



6293

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BEAM POWER AMPLIFIER

FOR PULSE MODULATOR SERVICE

GENERAL DATA**Electrical:**

Heater, for Unipotential Cathode:

Voltage 6.3 $\pm$ 10% ac or dc volts

Current 1.25 amp

Transconductance, for plate
volts = 200, grid-No.2 volts
= 200, and plate ma. = 1007300 μ mhos

Mu-Factor, Grid No.2 to

Grid No.1 for plate volts

= 200, grid-No.2 volts =
200, and plate ma. = 100 4.5

Direct Interelectrode Capacitances:*

Grid No.1 to Plate 0.22 max. μ mfInput 13.5 μ mfOutput 8.5 μ mf**Mechanical:**

Mounting Position Any

Overall Length 3-11/16" $\pm$ 1/8"Seated Length 3-1/8" $\pm$ 1/8"

Maximum Diameter 1-23/32"

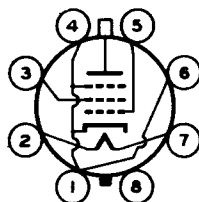
Bulb T-12

Cap Small (JETEC No.C1-1)

Base Large-Wafer Octal 8-Pin with sleeve
(JETEC No.B8-86)**BOTTOM VIEW**Pin 1 - Cathode,
Grid No.3,
Internal
Shield

Pin 2 - Heater

Pin 3 - Grid No.2



Pin 4 - Same as Pin 1

Pin 5 - Grid No.1

Pin 6 - Same as Pin 1

Pin 7 - Heater

Pin 8 - Base Sleeve

Cap - Plate

Bulb Temperature (At hottest point) 175 max. $^{\circ}$ C**MODULATOR — Rectangular-Wave Modulation****Maximum and Minimum CCS* Ratings, Absolute Values:**For Duty Factor[▲] Between 0.001 and 1.0and Maximum Averaging Time of 10000 μ sec in Any IntervalDC PLATE SUPPLY VOLTAGE (E_{bb})[▲] See Rating Chart IINSTANTANEOUS PLATE VOLTAGE 115% of E_{bb} DC GRID-No.2 (SCREEN) SUPPLY VOLTAGE[▲] 500 max. volts

DC GRID-No.1 (CONTROL-GRID)

SUPPLY VOLTAGE[▲] { 300 max. volts{ Minimum—See Rating
Chart I

* With no external shielding and base sleeve connected to ground.

● Continuous Commercial Service.

▲, ▲: See next page.

OCT. 1, 1953

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TENTATIVE DATA 1

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GRID-No.1 VOLTAGE:

Instantaneous Negative Value 400 max. volts

Peak Positive Value 100 max. volts

PEAK PLATE CURRENT See Rating Chart II

PEAK GRID-No.2 CURRENT 0.75 max. amp

PEAK GRID-No.1 CURRENT 0.5 max. amp

PLATE INPUT 80 max. watts

GRID-No.2 INPUT 1.75 max. watts

GRID-No.1 INPUT 0.5 max. watt

PLATE DISSIPATION* See Rating Chart I

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode 135 max. volts

Heater positive with respect to cathode 135 max. volts

Typical Operation with Rectangular-Wave Shapes

in Accompanying Test Circuit:

With Duty Factor[†] of 0.01

DC Plate Supply Voltage 3000 volts

DC Grid-No.2 Supply Voltage 300 volts

DC Grid-No.1 Supply Voltage -175 volts

Peak Positive Grid-No.1 Voltage 65 volts

Plate Current:

Peak 1.5 amp

DC 0.015 amp

DC Grid-No.2 Current 0.004 amp

DC Grid-No.1 Current 0.0025 amp

Load Resistance (R_L), 100 watts,
non-inductive $1500 \pm 5\%$ ohms

Maximum Circuit Values:

Grid-No.1-Circuit Resistance 30000 max. ohms

[†] **Duty Factor** for the 6293 is defined as the "on" time in microseconds divided by 10000 microseconds.

"On" Time is defined as the sum of the durations of all the individual pulses which occur during any 10000-microsecond interval.

"Pulse Duration" is defined as the time interval between the two points on the pulse at which the instantaneous value is 70% of the peak value. The peak value is defined as the maximum value of a smooth curve through the average of the fluctuations over the top portion of the pulse.

[▲] For tube protection, it is essential that sufficient resistance be used in the plate supply circuit, the grid-No.2 supply circuit, and the grid-No.1 supply circuit so that the short-circuit current is limited to 0.5 ampere in each circuit.

