

TENTATIVE DATA

EITEL-McCULLOUGH, Inc.

SAN BRUNO, CALIFORNIA

592/3-200A3

MEDIUM-MU TRIODE

MODULATOR
OSCILLATOR
AMPLIFIER

The Eimac 592/3-200A3 is a medium-mu power triode having a maximum plate dissipation rating of 200 watts, and it is intended for use as a power amplifier, oscillator, or modulator. It can be used at its maximum ratings at frequencies as high as 150 Mc.

Cooling of the 592/3-200A3 is accomplished by radiation from the plate, which operates at a visible red color at maximum plate dissipation, and by means of forced-air circulation around the envelope.

GENERAL CHARACTERISTICS

ELECTRICAL

Filament: Thoriated tungsten	
Voltage	10.0 volts
Current	5.0 amperes
Amplification Factor (Average)	25
Direct Interelectrode Capacitances (Average)	
Grid-Plate	3.3 $\mu\mu\text{f}$
Grid-Filament	3.6 $\mu\mu\text{f}$
Plate-Filament	0.29 $\mu\mu\text{f}$
Transconductance ($i_b=200$ ma., $E_b=3000$ v.)	3600 μmhos
Frequency for Maximum Ratings	150 Mc.

MECHANICAL

Mounting	Vertical
Maximum Overall Dimensions:	
Length	6.0 inches
Diameter	3-13/32 inches
Net Weight (approx.)	6 ounces
Shipping Weight (approx.)	1 1/2 pounds

COOLING

An air-flow of 15 cubic feet per minute should be directed at the bulb from a 2-inch diameter nozzle located about 3 inches from the center line of the tube. The center line of the nozzle should be located about 2 inches down from the top of the plate terminal. The incoming air temperature should not exceed 50° C. Other methods of cooling may be used provided maximum bulb and seal temperatures are not exceeded. An 8-inch fan located about 10 inches from the tube is one alternate method.

Maximum bulb temperature	225° C	Maximum seal temperature	175° C
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AUDIO FREQUENCY POWER AMPLIFIER
AND MODULATOR—CLASS B

MAXIMUM RATINGS, PER TUBE

D-C PLATE VOLTAGE	3500 MAX. VOLTS
MAX-SIGNAL D-C PLATE CURRENT	250 MAX. MA.
PLATE DISSIPATION	200 MAX. WATTS
GRID DISSIPATION	25 MAX. WATTS

PLATE MODULATED RADIO FREQUENCY
AMPLIFIER

Class-C Telephony (Carrier conditions, per tube)

MAXIMUM RATINGS

D-C PLATE VOLTAGE	2600 MAX. VOLTS
D-C PLATE CURRENT	200 MAX. MA.
PLATE DISSIPATION	130 MAX. WATTS
GRID DISSIPATION	25 MAX. WATTS

RADIO FREQUENCY POWER AMPLIFIER
AND OSCILLATORClass-C Telegraphy or FM Telephony
(Key-down conditions, per tube)

MAXIMUM RATINGS

D-C PLATE VOLTAGE	3500 MAX. VOLTS
D-C PLATE CURRENT	250 MAX. MA.
PLATE DISSIPATION	200 MAX. WATTS
GRID DISSIPATION	25 MAX. WATTS

TYPICAL OPERATION

Sinusoidal wave, two tubes unless otherwise specified.

D-C Plate Voltage	2000	2500	3000	Volts
D-C Grid Voltage (approx.)*	—50	—70	—90	Volts
Zero-Signal D-C Plate Current	120	100	80	Ma.
Max-Signal D-C Plate Current	500	450	400	Ma.
Effective Load, Plate-to-Plate	8500	12,600	18,000	Ohms
Peak A-F Grid Input Voltage (per tube)	260	270	270	Volts
Max-Signal Peak Driving Power	50	52	40	Watts
Max-Signal Nominal Driving Power (approx.)	25	26	20	Watts
Max-Signal Plate Power Output	600	725	820	Watts

*Adjust to give stated zero-signal plate current.

TYPICAL OPERATION

D-C Plate Voltage	2000	2500	Volts
D-C Plate Current	200	200	Ma.
D-C Grid Voltage	—250	—300	Volts
D-C Grid Current	35	35	Ma.
Peak R-F Grid Input Voltage	480	535	Volts
Driving Power	17	19	Watts
Grid Dissipation	8	9	Watts
Plate Power Input	400	500	Watts
Plate Dissipation	115	125	Watts
Plate Power Output	285	375	Watts

The output figures do not allow for circuit losses.

