

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

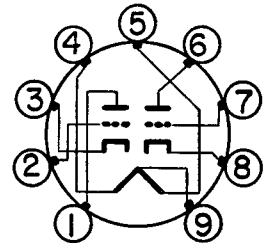
Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin

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

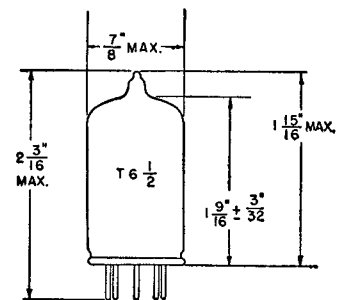


RETMA 9A

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

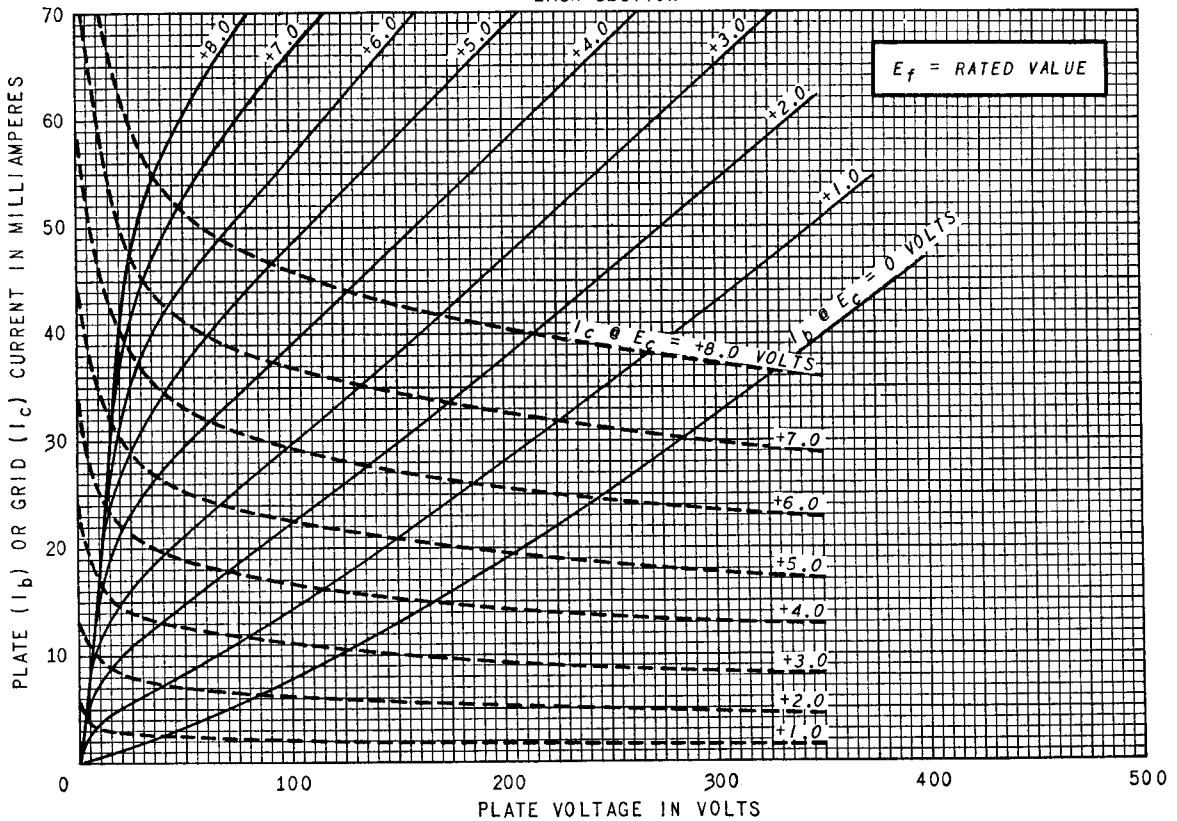
| | | | |
|--|-------|-------|--------------|
| Plate Voltage | 100 | 250 | Volts |
| Cathode-Bias Resistor | 270 | 200 | Ohms |
| Amplification Factor | 60 | 60 | |
| Plate Resistance, approximate | 15000 | 10900 | Ohms |
| Transconductance | 4000 | 5500 | Micromhos |
| Plate Current | 3.7 | 10 | Milliamperes |
| 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.

