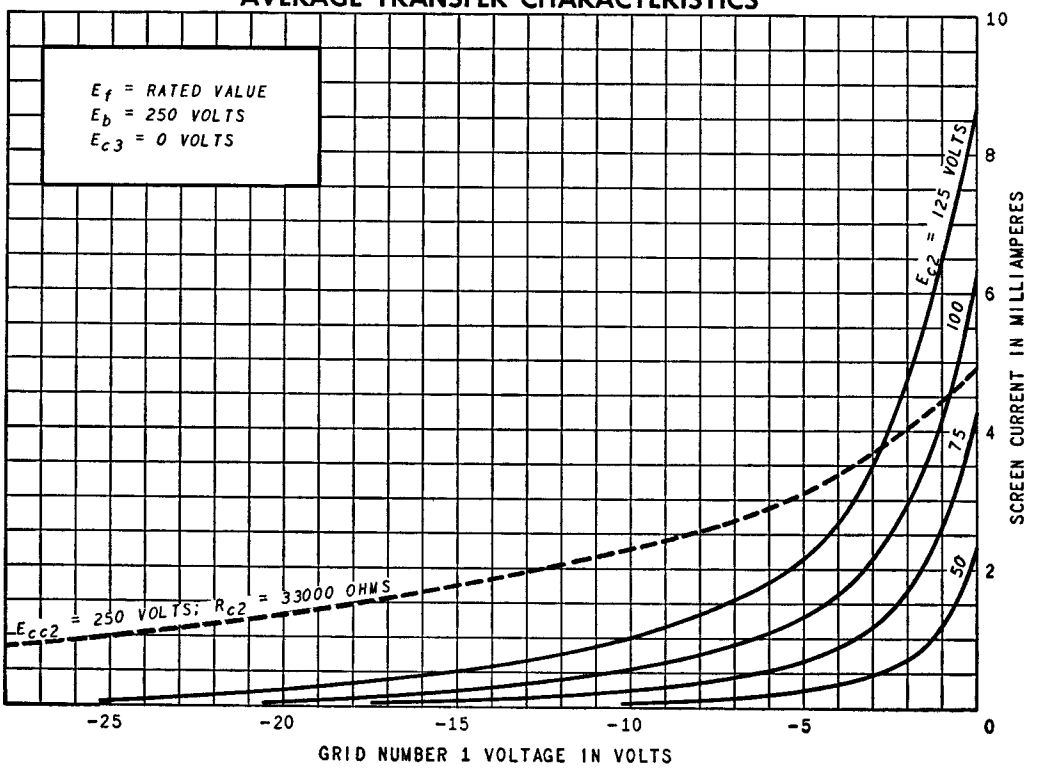
* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

