

# EITEL-McCULLOUGH, INC.

SAN BRUNO, CALIFORNIA

## 250TL

LOW-MU TRIODE

MODULATOR  
OSCILLATOR  
AMPLIFIER

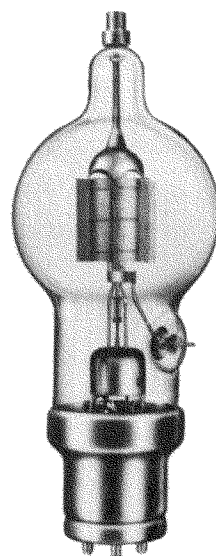
### GENERAL CHARACTERISTICS

#### ELECTRICAL

|                                                             |                       |
|-------------------------------------------------------------|-----------------------|
| Filament: Thoriated tungsten                                |                       |
| Voltage - - - - -                                           | 5.0 volts             |
| Current - - - - -                                           | 10.5 amperes          |
| Amplification Factor (Average) - - - - -                    | 14                    |
| Direct Interelectrode Capacitances (Average)                |                       |
| Grid-Plate - - - - -                                        | 3.1 $\mu\mu\text{f}$  |
| Grid-Filament - - - - -                                     | 3.7 $\mu\mu\text{f}$  |
| Plate-Filament - - - - -                                    | 0.7 $\mu\mu\text{f}$  |
| Transconductance ( $I_b=350$ ma., $E_b=3000$ , $e_c=-130$ ) | 2650 $\mu\text{mhos}$ |
| Frequency for Maximum Ratings - - - - -                     | 40 mc                 |

#### MECHANICAL

|                                     |                  |
|-------------------------------------|------------------|
| Base - - - - -                      | 4 pin, No. 5001B |
| Basing - - - - -                    | RMA type 2N      |
| Maximum Overall Dimensions:         |                  |
| Length - - - - -                    | 10.125 inches    |
| Diameter - - - - -                  | 3.813 inches     |
| Net weight - - - - -                | 12 ounces        |
| Shipping weight (Average) - - - - - | 2.25 pounds      |



### AUDIO FREQUENCY POWER AMPLIFIER AND MODULATOR

#### Class B

|                                              | TYPICAL OPERATION—2 TUBES |      |       | MAX. RATING |
|----------------------------------------------|---------------------------|------|-------|-------------|
| D-C Plate Voltage - - - - -                  | 1500                      | 2000 | 3000  | 3000 volts  |
| Max.-Signal D-C Plate Current, per tube* - - | •                         | •    | •     | 350 ma.     |
| Plate Dissipation, per tube* - - - - -       | •                         | •    | •     | 250 watts   |
| D-C Grid Voltage (approx.) - - - - -         | -40                       | -80  | -175  | volts       |
| Peak A-F Grid Input Voltage - - - - -        | 770                       | 800  | 840   | volts       |
| Zero-Signal D-C Plate Current - - - - -      | 200                       | 150  | 100   | ma.         |
| Max.-Signal D-C Plate Current - - - - -      | 700                       | 650  | 500   | ma.         |
| Max.-Signal Driving Power (approx.) - - -    | 32                        | 28   | 17    | watts       |
| Effective Load, Plate-to-Plate - - - - -     | 3700                      | 6150 | 13000 | ohms        |
| Max.-Signal Plate Power Output - - - - -     | 580                       | 800  | 1000  | watts       |

\*Averaged over any sinusoidal audio frequency cycle.