^{*} Averaged over any interval not exceeding 10000 microseconds. Care should be used in determining the plate dissipation. A calculated value based on rectangular pulses can be considerably in error when the actual pulses have a finite rise and fall time. Plate dissipation should preferably be determined by measuring the bulb temperature under actual operating conditions; then, with the tube in the same socket and under the same ambient-temperature conditions, apply to the tube sufficient dc input to obtain the same bulb temperature. This value of dc input is a measure of the plate dissipation.



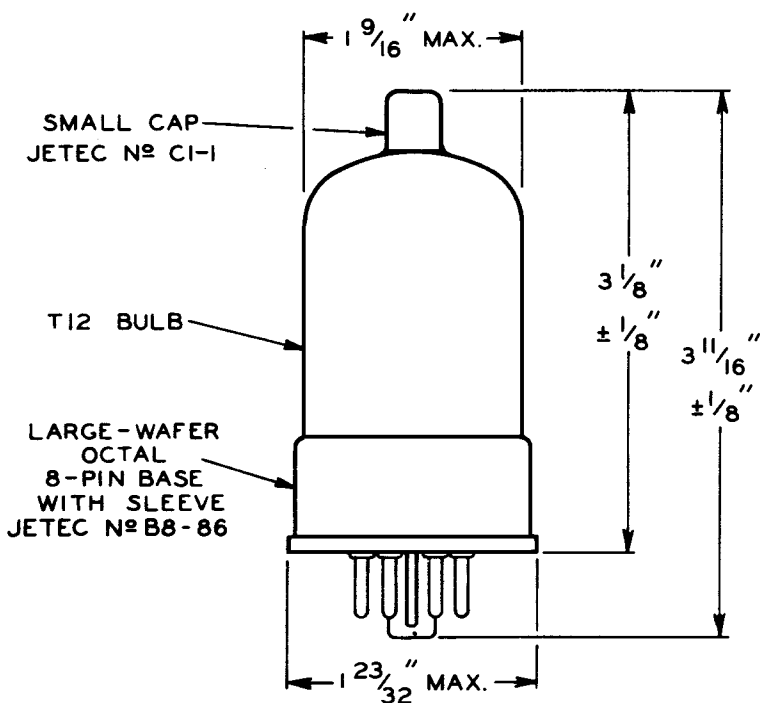
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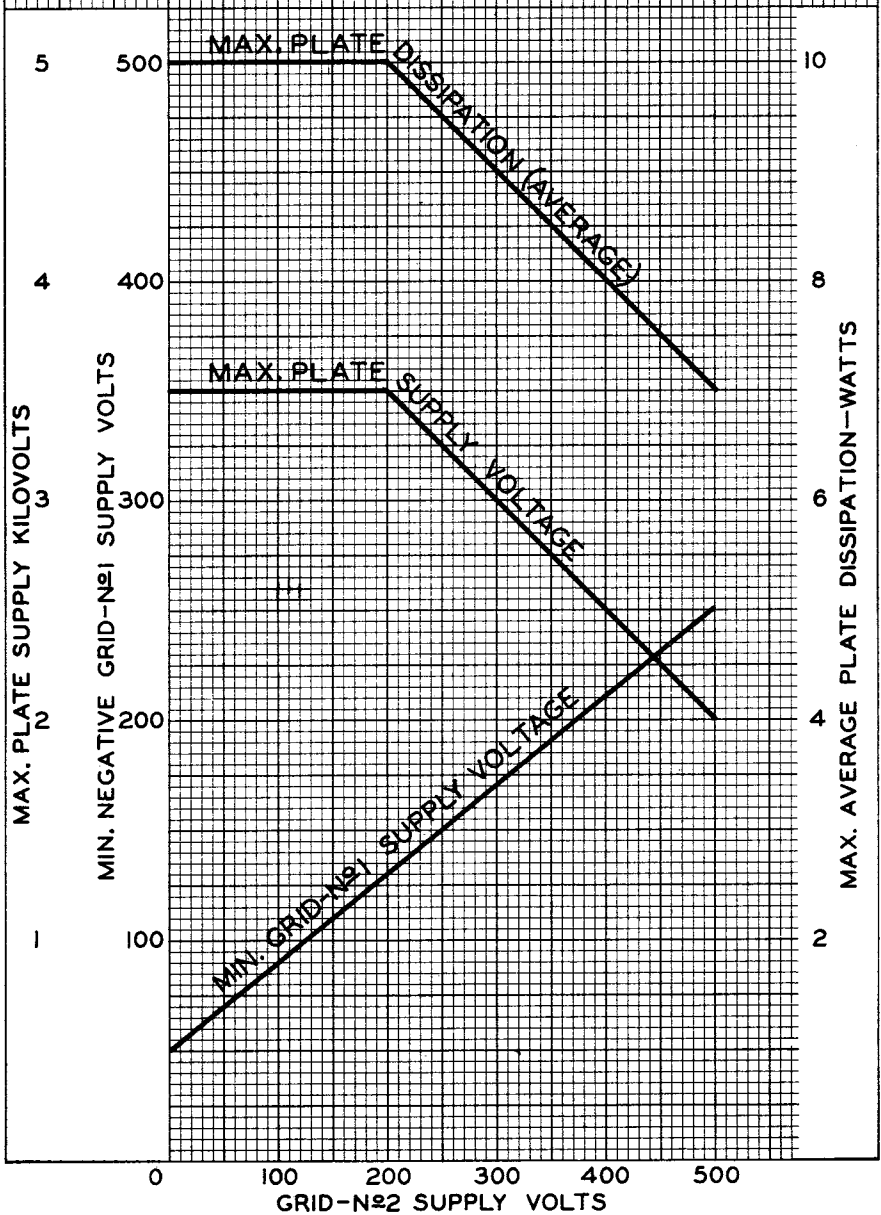