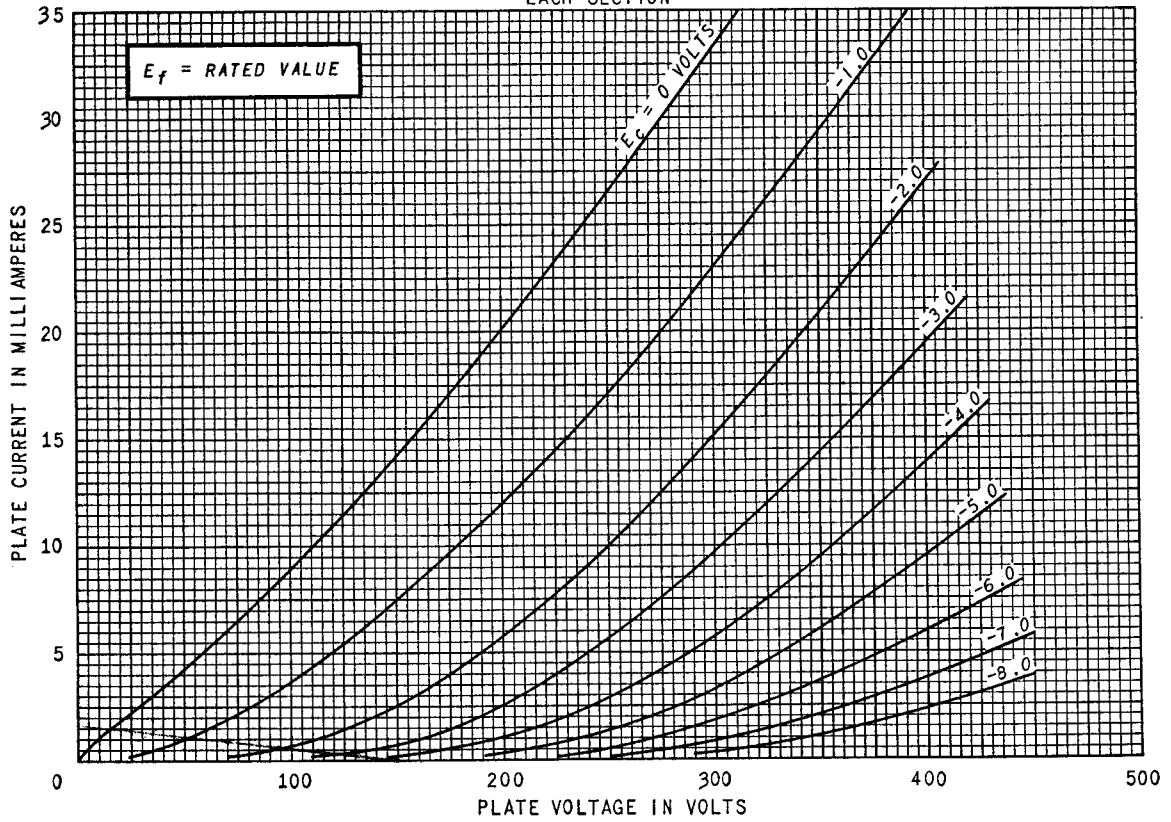
AVERAGE PLATE CHARACTERISTICS

EACH SECTION

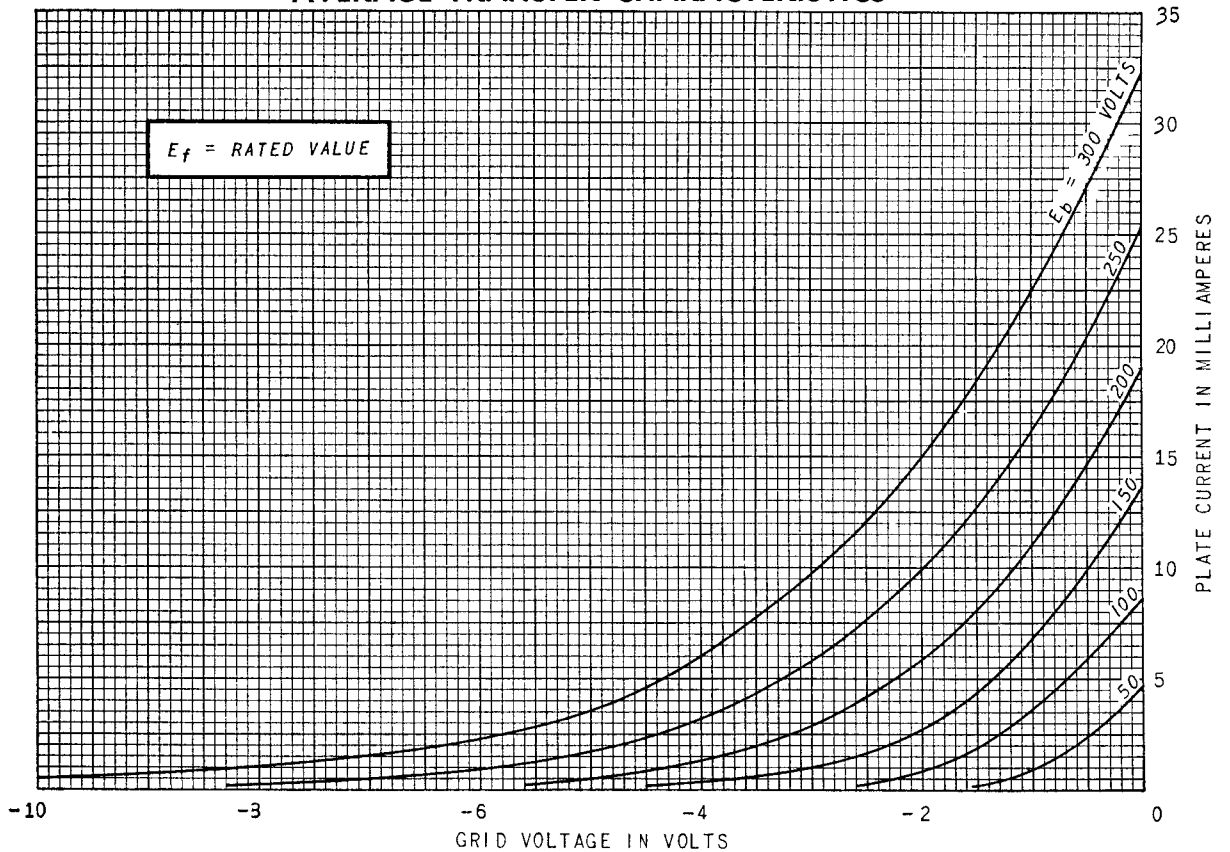


AVERAGE PLATE CHARACTERISTICS

EACH SECTION

