

**EIMAC**

A Division of Varian Associates
SAN CARLOS, CALIFORNIA

25T**MEDIUM-MU TRIODE**

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**MODULATOR
OSCILLATOR
AMPLIFIER**

The Eimac 25T is a medium-mu, power triode having a maximum plate dissipation of 25 watts and is intended for use as an amplifier, oscillator or modulator. It can be used at its maximum ratings at frequencies as high as 60 Mc.

Cooling of the 25T is accomplished by radiation from the plate, which operates at a visible red color at maximum dissipation and by means of air convection around the envelope.

GENERAL CHARACTERISTICS**ELECTRICAL**

Filament: Thoriated tungsten

Voltage - - - - - 6.3 volts

Current - - - - - 3.0 amperes

Amplification Factor (Average) - - - - - 24

Direct Interelectrode Capacitances (Average)

Grid-Plate - - - - - 1.5 $\mu\mu\text{f}$ Grid-Filament - - - - - 2.2 $\mu\mu\text{f}$ Plate-Filament - - - - - 0.2 $\mu\mu\text{f}$ Transconductance ($i_b = 25 \text{ ma.}$, $E_b = 1000 \text{ v.}$) - - - - - 2500 μmhos

Frequency for Maximum Ratings - - - - - 60 Mc.

MECHANICAL

Base - - - - - Small 4-pin, RMA type A4-5

Basing (See outline drawing) - - - - - RMA type 3G

Mounting - - - - - Vertical, base down or up

Cooling - - - - - Convection and Radiation

Recommended Heat Dissipating Connector:

Plate - - - - - HR-1

Maximum Overall Dimensions:

Length - - - - - 4.38 inches

Diameter - - - - - 1.44 inches

Net Weight - - - - - 1.5 ounces

Shipping Weight (Average) - - - - - 1.0 pound

**AUDIO FREQUENCY POWER AMPLIFIER
AND MODULATOR**

Class-B

MAXIMUM RATINGS, PER TUBE

D-C PLATE VOLTAGE - - - - - 2000 MAX. VOLTS

MAX-SIGNAL D-C PLATE CURRENT - - - - - 75 MAX. MA.

PLATE DISSIPATION - - - - - 25 MAX. WATTS

GRID DISSIPATION - - - - - 7 MAX. WATTS

TYPICAL OPERATION, CLASS AB₂

Sinusoidal wave, two tubes unless otherwise specified

D-C Plate Voltage - - - - - 1000 1250 Volts

D-C Grid Voltage (approx.)* - - - - - -20 -30 -42 Volts

Zero-Signal D-C Plate Current - - - - - 43 32 24 Ma.

Max-Signal D-C Plate Current - - - - - 127 127 130 Ma.

Effective Load, Plate-to-Plate - - - - - 12,000 17,000 21,400 Ohms

Peak A-F Grid Input Voltage (per tube) - - - - - 110 120 135 Volts

Max-Signal Peak Driving Power - - - - - 5.5 6.0 6.8 Watts

Max-Signal Nominal Driving Power (approx.) - - - - - 2.8 3.0 3.4 Watts

Max-Signal Plate Power Output - - - - - 60 85 112 Watts

*Adjust to give stated zero-signal plate current.

**PLATE MODULATED RADIO
FREQUENCY AMPLIFIER**

Class-C Telephony (Carrier conditions, per tube)

MAXIMUM RATINGS

D-C PLATE VOLTAGE - - - - - 1600 MAX. VOLTS

D-C PLATE CURRENT - - - - - 60 MAX. MA.

PLATE DISSIPATION - - - - - 17 MAX. WATTS

GRID DISSIPATION - - - - - 7 MAX. WATTS

TYPICAL OPERATION

D-C Plate Voltage - - - - - 1000 1250 1600 Volts

D-C Plate Current - - - - - 60 60 53 Ma.

D-C Grid Voltage - - - - - -120 -140 -170 Volts

D-C Grid Current - - - - - 14 13 11 Ma.

