Beam Power Tube

9-PIN MINIATURE TYPE

With Heater Having Controlled Warm-Up Time

GENERAL DATA

Electrical: ←

Heater, for Unipotential Cathode:		
Voltage (AC or DC)	6.3	volts
Current	0.45 ± 6%	amp
Warm-up time (Average)	11	sec
Direct Interelectrode Capacitances:▲		
Grid No.1 to plate	0.4 max.	μμf
Grid No.1 to cathode & grid No.3, grid No.2, and heater	9	μμf
Plate to cathode & grid No.3, grid No.2, and heater	6	μμf

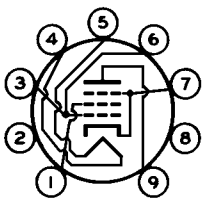
Characteristics, Class A_1 Amplifier:

Plate Voltage	75	250	volts
Grid-No.2 Voltage	250	250	volts
Grid-No.1 Voltage	0	−15	volts ←
Plate Resistance (Approx.)	−	73000	ohms
Transconductance	−	4800	μmhos
Plate Current	130●	46	ma
Grid-No.2 Current	16●	4.6	ma
Grid-No.1 Voltage (Approx.) for plate μa = 100	−	−40	volts ←

Mechanical: ←

Operating Position	Any
Maximum Overall Length	3-1/16"
Maximum Seated Length	2-13/16"
Length, Base Seat to Bulb Top (Excluding tip)	2-7/16" ± 3/32"
Maximum Diameter	0.750" to 0.875"
Dimensional Outline	See *General Section*
Bulb	T6-1/2
Base	Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW	9HN

Pin 1 – Grid No.2
Pin 2 – No Connection
Pin 3 – Grid No.1
Pin 4 – Heater
Pin 5 – Heater
Pin 6 – Grid No.1



Pin 7 – Cathode, Grid No.3
Pin 8 – Internal Connection—Do Not Use
Pin 9 – Plate

← Indicates a change.

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VERTICAL-DEFLECTION AMPLIFIER

→ **Maximum Ratings,** *Design-Maximum Values:*

For operation in a 525-line, 30-frame system★

DC PLATE VOLTAGE	350	max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE♦	2200	max.	volts
DC GRID-No.2 (SCREEN-GRID) VOLTAGE	315	max.	volts
PEAK NEGATIVE-PULSE GRID-No.1 (CONTROL-GRID) VOLTAGE	275	max.	volts
CATHODE CURRENT:			
Peak	155	max.	ma
Average	45	max.	ma
GRID-No.2 INPUT	2.2	max.	watts
PLATE DISSIPATION	10	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200	max.	volts
Heater positive with respect to cathode	200♦	max.	volts
BULB TEMPERATURE (At hottest point on bulb surface)	250	max.	°C

Maximum Circuit Values:

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

▲ Without external shield.

● This value can be measured by a method involving a recurrent wave form such that the maximum ratings of the tube will not be exceeded.

★ As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.

♦ This rating is applicable when the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.

♦ The dc component must not exceed 100 volts.

→ Indicates a change.

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This old sheet is retained, because of the AF Power Amplifier data not available in the new sheet.

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BEAM POWER TUBE

VERTICAL DEFLECTION AMPLIFIER

Maximum Ratings, *Design-Center Values Except as Noted:*

For operation in a 525-line, 30-frame system□

DC PLATE VOLTAGE	315	max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE (Absolute maximum)⊕	2200■	max.	volts
DC GRID-No.2 (SCREEN-GRID) VOLTAGE	285	max.	volts
PEAK NEGATIVE-PULSE GRID-No.1 (CONTROL-GRID) VOLTAGE	250	max.	volts
CATHODE CURRENT:			
Peak	140	max.	ma
Average	40	max.	ma
GRID-No.2 INPUT	2	max.	watts
PLATE DISSIPATION	10	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200	max.	volts
Heater positive with respect to cathode	200▲	max.	volts
BULB TEMPERATURE (At hottest point on bulb surface)	250	max.	°C

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:			
For fixed-bias operation	0.5	max.	megohm
For cathode-bias operation	1.0	max.	megohm

AF POWER AMPLIFIER - Class A_1

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	350	max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE	285	max.	volts
GRID-No.2 INPUT	2	max.	watts
PLATE DISSIPATION	12	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200	max.	volts
Heater positive with respect to cathode	200▲	max.	volts
BULB TEMPERATURE (At hottest point on bulb surface)	250	max.	°C

Typical Operation and Characteristics:

Plate Voltage	250	volts
Grid-No.2 Voltage	250	volts
Grid-No.1 (Control-Grid) Voltage	-14	volts
Peak AF Grid-No.1 Voltage	13	volts
Zero-Signal Plate Current	46	ma

□ As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

⊕ This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.

