

TWIN TRIODE

DESCRIPTION AND RATING

The 12AT7 is a miniature, high-mu, twin triode designed for use as a grounded-grid radio-frequency amplifier or as a combined oscillator and mixer at frequencies below approximately 300 megacycles.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential	Series	Parallel
Heater Voltage, AC or DC	12.6	6.3 Volts
Heater Current	0.15	0.3 Amperes
	With Shield*	Without Shield
Direct Interelectrode Capacitances		
Grid to Plate, Each Section	1.5	1.5 $\mu\mu\text{f}$
Input, Each Section	2.2	2.2 $\mu\mu\text{f}$
Output, Section 1	1.2	0.5 $\mu\mu\text{f}$
Output, Section 2	1.5	0.4 $\mu\mu\text{f}$
Heater to Cathode, Each Section	2.4	2.4 $\mu\mu\text{f}$
	With Shield†	Without Shield
Grounded-Grid Operation		
Plate to Cathode, Each Section	0.2	0.2 $\mu\mu\text{f}$
Grounded-Grid Input, Each Section	4.6	4.6 $\mu\mu\text{f}$
Grounded-Grid Output, Each Section	2.6	1.8 $\mu\mu\text{f}$

MECHANICAL

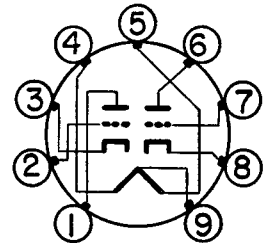
Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin

MAXIMUM RATINGS

DESIGN-CENTER VALUES, EACH SECTION

Plate Voltage	300	Volts
Negative DC Grid Voltage	50	Volts
Plate Dissipation	2.5	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	90	Volts
Heater Negative with Respect to Cathode	90	Volts

BASING DIAGRAM

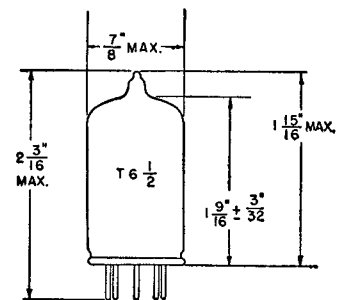


RETMA 9A

TERMINAL CONNECTIONS

- Pin 1—Plate (Section 2)
- Pin 2—Grid (Section 2)
- Pin 3—Cathode (Section 2)
- Pin 4—Heater
- Pin 5—Heater
- Pin 6—Plate (Section 1)
- Pin 7—Grid (Section 1)
- Pin 8—Cathode (Section 1)
- Pin 9—Heater Center-Tap