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RATING CHART I

$E_f = 6.3$ VOLTS
AVERAGING TIME = 10000 MICROSECONDS MAX.



JUNE 5, 1953

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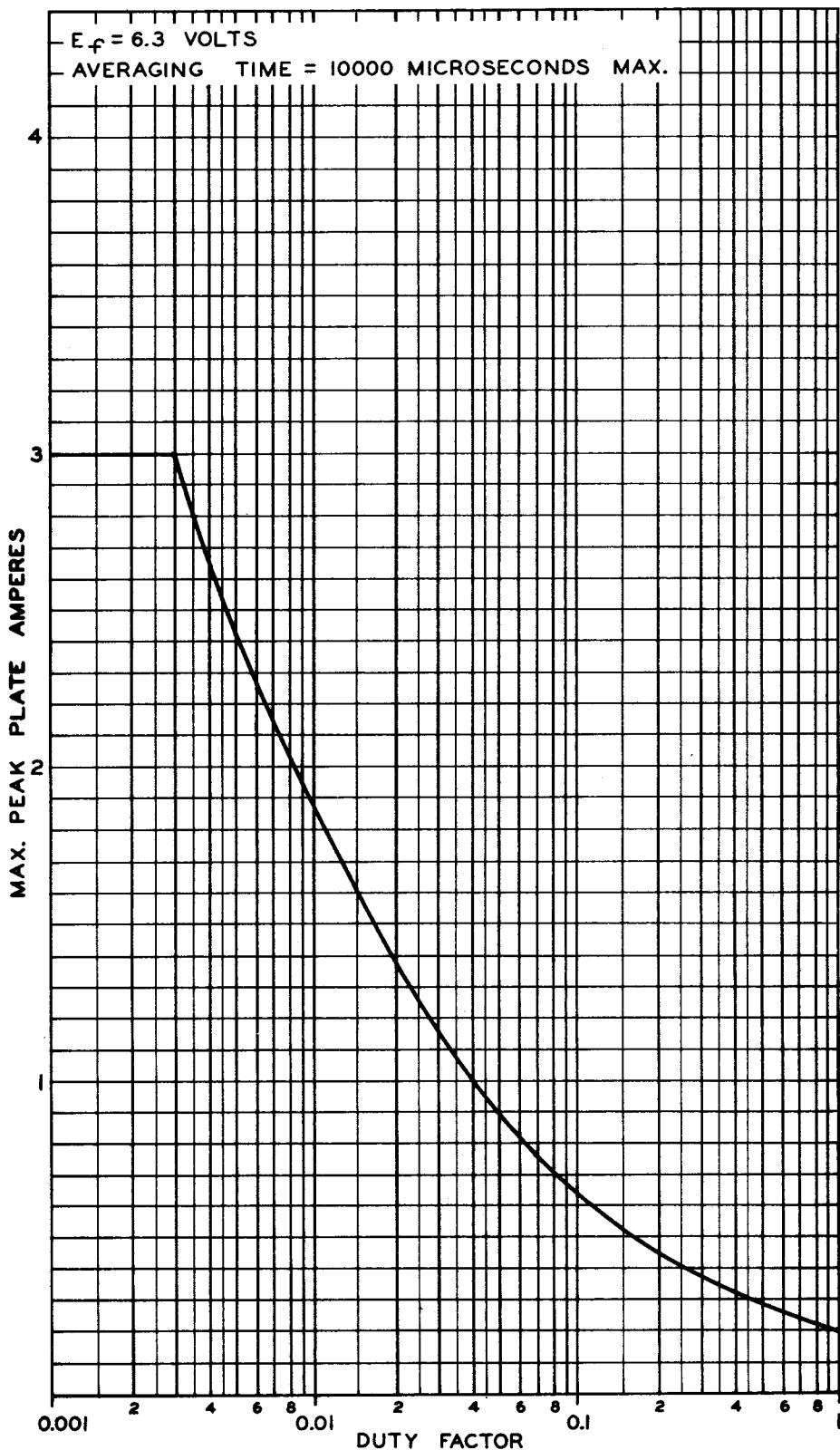
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RATING CHART II