■ Under no circumstances should this absolute value be exceeded.

▲: See next page.

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BEAM POWER TUBE

Max.-Signal Plate Current	48		ma
Zero-Signal Grid-No.2 Current	4.6		ma
Max.-Signal Grid-No.2 Current	8		ma
Plate Resistance (Approx.)	73000		ohms
Transconductance	4800		μmhos
Load Resistance	5000		ohms
Total Harmonic Distortion	10		%
Max.-Signal Power Output	5.4		watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:			
For fixed-bias operation	0.1	max.	megohm
For cathode-bias operation	1.0	max.	megohm

PUSH-PULL AF POWER AMPLIFIER - Class AB_1

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	350	max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE	285	max.	volts
GRID-No.2 INPUT	2	max.	watts
PLATE DISSIPATION	12	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200	max.	volts
Heater positive with respect to cathode	200▲	max.	volts
BULB TEMPERATURE (At hottest point on bulb surface)	250	max.	°C

Typical Operation:

Values are for 2 tubes

Plate Voltage	350		volts
Grid-No.2 Voltage	280		volts
Grid-No.1 (Control-Grid) Voltage●	-23.5		volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage	47		volts
Zero-Signal Plate Current	46		ma
Max.-Signal Plate Current	103		ma
Zero-Signal Grid-No.2 Current	3		ma
Max.-Signal Grid-No.2 Current	13		ma
Effective Load Resistance (Plate to plate)	7500		ohms
Total Harmonic Distortion	1		%
Max.-Signal Power Output	21.5		watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:			
For fixed-bias operation	0.1	max.	megohm
For cathode-bias operation	1.0	max.	megohm

▲ 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.

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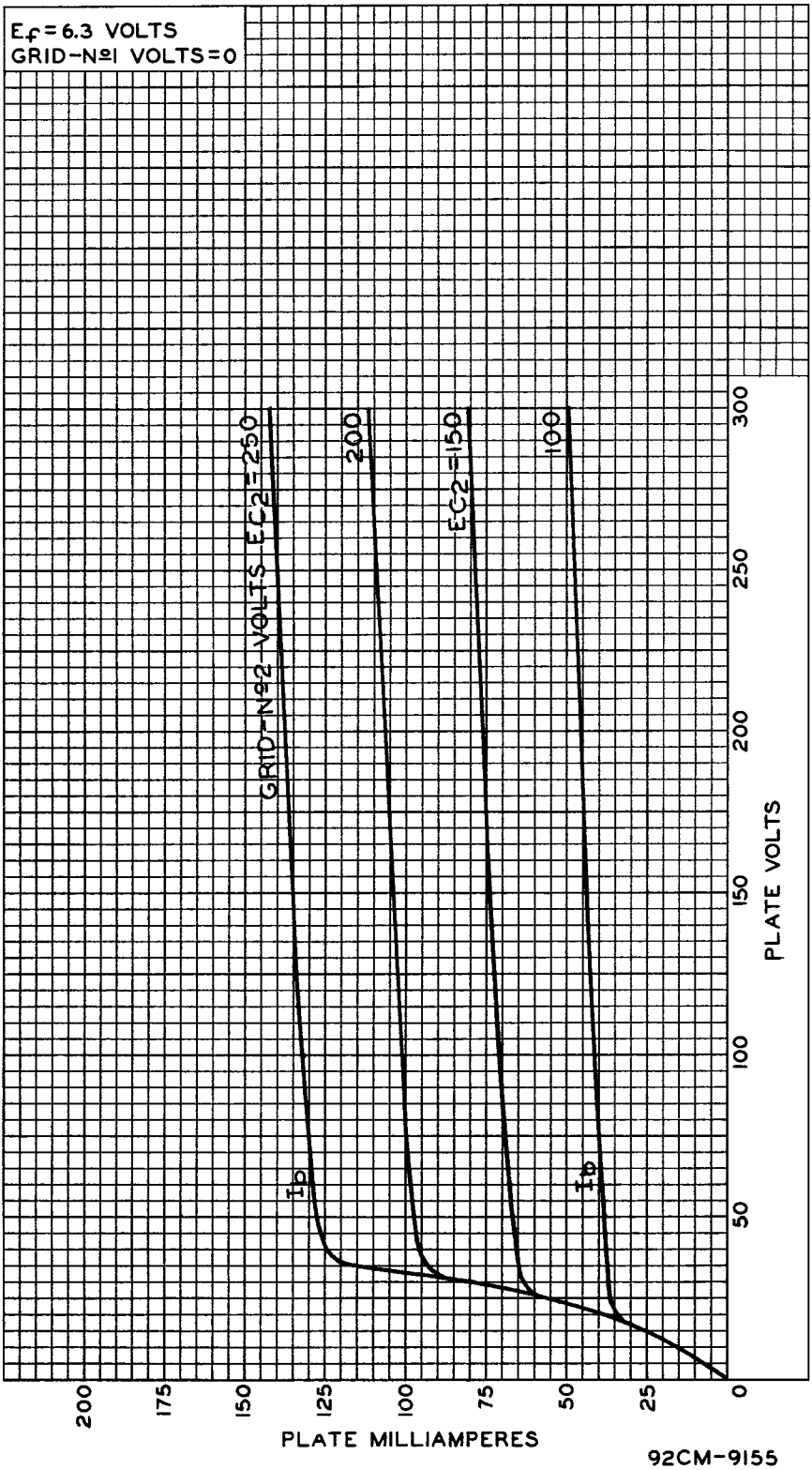
AVERAGE PLATE CHARACTERISTICS



