

## MECHANICAL DATA

|                             |                          |
|-----------------------------|--------------------------|
| Bulb . . . . .              | T-6½                     |
| Base . . . . .              | E9-1, Small Button 9-Pin |
| Outline . . . . .           | 6-3                      |
| Basing . . . . .            | 9CK                      |
| Cathode . . . . .           | Coated Unipotential      |
| Mounting Position . . . . . | Any                      |

## ELECTRICAL DATA

### HEATER CHARACTERISTICS

|                                                  | 6CM6 | 12CM6          |
|--------------------------------------------------|------|----------------|
| Heater Voltage . . . . .                         | 6.3  | 12.6 Volts     |
| Heater Current . . . . .                         | 450  | 225 Ma         |
| Heater-Cathode Voltage<br>(Design Center Values) |      |                |
| Heater Negative with Respect to Cathode          |      |                |
| Total DC and Peak . . . . .                      | 200  | 200 Volts Max. |
| Heater Positive with Respect to Cathode          |      |                |
| DC . . . . .                                     | 100  | 100 Volts Max. |
| Total DC and Peak . . . . .                      | 200  | 200 Volts Max. |

### DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

|                                    |                   |
|------------------------------------|-------------------|
| Grid to Plate: (g1 to p) . . . . . | 0.7 $\mu\text{f}$ |
| Input: g1 to (h+k+g2+g3) . . . . . | 8.0 $\mu\text{f}$ |
| Output: p to (h+k+g2+g3) . . . . . | 8.5 $\mu\text{f}$ |

### RATINGS (Design Center Values — Except as Noted)

#### Class A<sub>1</sub> Amplifier

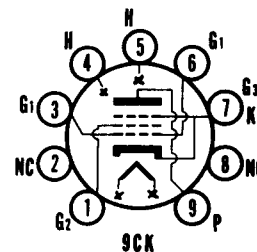
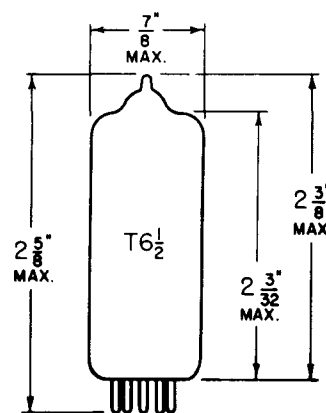
|                                  |                 |
|----------------------------------|-----------------|
| Plate Voltage . . . . .          | 315 Volts Max.  |
| Plate Dissipation . . . . .      | 12 Watts Max.   |
| Grid No. 2 Voltage . . . . .     | 285 Volts Max.  |
| Grid No. 2 Dissipation . . . . . | 2 Watts Max.    |
| Grid No. 1 Circuit Resistance    |                 |
| Fixed Bias . . . . .             | 0.1 Megohm Max. |
| Cathode Bias . . . . .           | 0.5 Megohm Max. |

#### Vertical Deflection Amplifier<sup>1</sup>

|                                               | Pentode<br>Connected | Triode<br>Connected  |
|-----------------------------------------------|----------------------|----------------------|
| Plate Voltage . . . . .                       | 315                  | 315 Volts Max.       |
| Peak Positive Plate Voltage . . . . .         | 2000                 | 2000 Volts Abs. Max. |
| Plate Dissipation <sup>2</sup> . . . . .      | 8                    | 8 Watts Max.         |
| Grid No. 2 Voltage . . . . .                  | 285                  | Volts                |
| Grid No. 2 Dissipation <sup>2</sup> . . . . . | 1.75                 | Watts                |
| Peak Negative Grid Voltage . . . . .          | 250                  | 250 Volts Max.       |
| Average Cathode Current . . . . .             | 40                   | 40 Ma Max.           |
| Peak Cathode Current . . . . .                | 120                  | 120 Ma Max.          |
| Grid No. 1 Circuit Resistance                 |                      |                      |
| Cathode Bias . . . . .                        | 2.2                  | 2.2 Megohms Max.     |

## QUICK REFERENCE DATA

The Sylvania Types 6CM6 and 12CM6 are miniature beam power pentodes designed for service as general purpose audio power amplifiers or vertical deflection amplifiers in television receiver sweep circuits. Except for bulb size and/or heater characteristics they are identical to the 6V6GT.