JUN. 8, 1953

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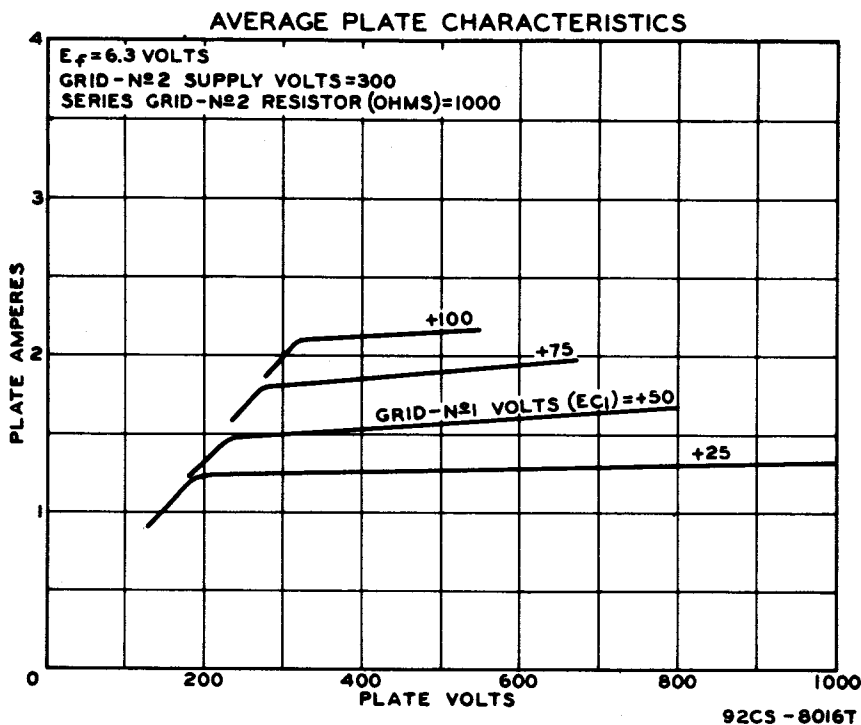
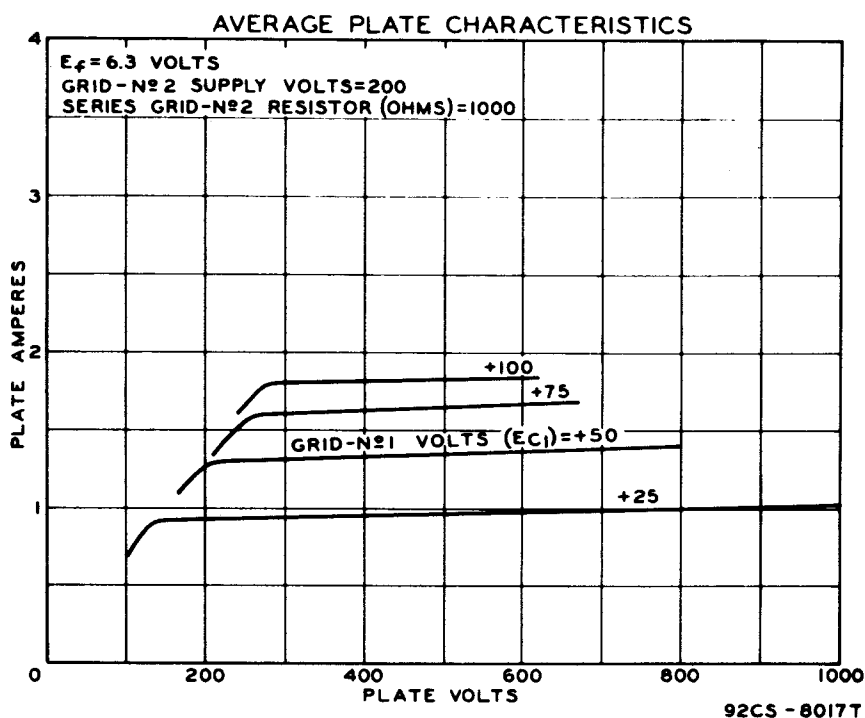
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OCT. 1, 1953