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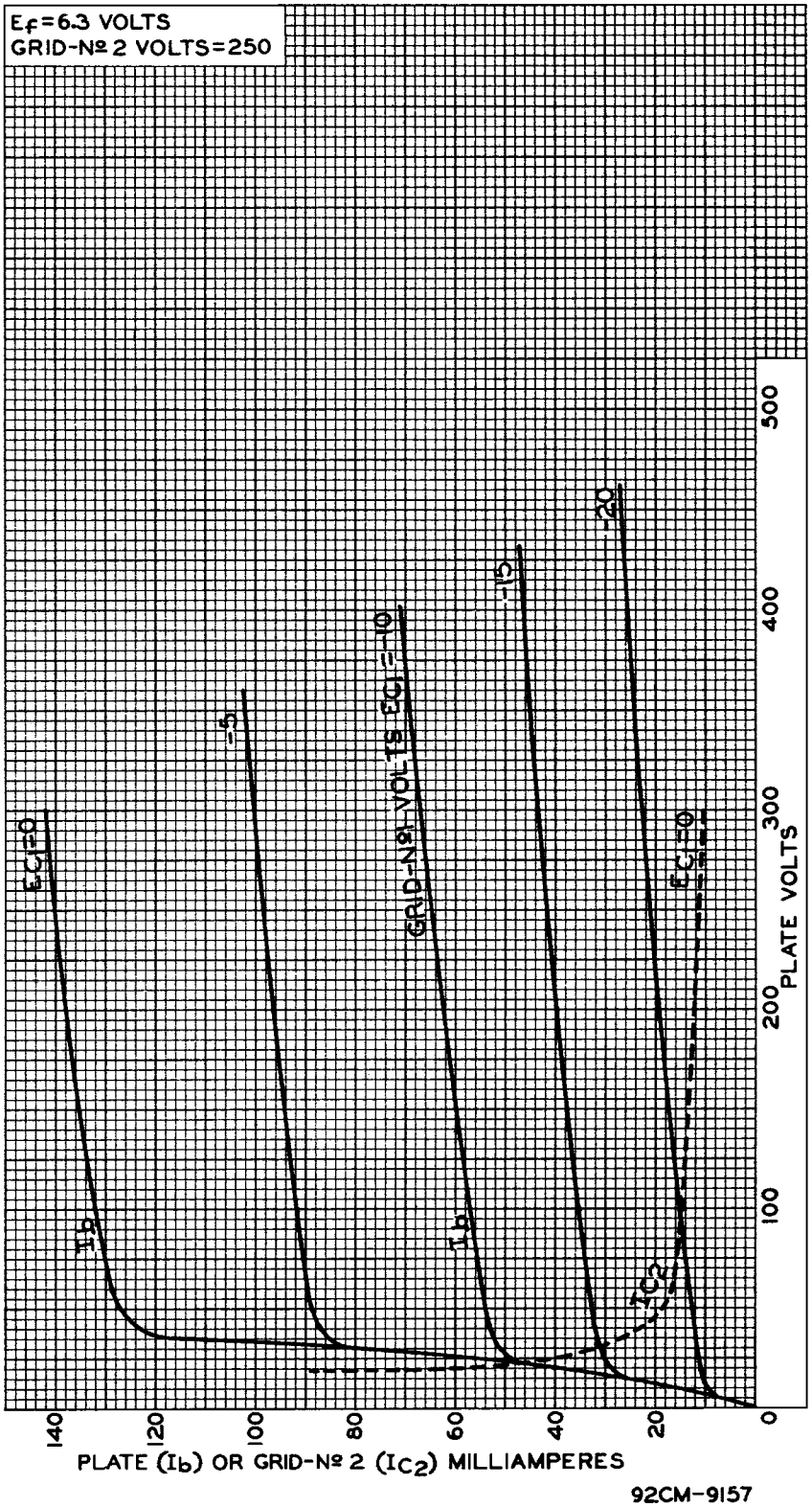
AVERAGE CHARACTERISTICS