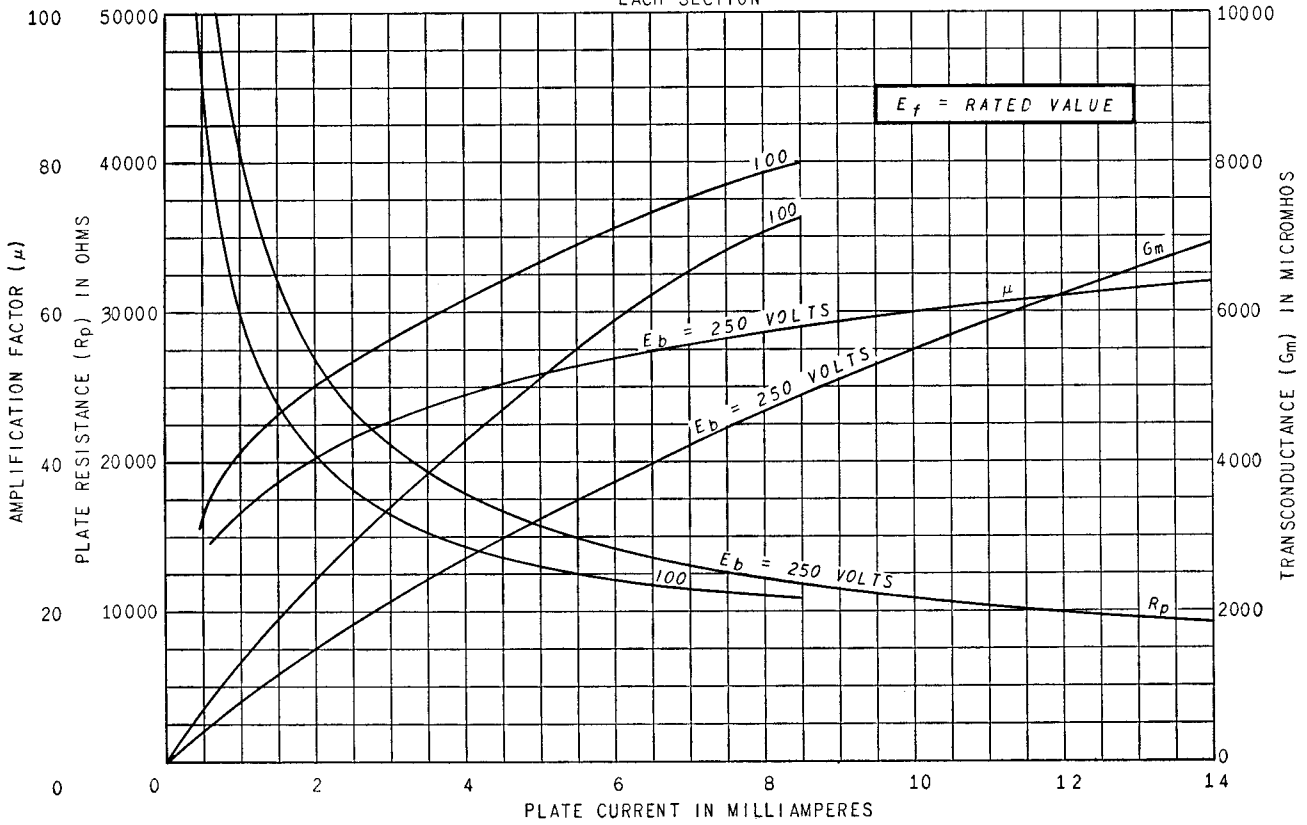


AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS

EACH SECTION



ELECTRONIC COMPONENTS DIVISION



Schenectady 5, N. Y.