6L6, 6L6-G

BEAM POWER TUBE

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

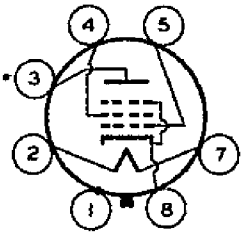
Voltage	6.3	ac or dc volts
Current	0.9	amp

Direct Interelectrode Capacitances (Approx.):

	6L6°	6L6-G°°	
Grid No.1 to plate	0.4	0.9	μμf
Grid No.1 to cathode & grid No.3, grid No.2, and heater	10	11.5	μμf
Plate to cathode & grid No.3, grid No.2, and heater	12	9.5	μμf

Mechanical:	6L6	6L6-G
Mounting Position	Any	Any
Maximum Overall Length	4-5/16"	5-5/16"
Maximum Seated Length	3-3/4"	4-3/4"
Maximum Diameter	1-5/8"	2-1/16"
Bulb	Metal Shell MT-10	ST-16
Base	Small-Wafer Octal 7-Pin (JETEC No.B7-22)	Medium-Shell Octal 7-Pin (JETEC No.B7-12)
Basing Designation	7AC	G-7AC

Pin 1 {6L6, Shell / 6L6-G, No Conn.
Pin 2 - Heater
Pin 3 - Plate



Pin 4 - Grid No.2
Pin 5 - Grid No.1
Pin 7 - Heater
Pin 8 - Cathode, Grid No.3

AF POWER AMPLIFIER - Class A_1†

Triode Connection - Grid No.2 Connected to Plate

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	275 max.	volts
PLATE DISSIPATION	19 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	180 max.	volts
Heater positive with respect to cathode	180 max.	volts

Typical Operation and Characteristics:

	Fixed Bias	*Cathode Bias*	
Plate Voltage	250	250	volts
Grid-No.1 (Control-Grid) Voltage	-20	-	volts
Cathode-Bias Resistor	-	490	ohms

°, °°, †: See next page.

→ Indicates a change.

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BEAM POWER TUBE

	Fixed Bias	*Cathode Bias*	
Peak AF Grid-No.1 Voltage	20	20	volts
Zero-Signal Plate Current	40	40	ma
Max.-Signal Plate Current	44	42	ma
Amplification Factor	8	–	
Plate Resistance (Approx.)	1700	–	ohms
Transconductance	4700	–	μmhos
Load Resistance	5000	6000	ohms
Total Harmonic Distortion	5	6	%
Max.-Signal Power Output	1.4	1.3	watts

Maximum Circuit Values (For maximum rated conditions):

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

AF POWER AMPLIFIER - Class A_1 †

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	360 max.	volts
GRID-No.2 (SCREEN) VOLTAGE	270 max.	volts
PLATE DISSIPATION	19 max.	watts
GRID-No.2 INPUT	2.5 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	180 max.	volts
Heater positive with respect to cathode	180 max.	volts

Typical Operation and Characteristics:

Fixed-Bias Operation

Plate Voltage	200	250	300	350	volts
Grid-No.2 Voltage	200	250	200	250	volts
Grid-No.1 Voltage	-11.5	-14	-12.5	-18	volts
Peak AF Grid-No.1 Voltage	11.5	14	12.5	18	volts
Zero-Signal Plate Current	52	72	48	54	ma
Max.-Signal Plate Current	57	79	55	66	ma
Zero-Signal Grid-No.2 Current	3.5	5.0	2.5	2.5	ma
Max.-Signal Grid-No.2 Current	5.7	7.3	4.7	7.0	ma
Plate Resistance (Approx.)	35000	22500	35000	33000	ohms
Transconductance	5300	6000	5300	5200	μmhos
Load Resistance	3000	2500	4500	4200	ohms
Total Harmonic Distortion	9	10	11	15	%
Max.-Signal Power Output	4	6.5	6.5	10.8	watts

Cathode-Bias Operation

Plate Voltage	200	250	300	volts
Grid-No.2 Voltage	200	250	200	volts

° With shell connected to cathode.
°° With no external shield.

†: See next page.

→Indicates a change.