PHYSICAL DIMENSIONS



RETMA 6-2

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A₁ AMPLIFIER, EACH SECTION

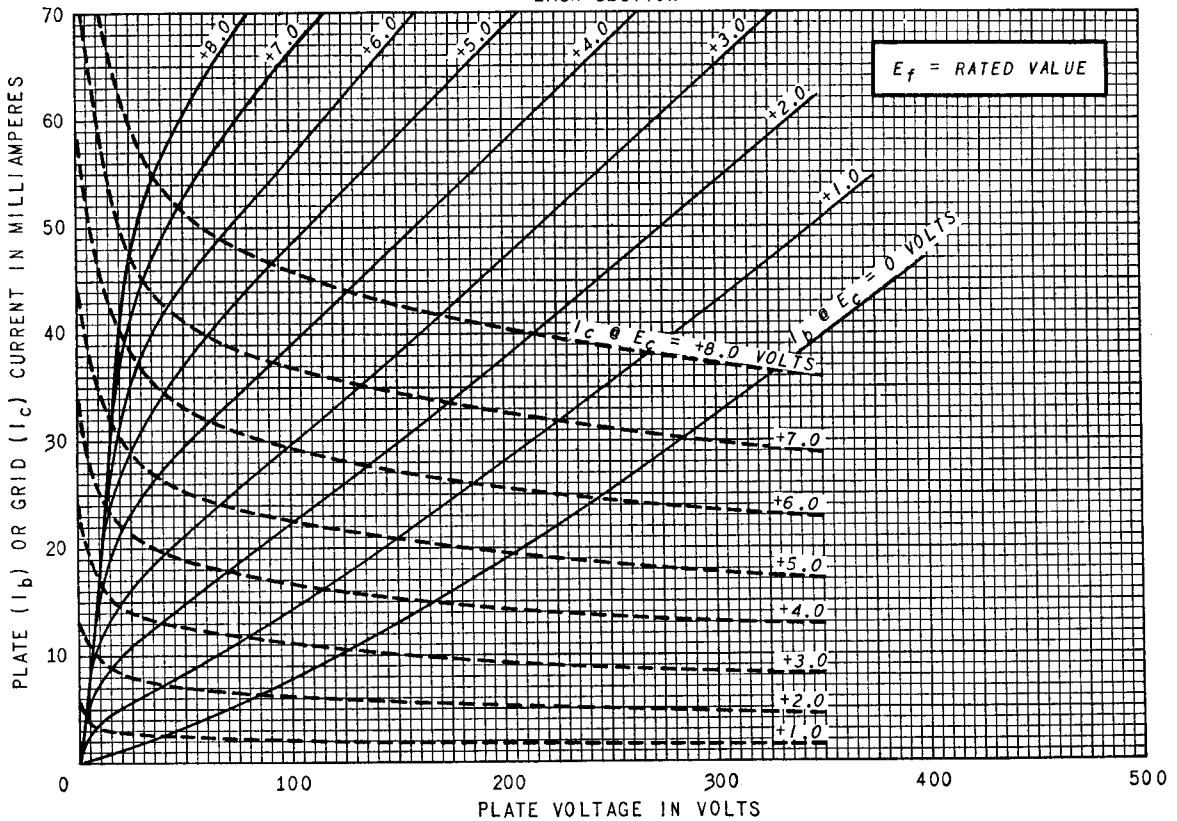
Plate Voltage	100	250	Volts
Cathode-Bias Resistor	270	200	Ohms
Amplification Factor	60	60	
Plate Resistance, approximate	15000	10900	Ohms
Transconductance	4000	5500	Micromhos
Plate Current	3.7	10	Milliamperes
Grid Voltage, approximate			
I _b = 10 Microamperes	-5	-12	Volts

* With external shield (RETMA 315) connected to cathode of section under test.

† With external shield (RETMA 315) connected to grid of section under test.

