



7027-A

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BEAM POWER TUBE

For high-fidelity audio-amplifier applications
Supersedes Type 7027

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage (AC or DC)	6.3	volts
Current	0.9	amp

Direct Interelectrode Capacitances:⁰

Grid No.1 to plate	1.5	μf
Grid No.1 to cathode & grid No.3, grid No.2, and heater	10	μf
Plate to cathode & grid No.3, grid No.2, and heater	7.5	μf

Characteristics, Class A₁ Amplifier:

Plate Voltage	250	volts
Grid-No.2 Voltage	250	volts
Grid-No.1 Voltage	-14	volts
Plate Resistance (Approx.)	22500	ohms
Transconductance	6000	μmhos
Plate Current	72	ma
Grid-No.2 Current	5	ma

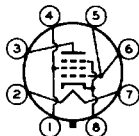
Mechanical:

Operating Position	Any
Maximum Overall Length	4.62"
Maximum Seated Length	4.06"
Maximum Diameter	1.63"
Bulb	T12

Base Small-Wafer Octal 8-Pin with "950" Sleeve
(JEDEC Group 1, No. B8-191)

Basing Designation for BOTTOM VIEW 8HY

- Pin 1 - Grid No.2
- Pin 2 - Heater
- Pin 3 - Plate
- Pin 4 - Grid No.2
- Pin 5 - Grid No.1



- Pin 6 - Grid No.1
- Pin 7 - Heater
- Pin 8 - Cathode,
Grid No.3

PUSH-PULL AF POWER AMPLIFIER — Class AB₁

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE	600 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE	500 max.	volts
GRID-No.2 INPUT	5 max.	watts
PLATE DISSIPATION	35 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 [▲] max.	volts

7027-A



7027-A

BEAM POWER TUBE

Typical Operation with Fixed Bias:

Values are for 2 tubes

Plate Voltage	400	450	540	volts
Grid-No.2 Voltage	300	350	400	volts
Grid-No.1 (Control-Grid) Voltage*	-25	-30	-38	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage	50	60	76	volts
Zero-Signal Plate Current	102	95	100	ma
Max.-Signal Plate Current	152	194	220	ma
Zero-Signal Grid-No.2 Current	6	3.4	5	ma
Max.-Signal Grid-No.2 Current	17	19.2	21.4	ma
Effective Load Resistance (Plate to plate).	6600	6000	6500	ohms
Total Harmonic Distortion	2	1.5	2	%
Max.-Signal Power Output.	34	50	76	watts

Typical Operation with Cathode Bias:

Values are for 2 tubes

Plate Supply Voltage.	400	380	425	volts
Grid-No.2 Supply Voltage.	300	380	425	volts
Cathode Resistor.	200	180	200	ohms
Peak AF Grid-No.1-to-Grid-No.1 Voltage	57	68.5	86	volts
Zero-Signal Plate Current	112	138	150	ma
Max.-Signal Plate Current	128	170	196	ma
Zero-Signal Grid-No.2 Current	7	5.6	8	ma
Max.-Signal Grid-No.2 Current	16	20	20	ma
Effective Load Resistance (Plate to plate).	6600	4500	3800	ohms
Total Harmonic Distortion	2	3.5	4	%
Max.-Signal Power Output.	32	36	44	watts

Maximum Circuit Values:

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 AB₁

Grid No. 2 of each tube connected to tap on plate winding of output transformer

Maximum Ratings, Design-Maximum Values:

PLATE AND GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE.	600	max.		volts
GRID-No.2 INPUT	4.5	max.		watts
PLATE DISSIPATION	35	max.		watts
PEAK HEATER-CATHODE VOLTAGE: Heater negative with respect to cathode.	200	max.		volts
Heater positive with respect to cathode.	200 ^Δ	max.		volts