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BEAM POWER TUBE

Cathode-Bias Resistor	186	167	218	ohms
Peak AF Grid-No.1 Voltage	11.5	14	12.7	volts
Zero-Signal Plate Current	55	75	51	ma
Max.-Signal Plate Current	56	78	54.5	ma
Zero-Signal Grid-No.2 Current	4.2	5.4	3.0	ma
Max.-Signal Grid-No.2 Current	5.6	7.2	4.6	ma
Load Resistance	3000	2500	4500	ohms
Total Harmonic Distortion	9	10	11	%
Max.-Signal Power Output	4	6.5	6.5	watts

Maximum Circuit Values (For maximum rated conditions):

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

PUSH-PULL AF POWER AMPLIFIER - Class A_1 †

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	360 max.	volts
GRID-No.2 (SCREEN) VOLTAGE	270 max.	volts
PLATE DISSIPATION	19 max.	watts
GRID-No.2 INPUT	2.5 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	180 max.	volts
Heater positive with respect to cathode	180 max.	volts

Typical Operation and Characteristics:

Unless otherwise specified, values are for 2 tubes

	Fixed Bias		*Cathode Bias*		
Plate Voltage	250	270	250	270	volts
Grid-No.2 Voltage	250	270	250	270	volts
Grid-No.1 Voltage	-16	-17.5	–	–	volts
Cathode-Bias Resistor	–	–	124	124	ohms
Peak AF Grid-No.1-to-Grid-No.1 Voltage	32	35	35.6	28.2	volts
Zero-Signal Plate Current	120	134	120	134	ma
Max.-Signal Plate Current	140	155	130	145	ma
Zero-Signal Grid-No.2 Current	10	11	10	11	ma
Max.-Signal Grid-No.2 Current	16	17	15	17	ma
Plate Resistance (Per tube) (Approx.)	24500	23500	–	–	ohms
Transconductance (Per tube)	5500	5700	–	–	μmhos
Effective Load Resistance (Plate to plate)	5000	5000	5000	5000	ohms
Total Harmonic Distortion	2	2	2	2	%
Max.-Signal Power Output	14.5	17.5	13.8	18.5	watts

†: See next page

6L6, 6L6-G

BEAM POWER TUBE

→ **Maximum Circuit Values (For maximum rated conditions):**

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

PUSH-PULL AF POWER AMPLIFIER - Class AB_1†

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	360 max.	volts
GRID-No.2 (SCREEN) VOLTAGE	270 max.	volts
PLATE DISSIPATION	19 max.	watts
GRID-No.2 INPUT	2.5 max.	watts
→ PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	180 max.	volts
Heater positive with respect to cathode	180 max.	volts

→ **Typical Operation:**

Values are for 2 tubes

	Fixed Bias		*Cathode Bias*	
Plate Voltage	360	360	360	volts
Grid-No.2 Voltage▲	270	270	270	volts
Grid-No.1 Voltage	-22.5	-22.5	–	volts
Cathode-Bias Resistor	–	–	248	ohms
Peak AF Grid-No.1-to-Grid-No.1 Voltage	45	45	40.6	volts
Zero-Signal Plate Current	88	88	88	ma
Max.-Signal Plate Current	132	140	100	ma
Zero-Signal Grid-No.2 Current	5	5	5	ma
Max.-Signal Grid-No.2 Current	15	11	17	ma
Effective Load Resistance (Plate to plate)	6600	3800	9000	ohms
Total Harmonic Distortion	2	2	4	%
Max.-Signal Power Output	26.5	18	24.5	watts

→ **Maximum Circuit Values (For maximum rated conditions):**

Grid-No.1-Circuit Resistance:▲		
For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

PUSH-PULL AF POWER AMPLIFIER - Class AB_2♦

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	360 max.	volts
GRID-No.2 (SCREEN) VOLTAGE	270 max.	volts
PLATE DISSIPATION	19 max.	watts
GRID-No.2 INPUT	2.5 max.	watts

▲ †, ♦: see next page.

→ Indicates a change.

6L6, 6L6-G

BEAM POWER TUBE

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode. .	180 max.	volts
Heater positive with respect to cathode. .	180 max.	volts

Typical Operation:

Values are for 2 tubes

		Fixed Bias	
Plate Voltage.	360	360	volts
Grid-No.2 Voltage.	225	270	volts
Grid-No.1 Voltage.	-18	-22.5	volts
Peak AF Grid-No.1-to Grid-No.1 Voltage	52	72	volts
Zero-Signal Plate Current.	78	88	ma
Max.-Signal Plate Current.	142	205	ma
Zero-Signal Grid-No.2 Current.	3.5	5	ma
Max.-Signal Grid-No.2 Current.	11	16	ma
Effective Load Resistance (Plate to plate).	6000	3800	ohms
Peak Grid-Input Power.	140	270	mw
Total Harmonic Distortion.	2	2	%
Max.-Signal Power Output	31	47	watts

Maximum Circuit Values (For maximum rated conditions):

Grid-No.1-Circuit Resistance‡:

For fixed-bias operation	0.1 max. megohm
For cathode-bias operation	Not recommended

† Subscript 1 indicates that grid-No.1 current does not flow during any part of input cycle.