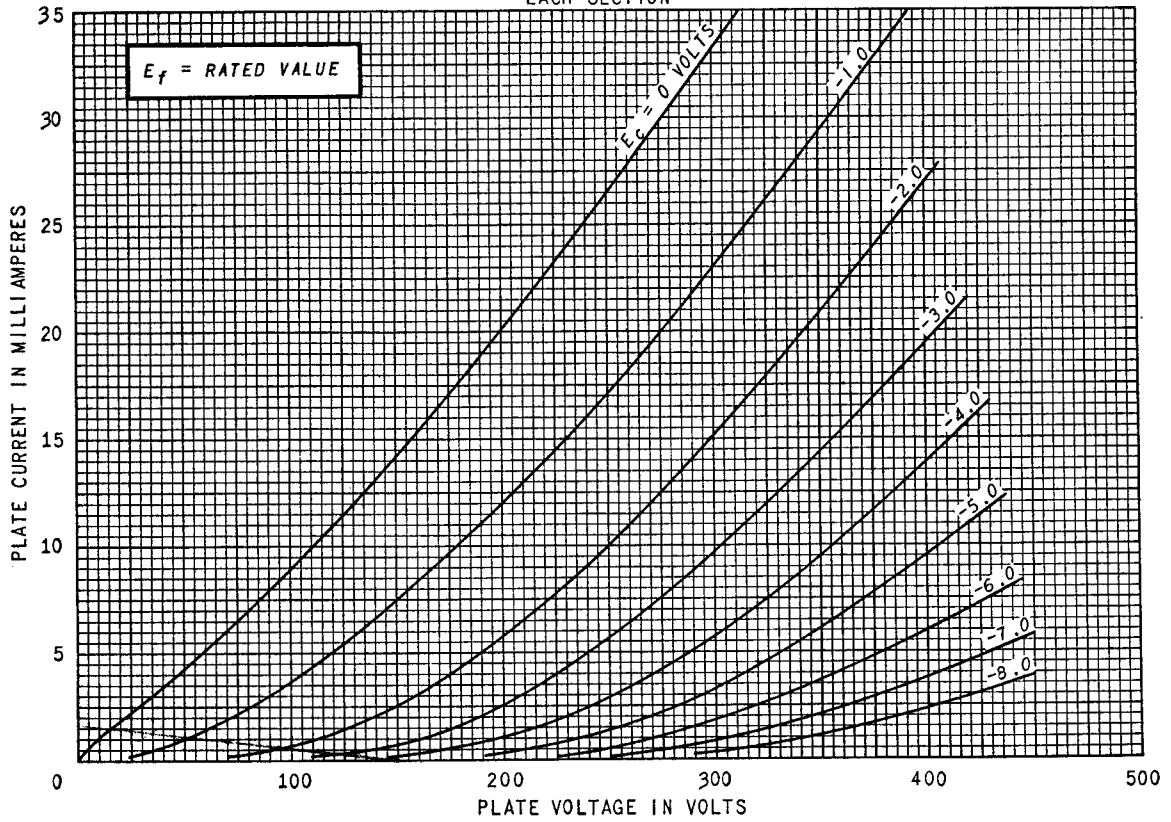
AVERAGE PLATE CHARACTERISTICS

EACH SECTION

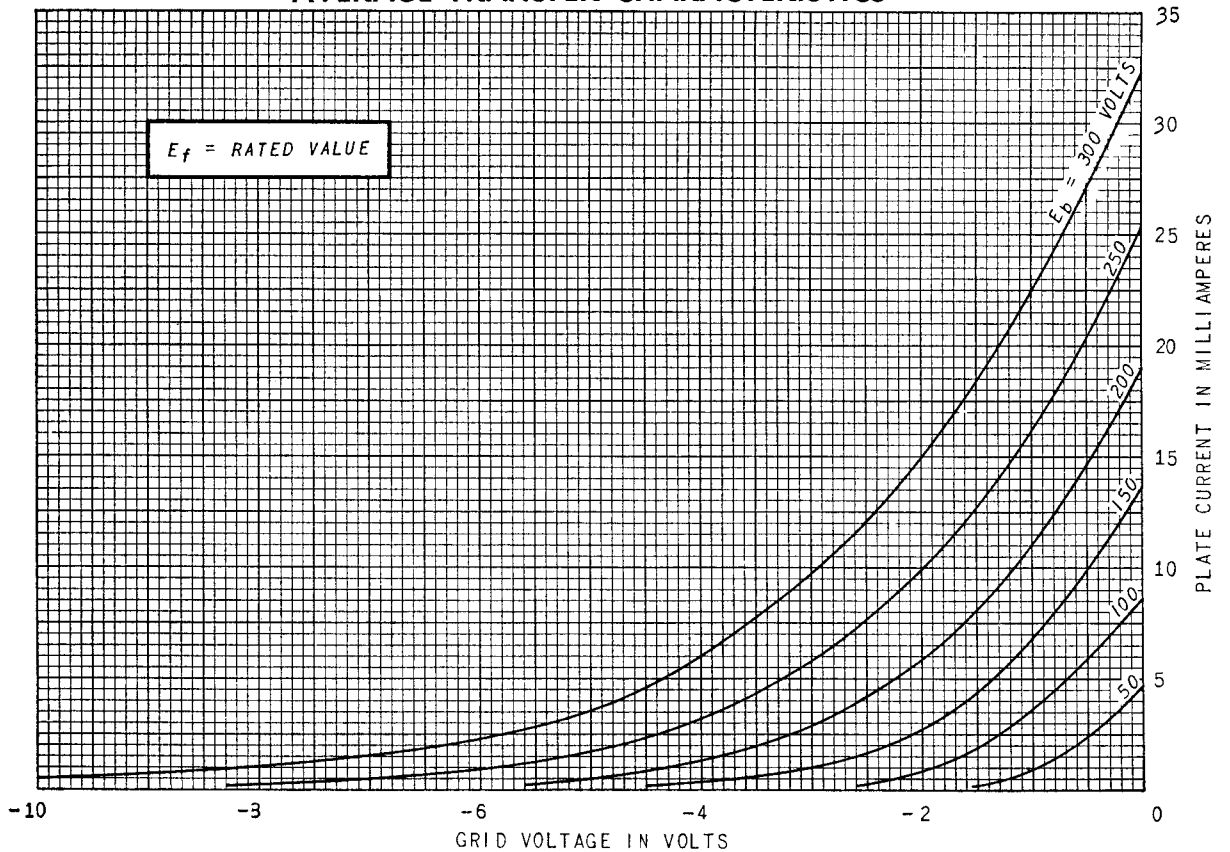


AVERAGE PLATE CHARACTERISTICS

EACH SECTION