7027-A

7027-A

BEAM POWER TUBE

Typical Operation:*Values are for 2 tubes*

Plate Supply Voltage.	410	volts
Grid-No.2 Supply Voltage.	*	volts
Cathode Resistor.	220	ohms
Peak AF Grid-No.1-to-Grid-No.1 Voltage. .	68	volts
Zero-Signal Cathode Current	134	ma
Max.-Signal Cathode Current	155	ma
Effective Load Resistance (Plate to plate).	8000	ohms
Total Harmonic Distortion	1.6	%
Max.-Signal Power Output.	24	watts

Maximum Circuit Values:Grid-No.1-Circuit Resistance:^o

For cathode-bias operation. 0.5 max. megohm

^o Without external shield.[▲] The dc component must not exceed 100 volts.[●] The type of input coupling network used should not introduce too much resistance in the grid-No.1 circuit. Transformer- or impedance-coupling devices are recommended.^{*} Obtained from taps on the primary winding of the output transformer. The taps are located on each side of the center-tap (B⁺) so as to apply 43 per cent of the plate signal voltage to grid No.2 of each output tube.**OPERATING CONSIDERATIONS**

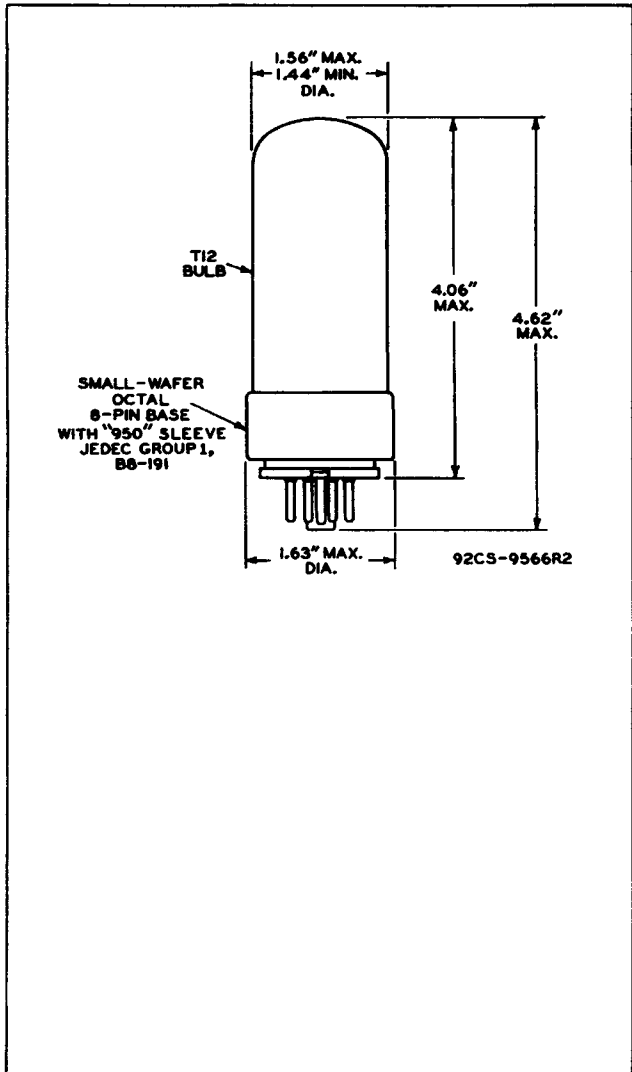
The *bulb* becomes hot during operation. To insure adequate cooling, therefore, it is essential that free circulation of air be provided around the 7027-A.