♦ Subscript 2 indicates that grid-No.1 current flows during some part of input cycle.

‡ Driver stage should be capable of supplying the specified driving power at low distortion to the No.1 grids of the AB_2 stage. To minimize distortion, the effective resistance per grid-No.1 circuit of the AB_2 stage should be held at a low value. For this purpose, the use of transformer coupling is recommended.

▲ The type of input coupling used should not introduce too much resistance in the grid-No.1 circuit. Transformer- or impedance-coupling devices are recommended.

←Indicates a change.

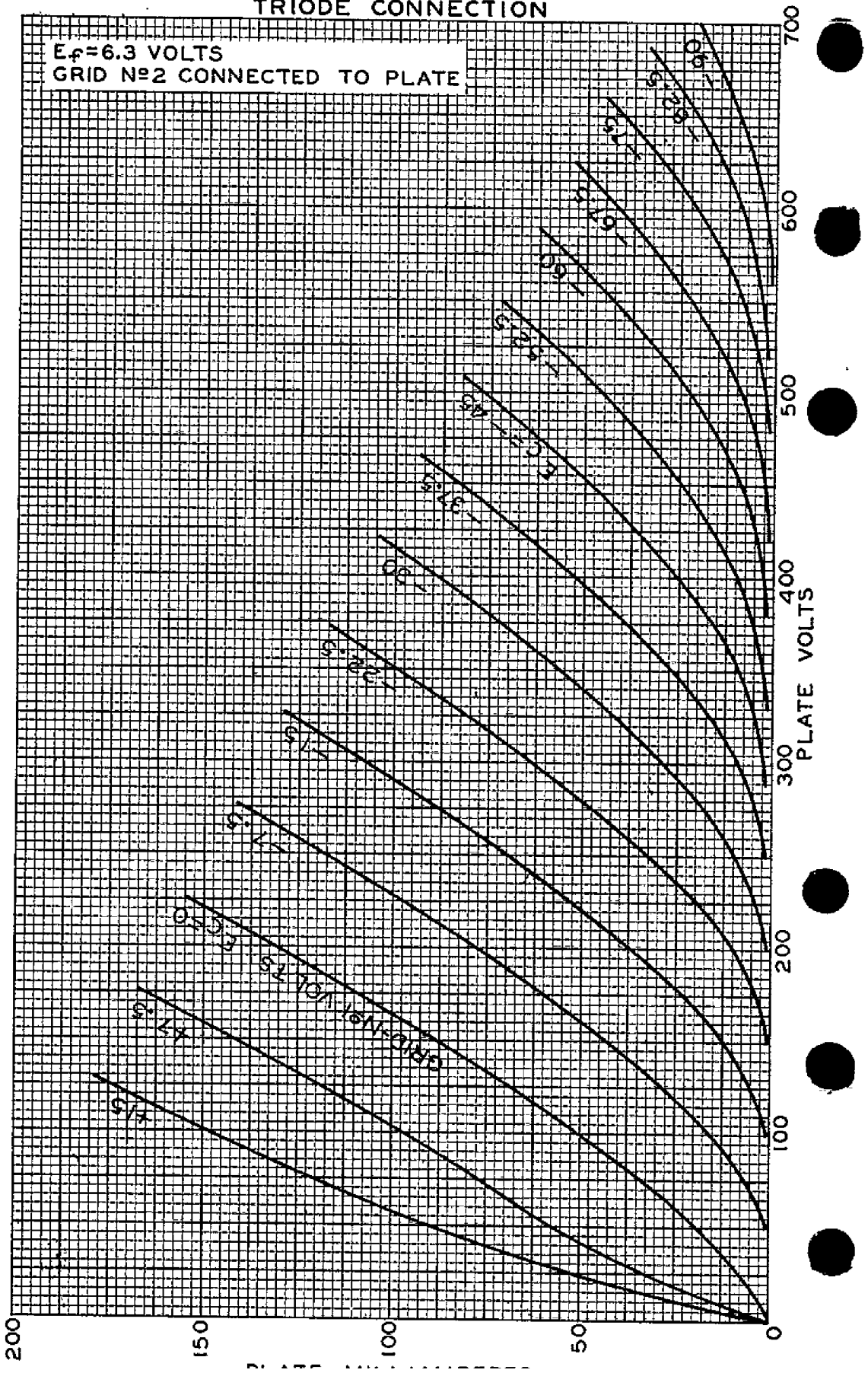
6L6

RCA

6L6

AVERAGE PLATE CHARACTERISTICS

TRIODE CONNECTION



RCA