SYLVANIA ELECTRIC  
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RADIO TUBE DIVISION  
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# CHARACTERISTICS AND TYPICAL OPERATION

## Class A<sub>1</sub> Amplifier (Single Tube)

### Conditions:

|                                             |        |        |                  |
|---------------------------------------------|--------|--------|------------------|
| Plate Voltage . . . . .                     | 180    | 250    | 315 Volts        |
| Grid No. 2 Voltage . . . . .                | 180    | 250    | 225 Volts        |
| Grid No. 1 Voltage . . . . .                | -8.5   | -12.5  | -13.0 Volts      |
| Peak A F Grid No. 1 Voltage . . . . .       | 8.5    | 12.5   | 13.0 Volts       |
| Zero Signal Plate Current . . . . .         | 29     | 45     | 34 Ma            |
| Maximum Signal Plate Current . . . . .      | 30     | 47     | 35 Ma            |
| Zero Signal Grid No. 2 Current . . . . .    | 3.0    | 4.5    | 2.2 Ma           |
| Maximum Signal Grid No. 2 Current . . . . . | 4.0    | 7.0    | 6.0 Ma           |
| Plate Resistance (approx.) . . . . .        | 50,000 | 50,000 | 80,000 Ohms      |
| Transconductance . . . . .                  | 3,700  | 4,100  | 3,750 $\mu$ mhos |
| Load Resistance . . . . .                   | 5,500  | 5,000  | 8,500 Ohms       |
| Maximum Signal Power Output . . . . .       | 2.0    | 4.5    | 5.5 Watts        |
| Total Harmonic Distortion . . . . .         | 8      | 8      | 12 Percent       |

## Class A<sub>1</sub> Push-Pull Amplifier (Values are for Two Tubes)

### Conditions:

|                                                     |        |             |
|-----------------------------------------------------|--------|-------------|
| Plate Voltage . . . . .                             | 250    | 285 Volts   |
| Grid No. 2 Voltage . . . . .                        | 250    | 285 Volts   |
| Grid No. 1 Voltage . . . . .                        | -15    | -19 Volts   |
| Peak A F Grid No. 1 to Grid No. 1 Voltage . . . . . | 30     | 38 Volts    |
| Zero Signal Plate Current . . . . .                 | 70     | 70 Ma       |
| Maximum Signal Plate Current . . . . .              | 79     | 92 Ma       |
| Zero Signal Grid No. 2 Current . . . . .            | 5      | 4 Ma        |
| Maximum Signal Grid No. 2 Current . . . . .         | 13     | 13.5 Ma     |
| Plate-to-Plate Load Resistance . . . . .            | 10,000 | 8,000 Ohms  |
| Maximum Signal Power Output . . . . .               | 10     | 14 Watts    |
| Total Harmonic Distortion . . . . .                 | 5      | 3.5 Percent |