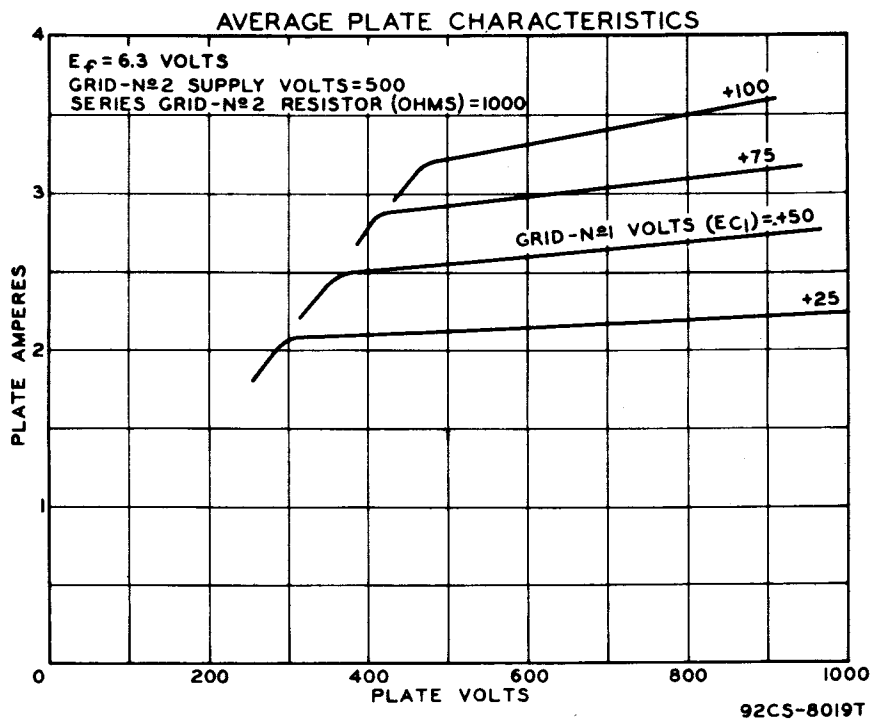
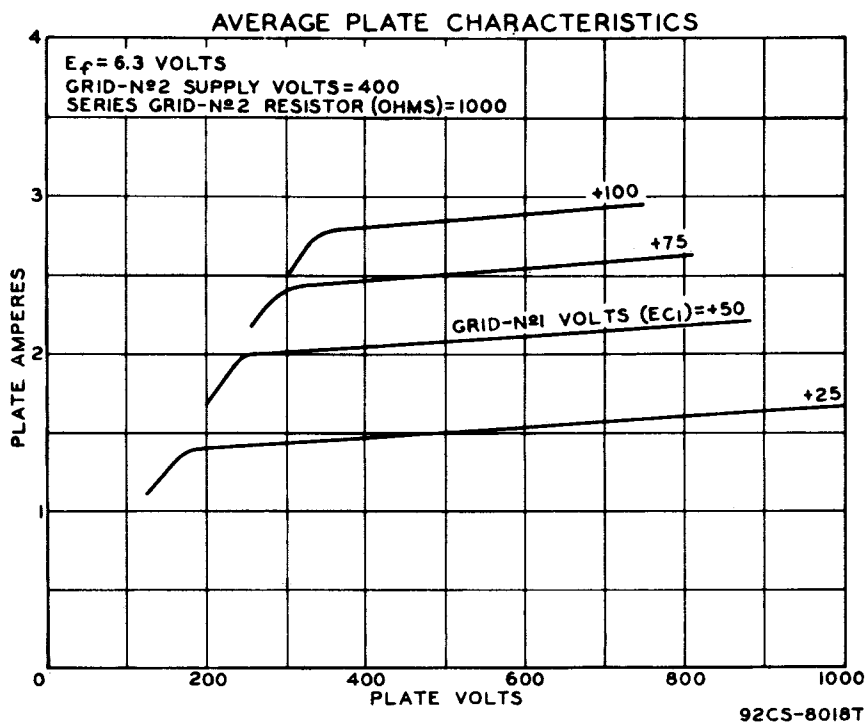
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