Peak R-F Grid Input Voltage - - - - - 235 255 280 Volts

Driving Power - - - - - 3.3 3.3 3.1 Watts

Grid Dissipation - - - - - 1.6 1.5 1.2 Watts

Plate Power Input - - - - - 60 75 85 Watts

Plate Dissipation - - - - - 13 15 17 Watts

Plate Power Output - - - - - 47 60 68 Watts

The above figures show actual measured tube performance and do not allow for variations in circuit losses.

**RADIO FREQUENCY POWER AMPLIFIER
AND OSCILLATOR**

Class-C Telephony or FM Telephony (Key-down conditions, per tube)

MAXIMUM RATINGS

D-C PLATE VOLTAGE - - - - - 2000 MAX. VOLTS

D-C PLATE CURRENT - - - - - 75 MAX. MA.

PLATE DISSIPATION - - - - - 25 MAX. WATTS

GRID DISSIPATION - - - - - 7 MAX. WATTS

TYPICAL OPERATION

D-C Plate Voltage - - - - - 1000 1500 2000 Volts

D-C Plate Current - - - - - 72 67 63 Ma.

D-C Grid Voltage - - - - - -70 -95 -130 Volts

D-C Grid Current - - - - - 9 13 18 Ma.

Peak R-F Grid Input Voltage - - - - - 170 195 245 Volts

Driving Power - - - - - 1.3 2.2 4.0 Watts

Grid Dissipation - - - - - .9 1.3 2.1 Watts

Plate Power Input - - - - - 72 100 125 Watts

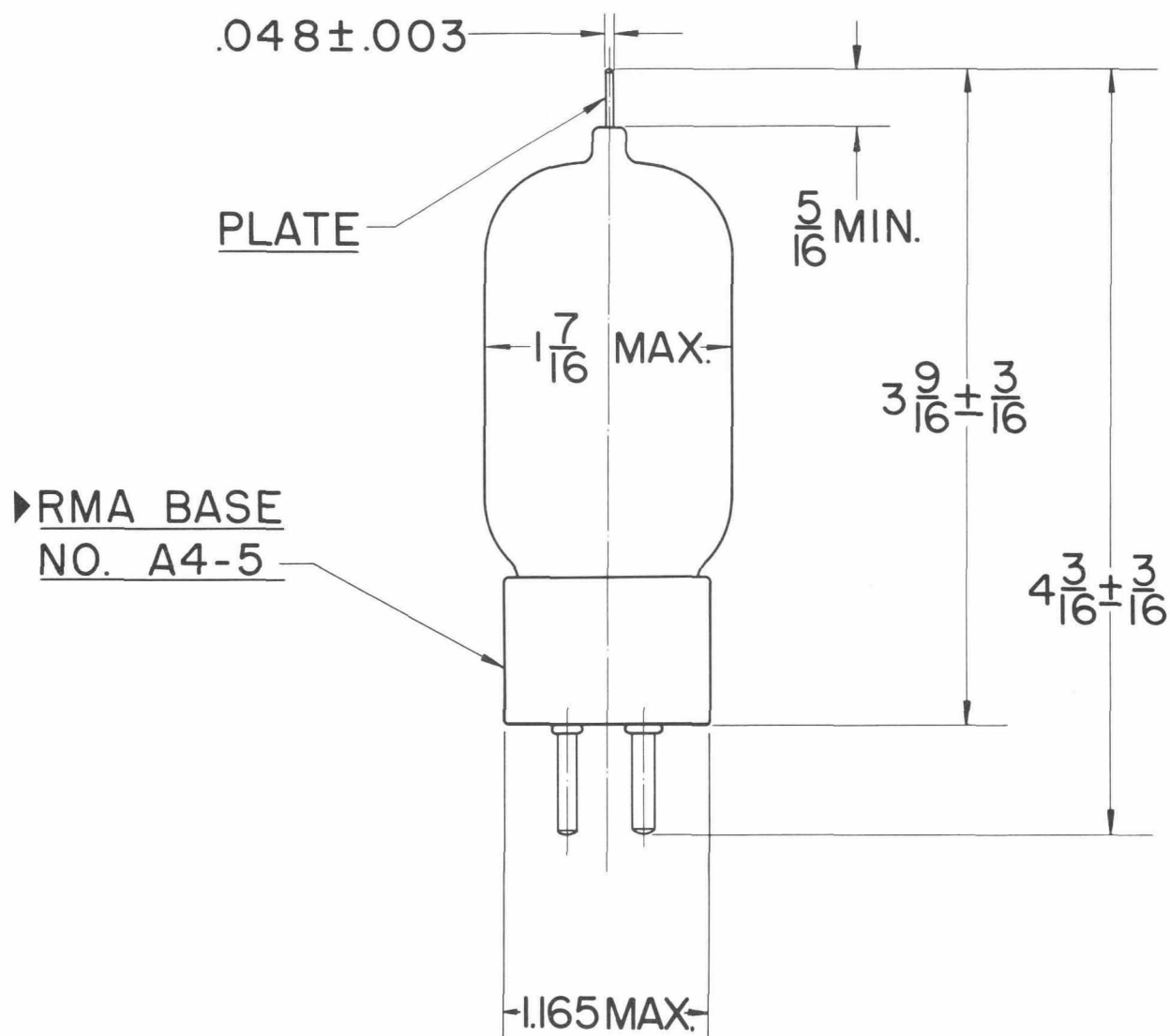
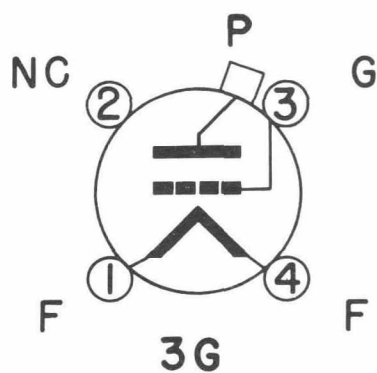
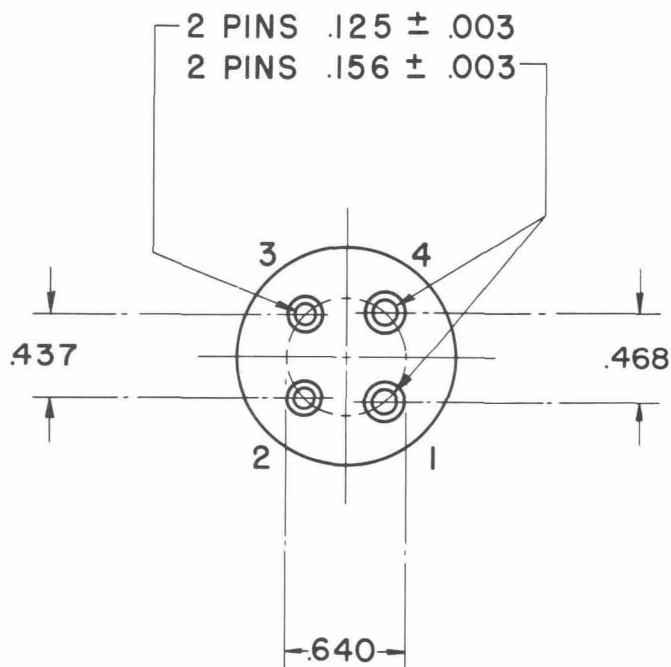
Plate Dissipation - - - - - 25 25 25 Watts