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

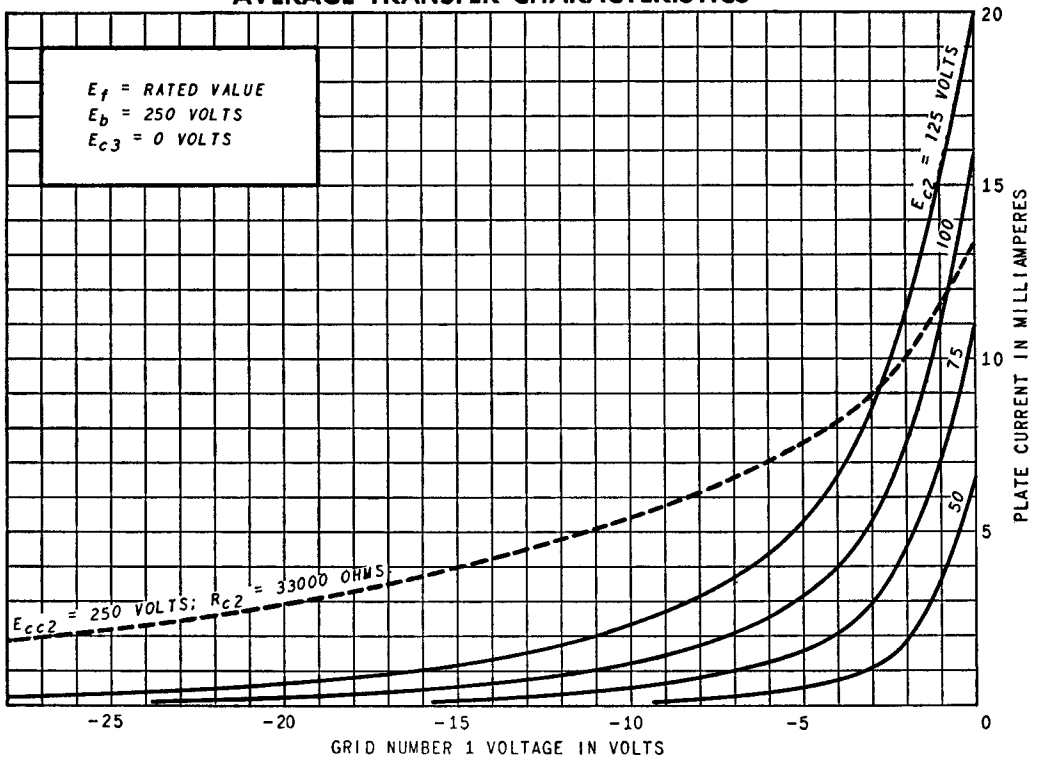
AVERAGE PLATE CHARACTERISTICS



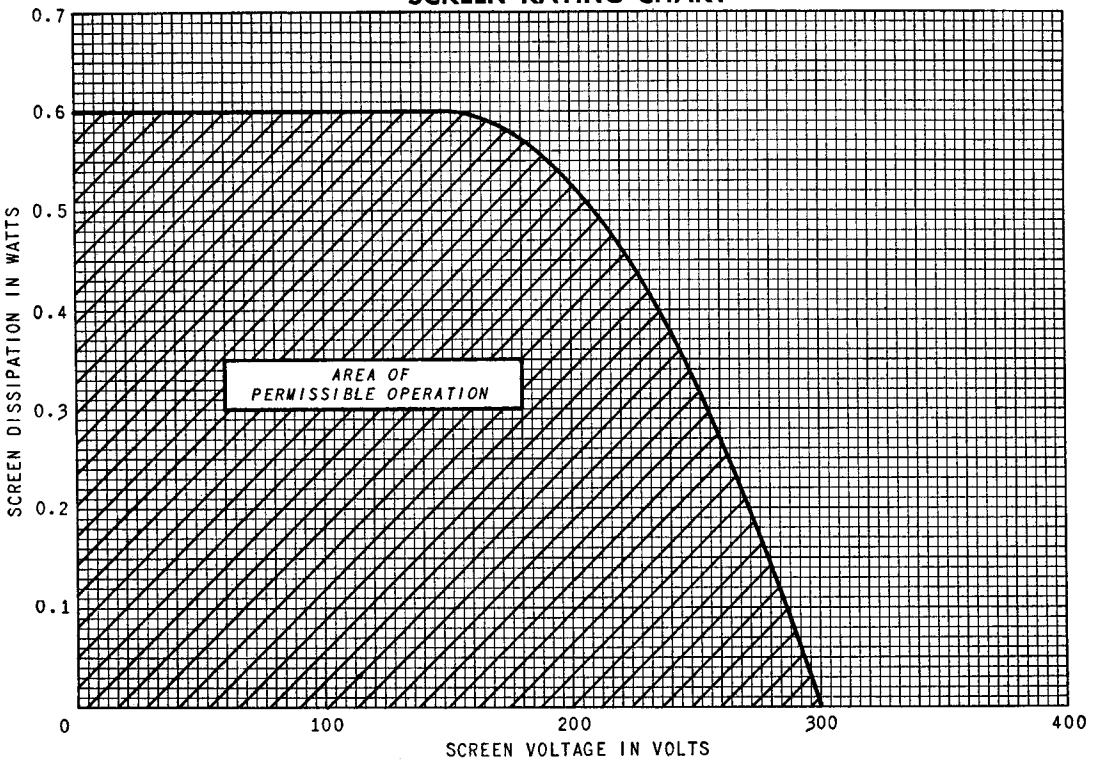
AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



SCREEN RATING CHART



AVERAGE TRANSFER CHARACTERISTICS