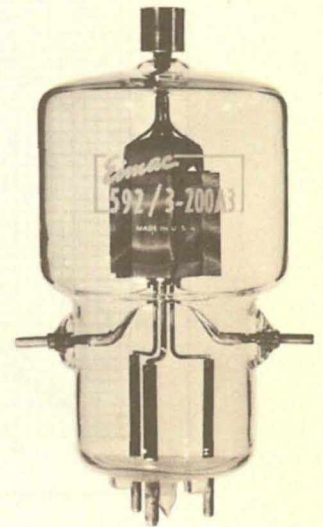
TYPICAL OPERATION

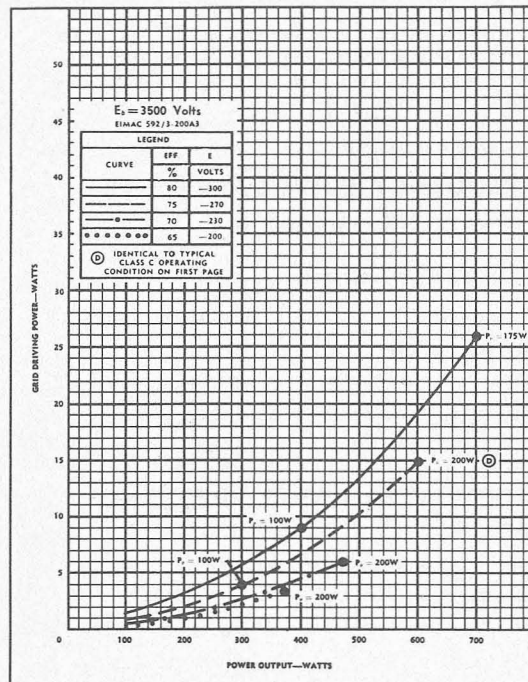
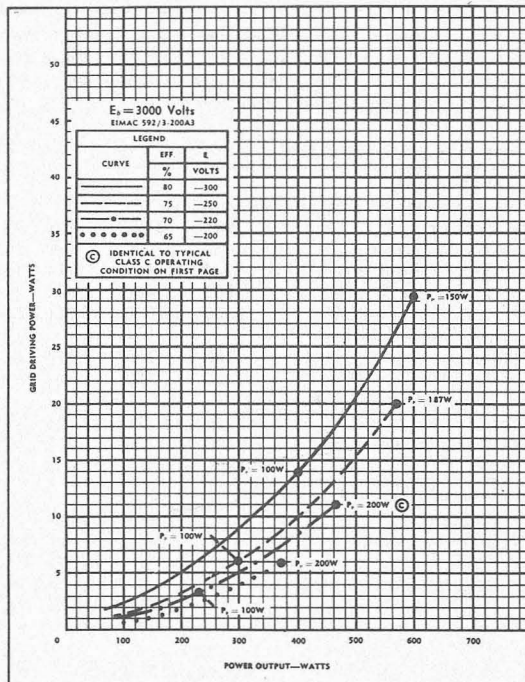
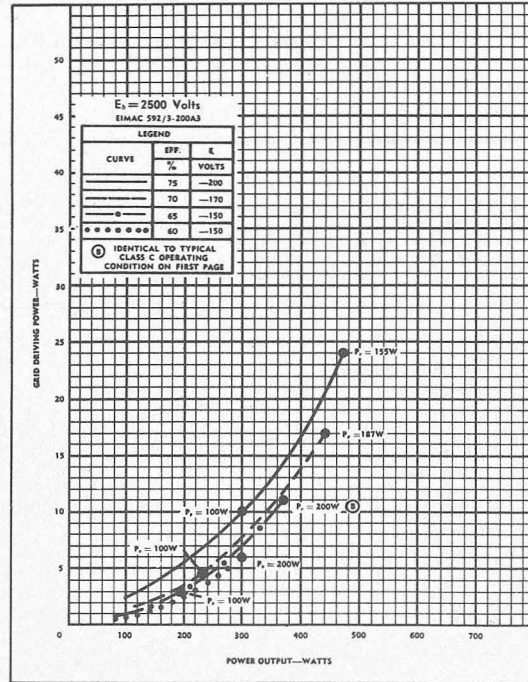
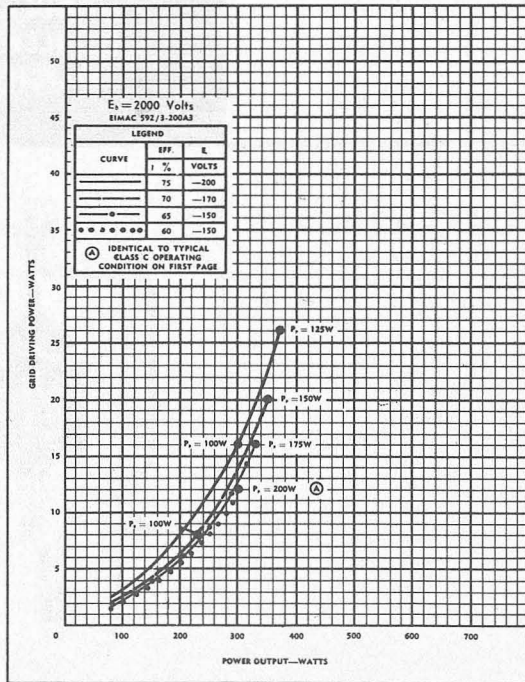
D-C Plate Voltage	2000	2500	3000	3500	Volts
D-C Plate Current	250	228	222	228	Ma.
D-C Grid Voltage	—150	—180	—220	—270	Volts
D-C Grid Current	32	28	25	30	Ma.
Peak R-F Grid Input Voltage	380	400	440	505	Volts
Driving Power	12	11	11	15	Watts
Grid Dissipation	7	6	5.5	7	Watts
Plate Power Input	500	570	666	800	Watts
Plate Dissipation	200	200	200	200	Watts
Plate Power Output	300	370	466	600	Watts

The output figures do not allow for circuit losses.

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TENTATIVE DATA

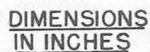




DRIVING POWER vs. POWER OUTPUT

The four charts on this page show the relationship of plate efficiency, power output and grid driving power at plate voltages of 2000, 2500, 3000 and 3500 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_d .

Points A, B, C, and D are identical to the typical Class C operating conditions shown on the first page under 2000, 2500, 3000 and 3500 volts respectively.



BOTTOM VIEW

NOTE: CENTER FILAMENT TERMINAL, FILAMENT TERMINALS, AND TUBULATION ARE SO ALIGNED THAT THEY CAN BE FREELY INSERTED INTO A GAGE $\frac{1}{4}$ " THICK WITH HOLE DIA. .186", .155", & .350" RESPECTIVELY, LOCATED ON THE TRUE CENTERS BY THE GIVEN DIMENSIONS.