### RADIO FREQUENCY POWER AMPLIFIER AND OSCILLATOR

#### Class-C \*Telegraphy

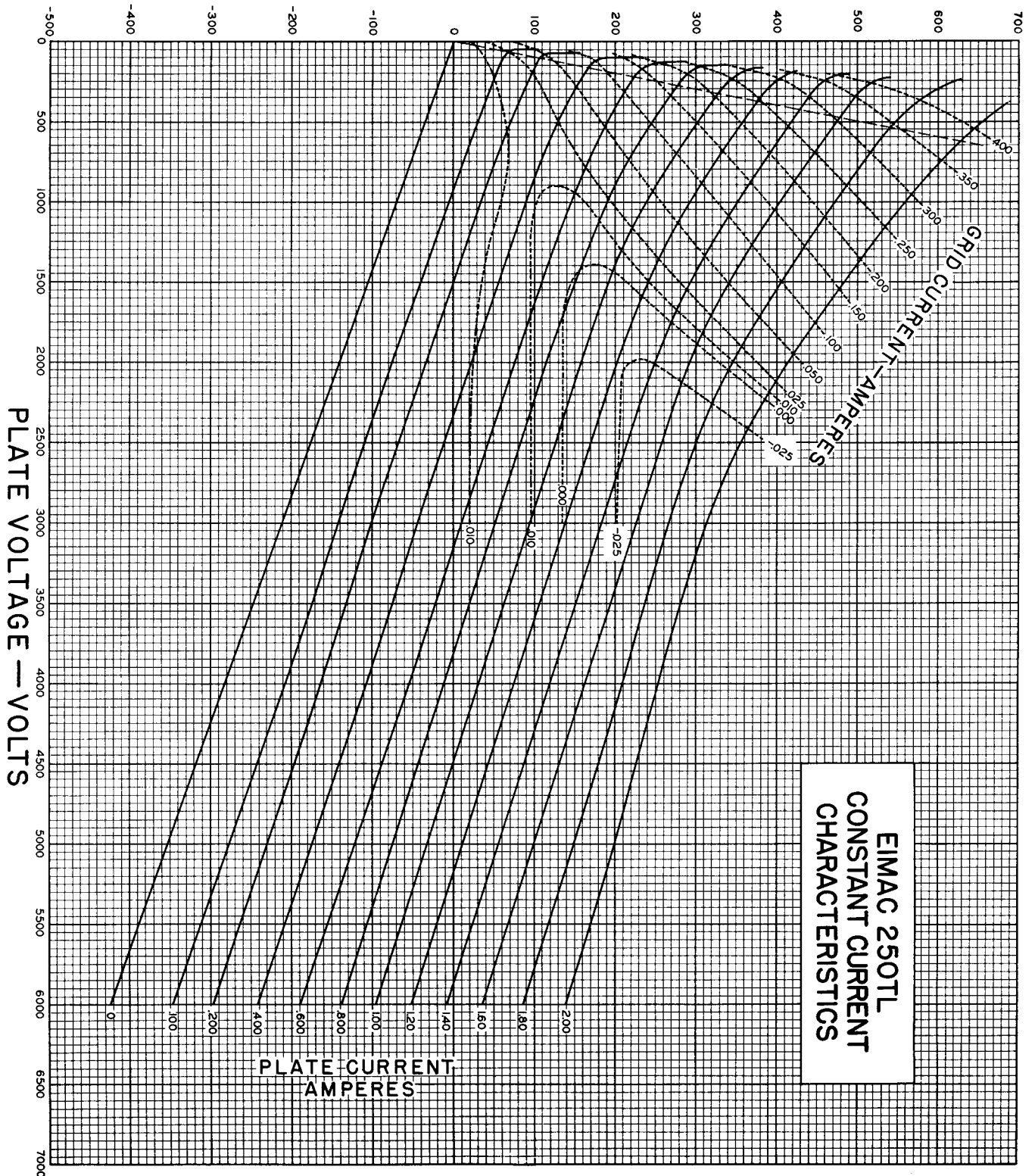
(Key down conditions without modulation)

|                                              | TYPICAL OPERATION—1 TUBE |      |      | MAX. RATING |
|----------------------------------------------|--------------------------|------|------|-------------|
| D-C Plate Voltage - - - - -                  | 2000                     | 3000 | 4000 | 4000 volts  |
| D-C Plate Current - - - - -                  | 350                      | 335  | 310  | 350 ma.     |
| D-C Grid Current - - - - -                   | 45                       | 45   | 40   | 50 ma.      |
| D-C Grid Voltage - - - - -                   | -200                     | -350 | -500 | volts       |
| Plate Power Output - - - - -                 | 455                      | 750  | 1000 | watts       |
| Plate Input - - - - -                        | 700                      | 1000 | 1250 | watts       |
| Plate Dissipation - - - - -                  | 245                      | 250  | 250  | 250 watts   |
| Peak R. F. Grid Input Voltage, (approx.) - - | 575                      | 720  | 900  | volts       |
| Driving Power, (approx.) - - - - -           | 22                       | 29   | 33   | watts       |

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

(Effective 7-1-44) Copyright, 1946 by Eitel-McCullough, Inc.