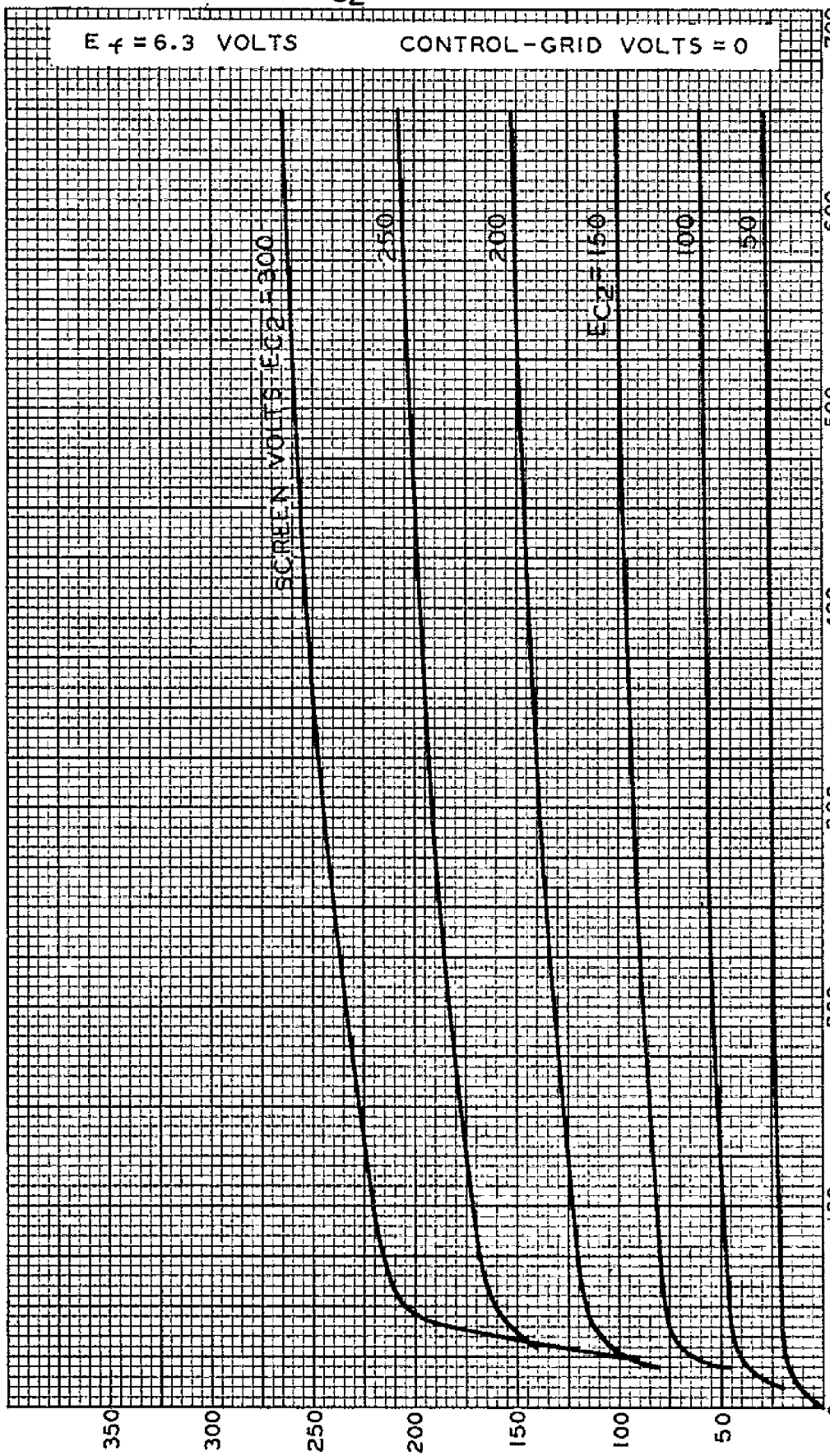
6L6

AVERAGE PLATE CHARACTERISTICS WITH E_{c1} AS VARIABLE

6L6

6L6

AVERAGE PLATE CHARACTERISTICS
WITH E_{c_2} AS VARIABLE



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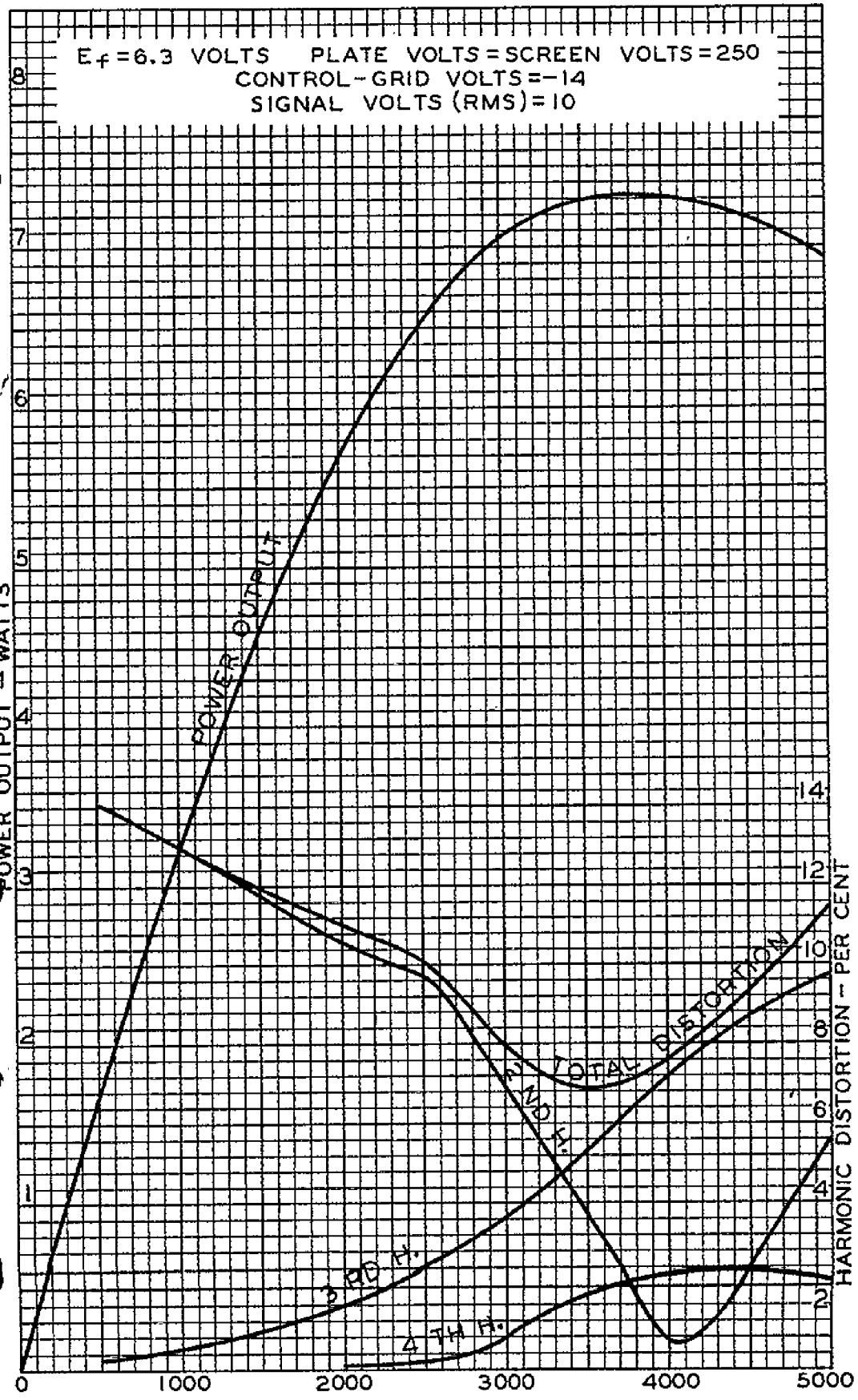
OPERATION CHARACTERISTICS



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OPERATION CHARACTERISTICS