7027-A



7027-A

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7027-A

7027-A

AVERAGE PLATE CHARACTERISTICS

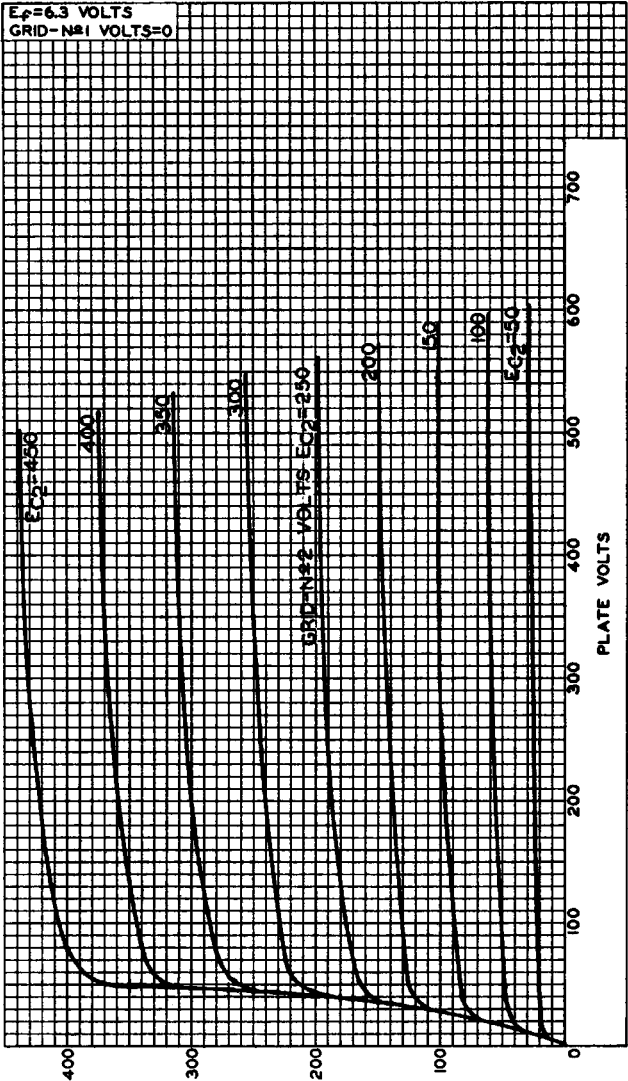


PLATE MILLIAMPERES
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7027-A



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AVERAGE CHARACTERISTICS