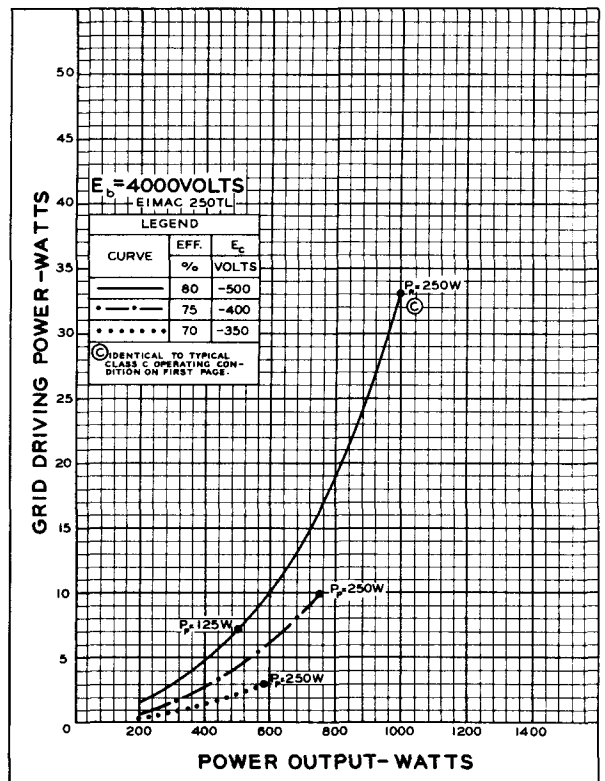
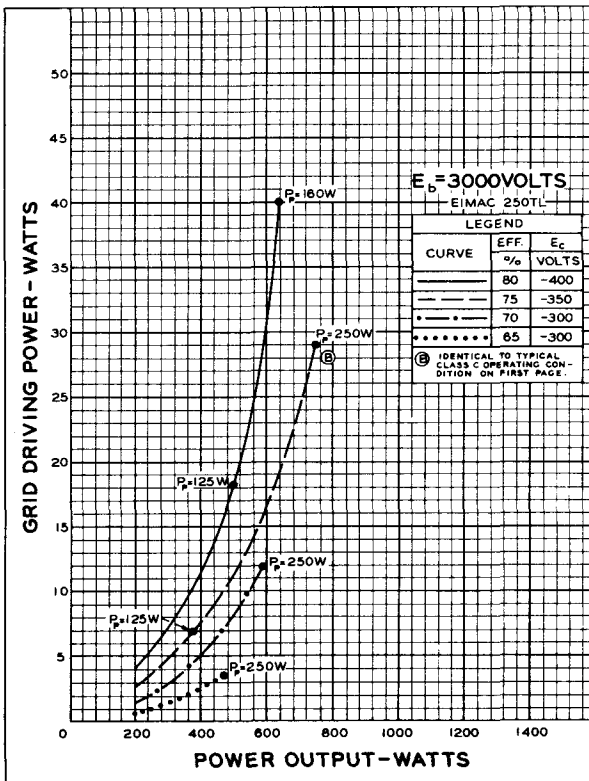
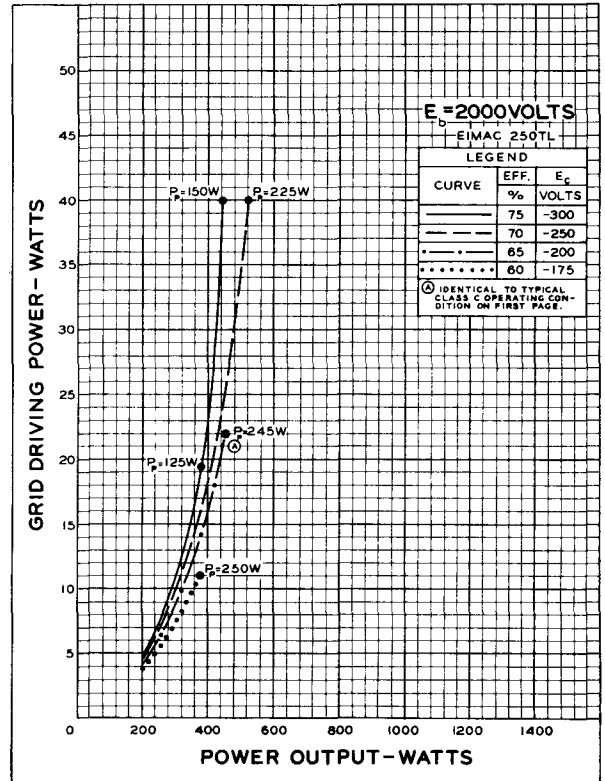
**GRID VOLTAGE—VOLTS**

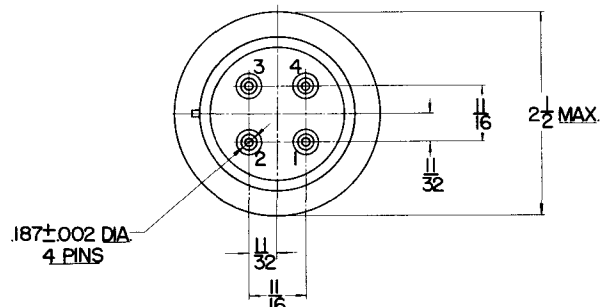
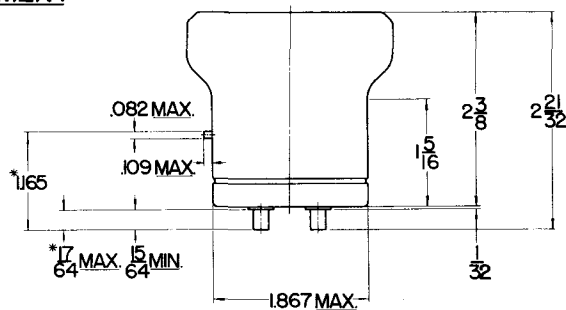
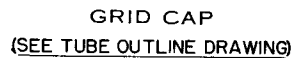
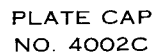


## DRIVING POWER vs. POWER OUTPUT

The three charts on this page show the relationship of plate efficiency, power output and grid driving power at plate voltages of 2000, 3000 and 4000 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 2000, 3000, and 4000 volts respectively.





\*ON FINISHED TUBE ADD .060 FOR SOLDER.