TENTATIVE DATA

EITEL-McCULLOUGH, INC.

SAN BRUNO, CALIFORNIA

4-1000A

SUPERSEDES TYPE 4-750A

POWER TETRODE

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MODULATOR

OSCILLATOR

AMPLIFIER

The Eimac 4-1000A is a power tetrode having a maximum plate dissipation of 1000 watts. Cooling of the 4-1000A is accomplished by radiation from the plate and by forced-air circulation around the glass envelope and through the compact low-inductance base structure. At maximum dissipation the plate operates at a red-orange color.

The 4-1000A permits a single-stage gain of more than 230 times up to approximately 30 Mc., or from 14 watts driving power to over 3 KW power output per tube. This output can be obtained at frequencies well into the VHF range. At 100 Mc. a pair of 4-1000A's will deliver a useful power output of more than 4000 watts.

GENERAL CHARACTERISTICS

ELECTRICAL

Filament: Thoriated tungsten		
Voltage	7.5	volts
Current	21	amperes
Grid-Screen Amplification Factor (Average)	7.2	
Direct Interelectrode Capacitances (Average)		
Grid-Plate (without shielding, base grounded)	0.24	$\mu\mu$fd
Input	27.2	$\mu\mu$fd
Output	7.6	$\mu\mu$fd
Transconductance (i_b=300 ma., E_b=2500 v., E_{c2}=500 v.)	10,000	μmhos

MECHANICAL

Base	5-pin metal shell, (see dwg.)
Basing	RMA type 5BK
Cooling	Radiation and forced air[1]
Mounting position	Vertical, base down or up
Maximum Overall Dimensions	
Length	9.25 inches
Diameter	5 inches
Net Weight	1.5 pounds
Shipping Weight (Average)	12 pounds

RADIO FREQUENCY POWER AMPLIFIER AND OSCILLATOR

Class-C Telegraphy (Key-down conditions, per tube)

MAXIMUM RATINGS

D-C Plate Voltage	6000 Max. Volts
D-C Screen Voltage	1000 Max. Volts
D-C Grid Voltage	—500 Max. Volts
D-C Plate Current	700 Max. ma
Plate Dissipation	1000 Max. Watts
Screen Dissipation	75 Max. Watts
Grid Dissipation	25 Max. Watts

TYPICAL OPERATION (Frequencies below 40 Mc.)

D-C Plate Voltage	3000	4000	5000	6000	Volts
D-C Screen Voltage	500	500	500	500	Volts
D-C Grid Voltage	—150	—150	—200	—200	Volts
D-C Plate Current	693	700	665	681	ma
D-C Screen Current	146	137	125	141	ma
D-C Grid Current	38	39	37	41	ma
Screen Dissipation	73	69	63	71	Watts
Grid Dissipation	5.4	5.5	5.3	6.1	Watts
Peak R-F Grid Input Voltage (approx.)	292	292	342	348	Volts
Driving Power (approx.)[2]	11.1	11.4	12.7	14.3	Watts
Plate Power Input	2079	2800	3325	4086	Watts
Plate Dissipation	667	700	715	746	Watts
Plate Power Output	1412	2100	2610	3340	Watts

RADIO FREQUENCY POWER AMPLIFIER

FM Telephony or Class C Telegraphy

MAXIMUM RATINGS (Per tube at 110 Mc.)

D-C Plate Voltage	5000 Max. Volts
D-C Screen Voltage	1000 Max. Volts
D-C Grid Voltage	—500 Max. Volts
D-C Plate Current	700 Max. ma
Plate Dissipation	1000 Max. Watts
Screen Dissipation	75 Max. Watts
Grid Dissipation	25 Max. Watts