Plate Power Output - - - - - 47 75 100 Watts

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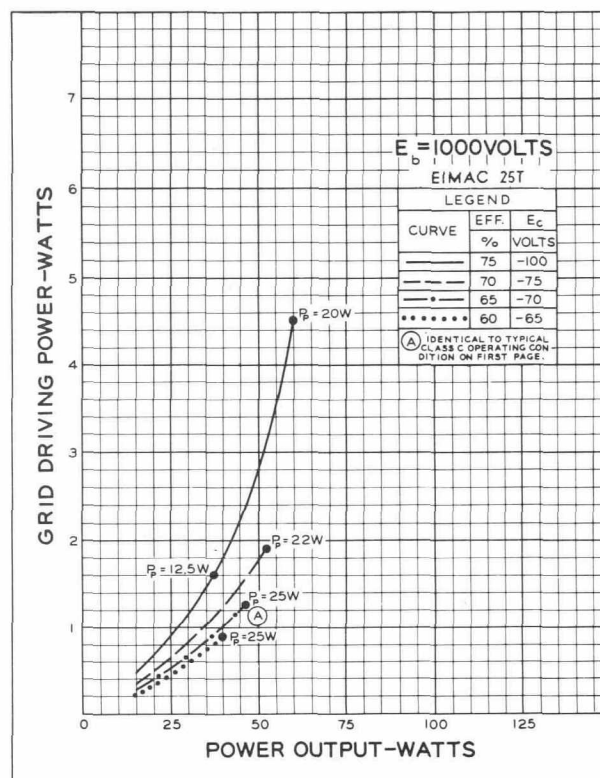
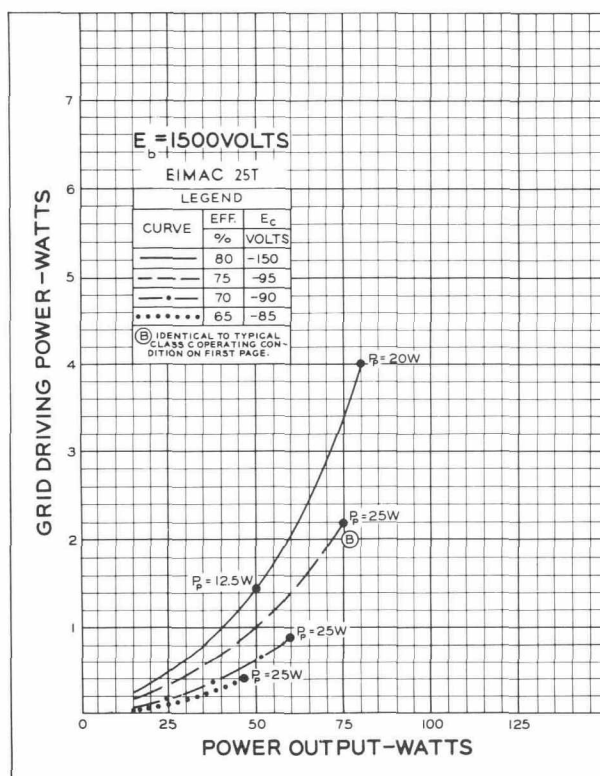
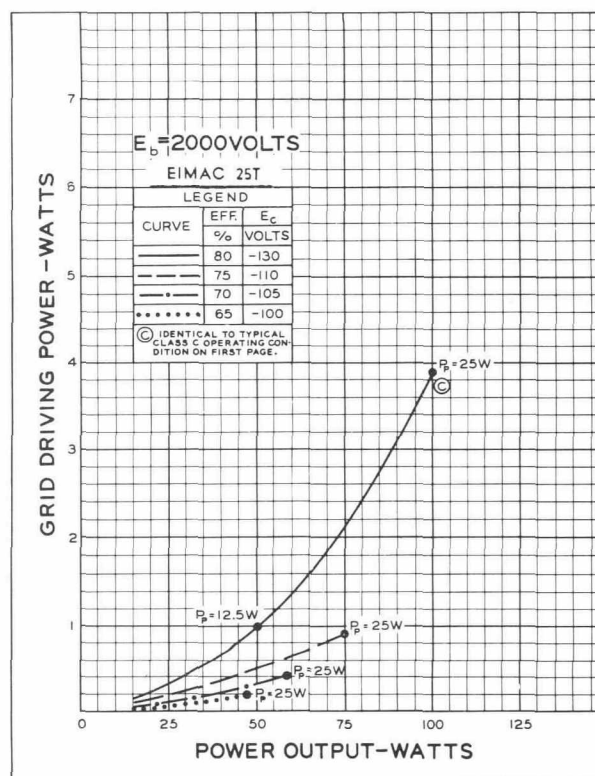




DRIVING POWER vs. POWER OUTPUT

The three charts on this page show the relationship of plate efficiency, power output and grid driving power at plate voltages of 1000, 1500 and 2000 volts. These charts show combined grid and bias losses only. The driving power and power output figures do not include circuit losses. The plate dissipation in watts is indicated by P_p .

Points A, B, and C are identical to the typical Class C operating conditions shown on the first page under 1000, 1500, and 2000 volts respectively.





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