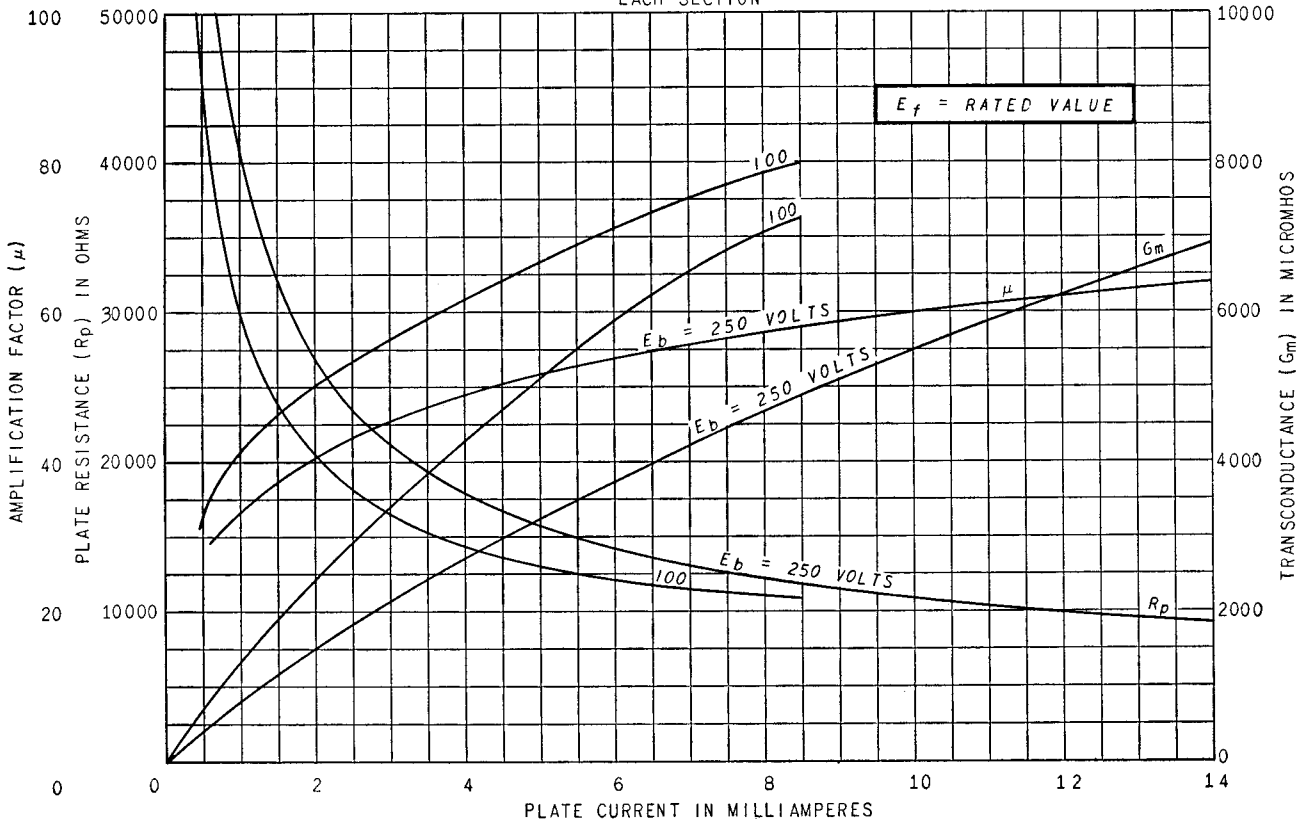


AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS

EACH SECTION



ELECTRONIC COMPONENTS DIVISION



Schenectady 5, N. Y.