$E_f = 6.3$ VOLTS
GRID-N#2 VOLTS = 300

GRID-N#1 VOLTS (E_{c1}) = 0

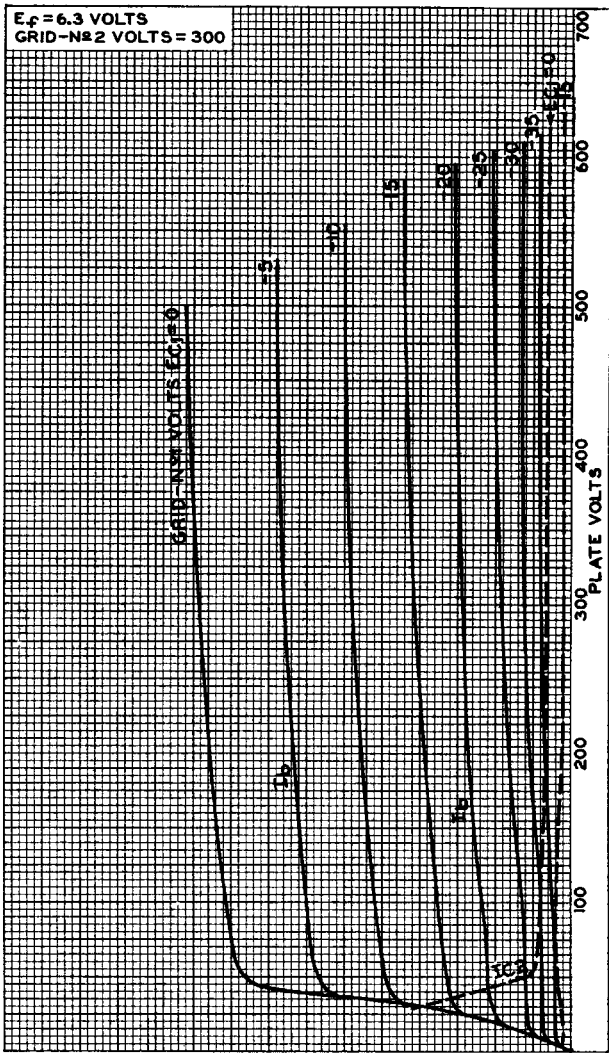


PLATE (I_b) OR GRID-N#2 (I_{c2}) MILLIAMPERES

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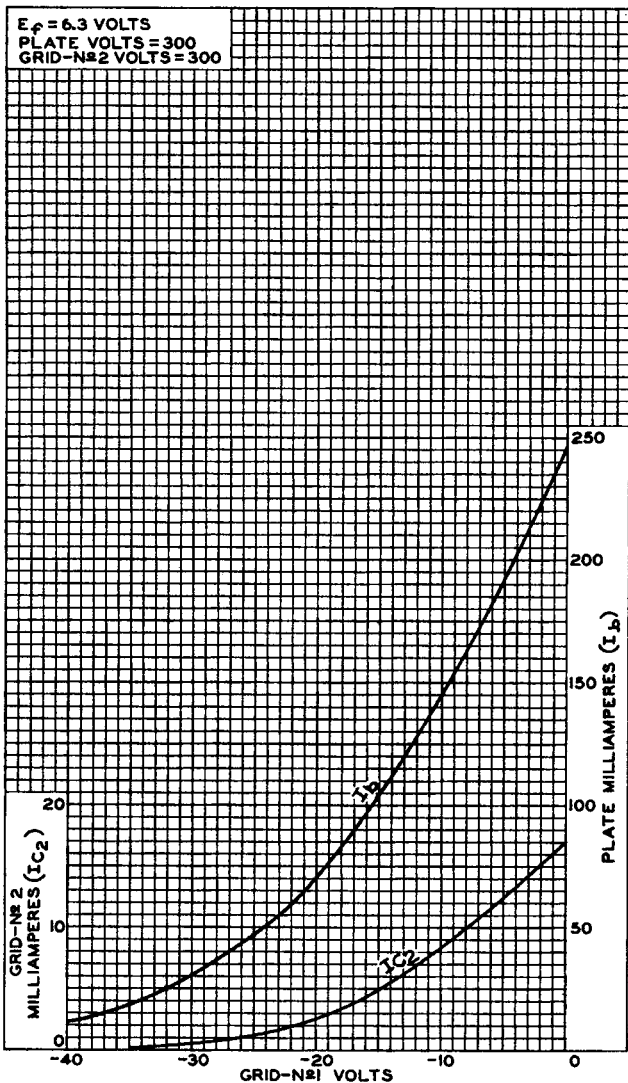
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7027-A