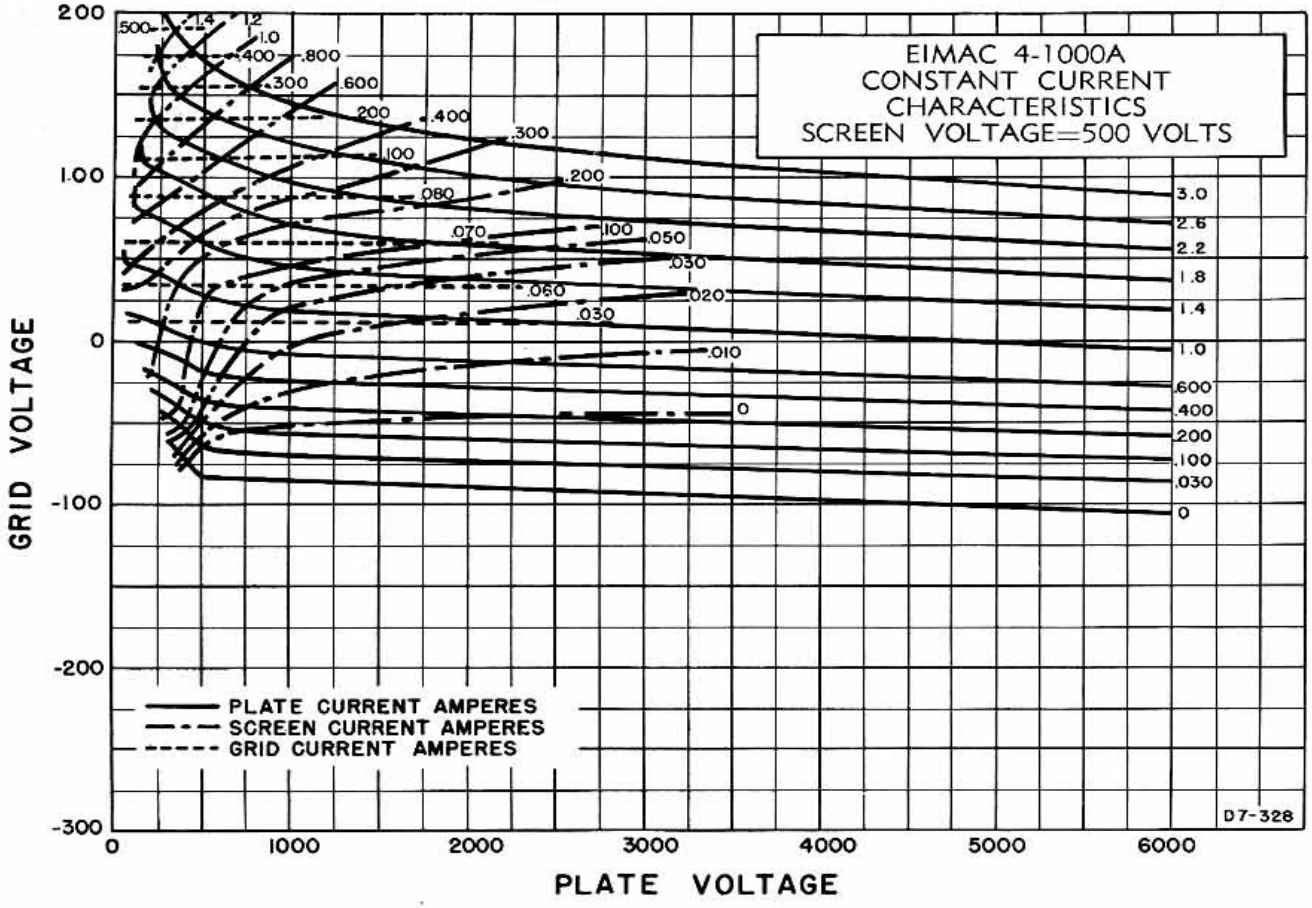
TYPICAL OPERATION (Two Tubes Push-Pull at 110 Mc.)

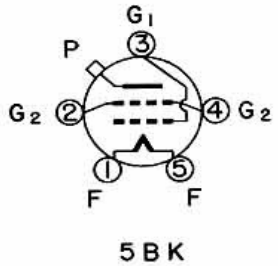
D-C Plate Voltage	4000	5000	Volts
D-C Screen Voltage	350	330	Volts
D-C Grid Voltage	—350	—487	Volts
D-C Plate Current	1.1	1.22	Amp
D-C Screen Current	290	250	ma.
D-C Grid Current	70	65	ma.
Screen Dissipation	100	83	Watts
Driving Power (approx.)[2]	200	250	Watts
Plate Power Input	4400	6100	Watts
Plate Dissipation (per tube)	565	670	Watts
Useful Power Output	3050	4400	Watts

[1] Adequate cooling must be provided for the seals and envelope of the 4-1000A. Forced air circulation in the amount of 20 cubic feet per minute through the base of the tube is required. This air should be applied simultaneously with filament power. The temperature at the top of the plate terminal and on the pins at the base of the tube should not exceed 150 degrees centigrade in continuous-service applications.

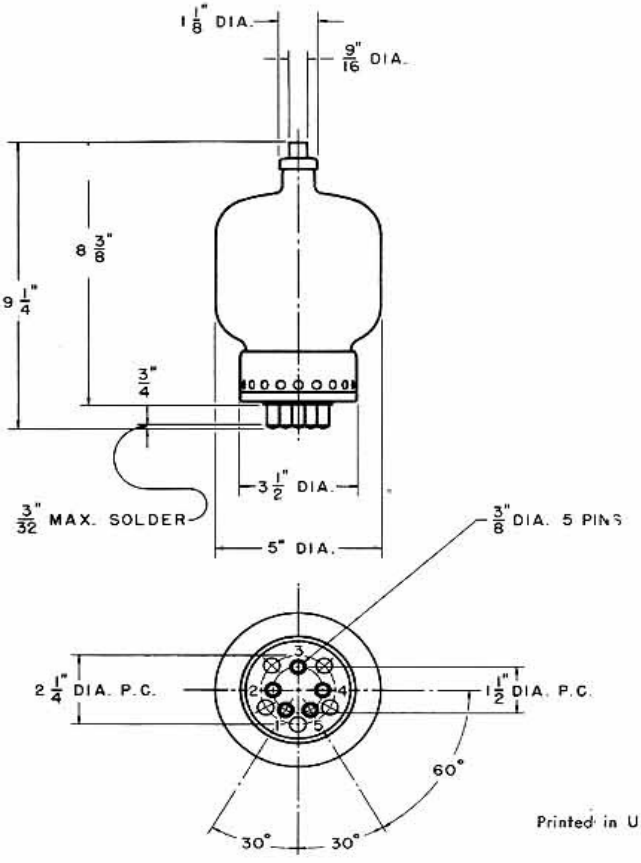
[2] Driving power increases for frequencies above approximately 30 Mc.

TENTATIVE DATA





5BK



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