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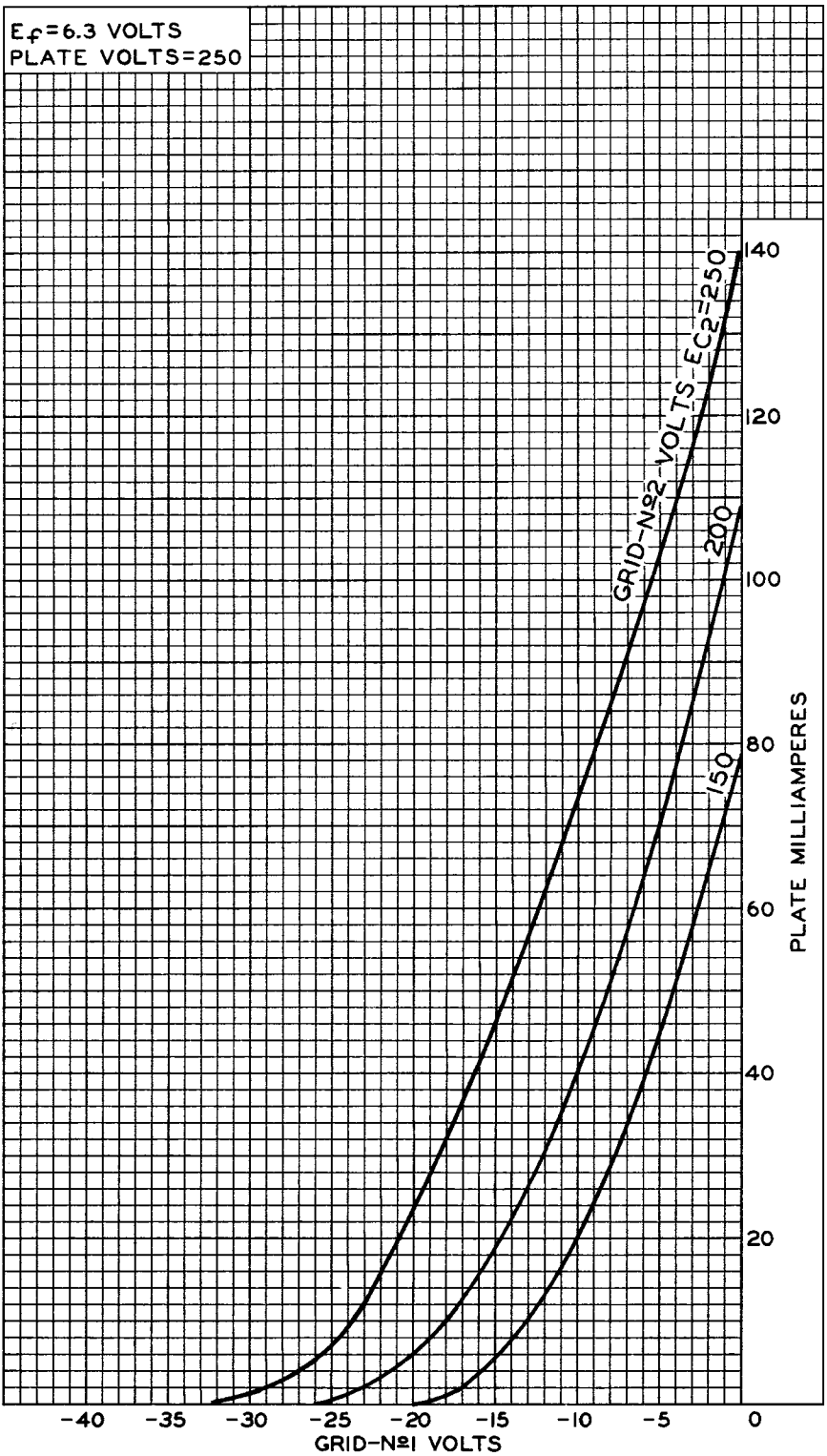
AVERAGE CHARACTERISTICS



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