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AVERAGE CHARACTERISTICS



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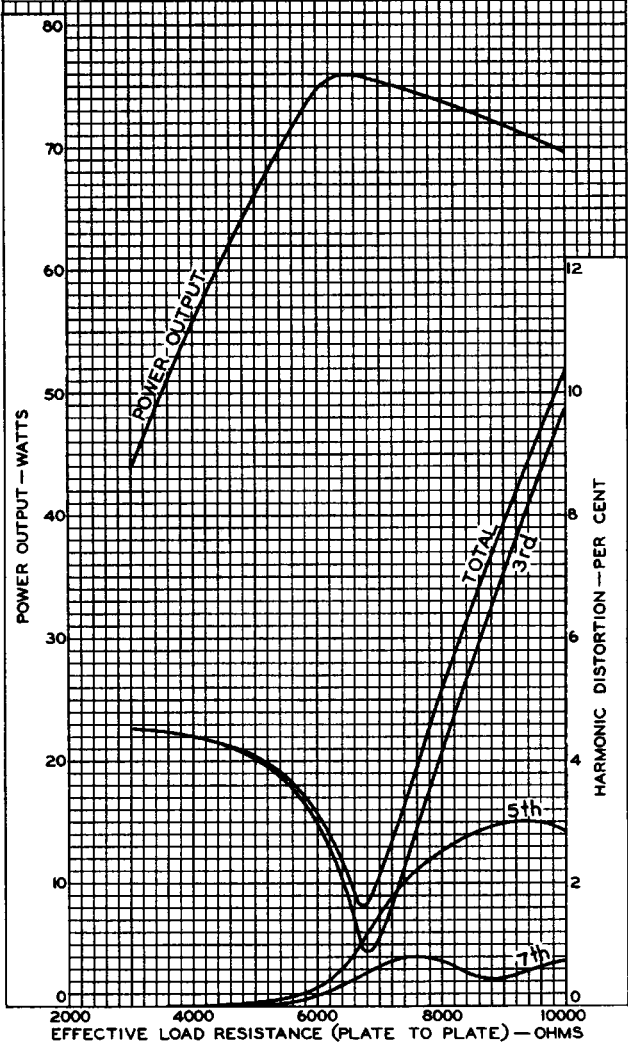
7027-A

OPERATION CHARACTERISTICS
PUSH-PULL CLASS AB₁

$E_f = 6.3$ VOLTS
PLATE VOLTS = 540

GRID-N₂ VOLTS = 400
GRID-N₁ VOLTS = -38

AF GRID-N₁-TO-GRID-N₁ VOLTS (RMS) = 53.7



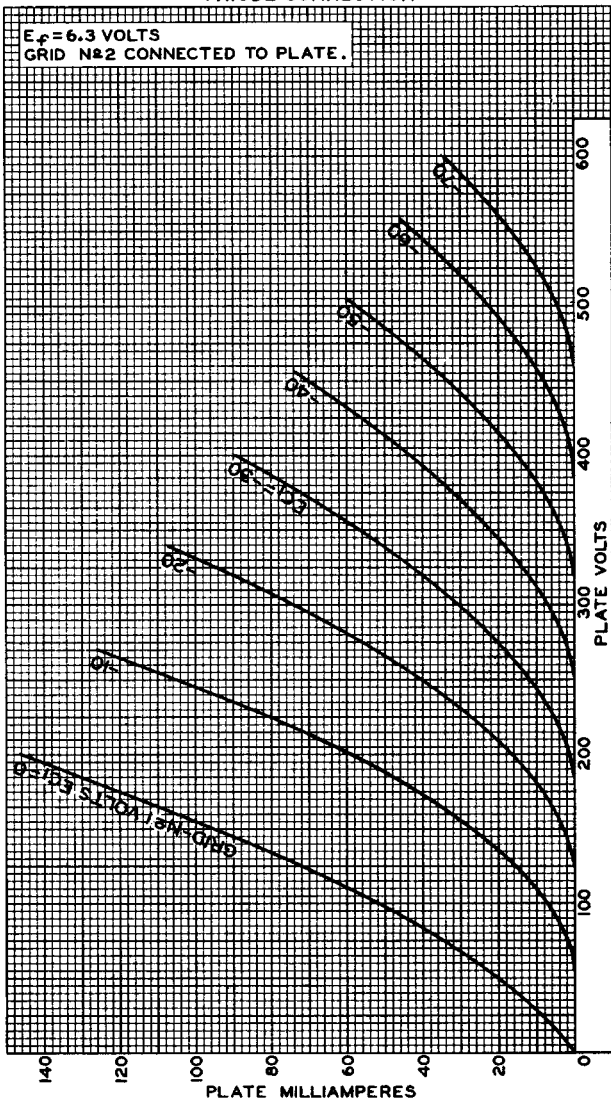


7027-A

7027-A

AVERAGE PLATE CHARACTERISTICS TRIODE CONNECTION

$E_f = 6.3$ VOLTS
GRID N₂ CONNECTED TO PLATE.



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