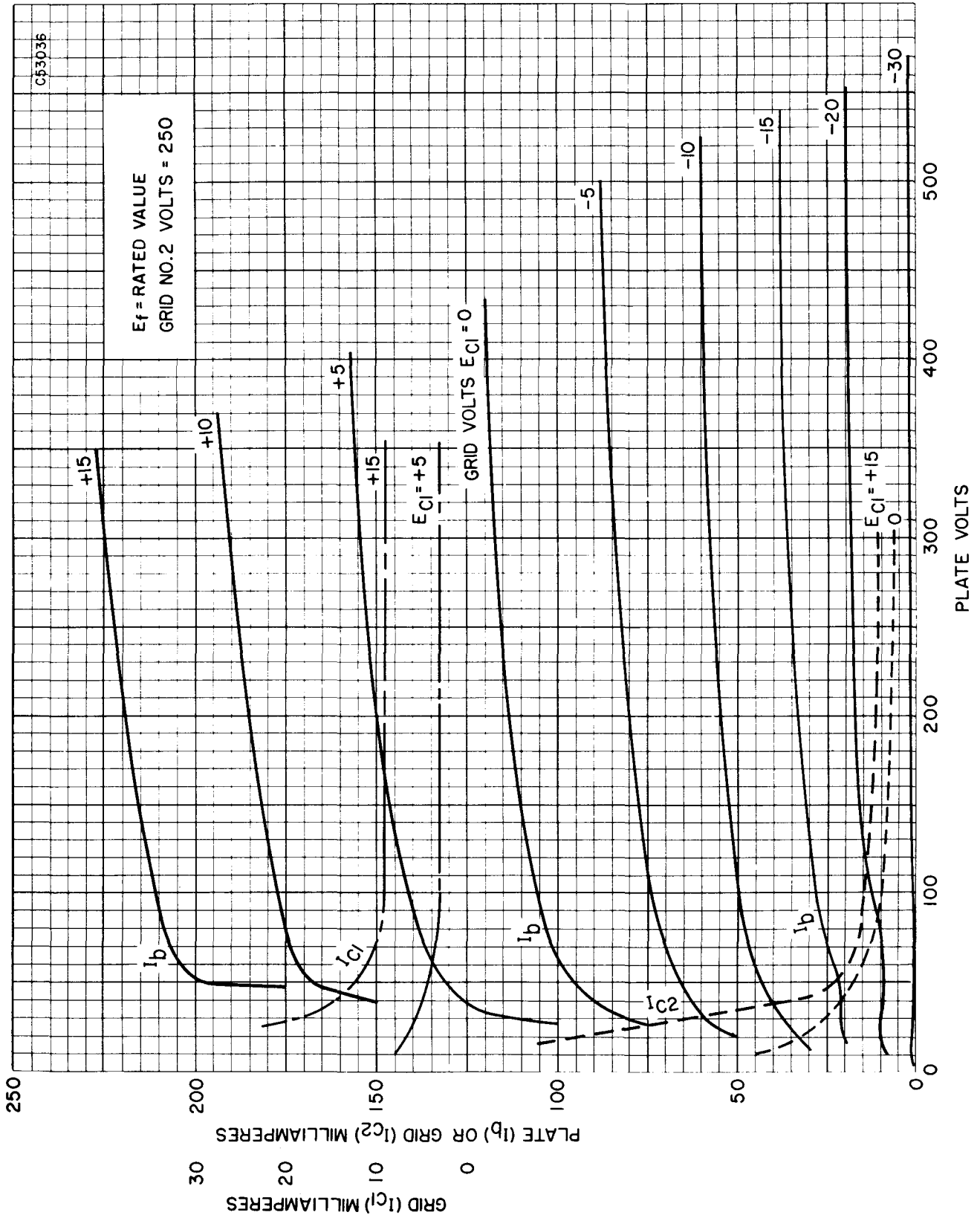
## Vertical Deflection Amplifier

|                                                              | Pentode<br>Connected | Triode<br>Connected |
|--------------------------------------------------------------|----------------------|---------------------|
| Plate Voltage . . . . .                                      | 250                  | 250 Volts           |
| Grid No. 2 Voltage . . . . .                                 | 250                  | Volts               |
| Grid No. 1 Voltage . . . . .                                 | -12.5                | -12.5 Volts         |
| Plate Current . . . . .                                      | 45                   | 49.5 Ma             |
| Grid No. 2 Current . . . . .                                 | 4.5                  | Ma                  |
| Transconductance . . . . .                                   | 4,100                | 5,000 $\mu$ mhos    |
| Amplification Factor . . . . .                               |                      | 9.8                 |
| Plate Resistance (approx.) . . . . .                         | 50,000               | 1,960 Ohms          |
| Grid No. 1 Voltage (approx.) for $I_{b1} = 0.5$ Ma . . . . . | -37                  | -37 Volts           |

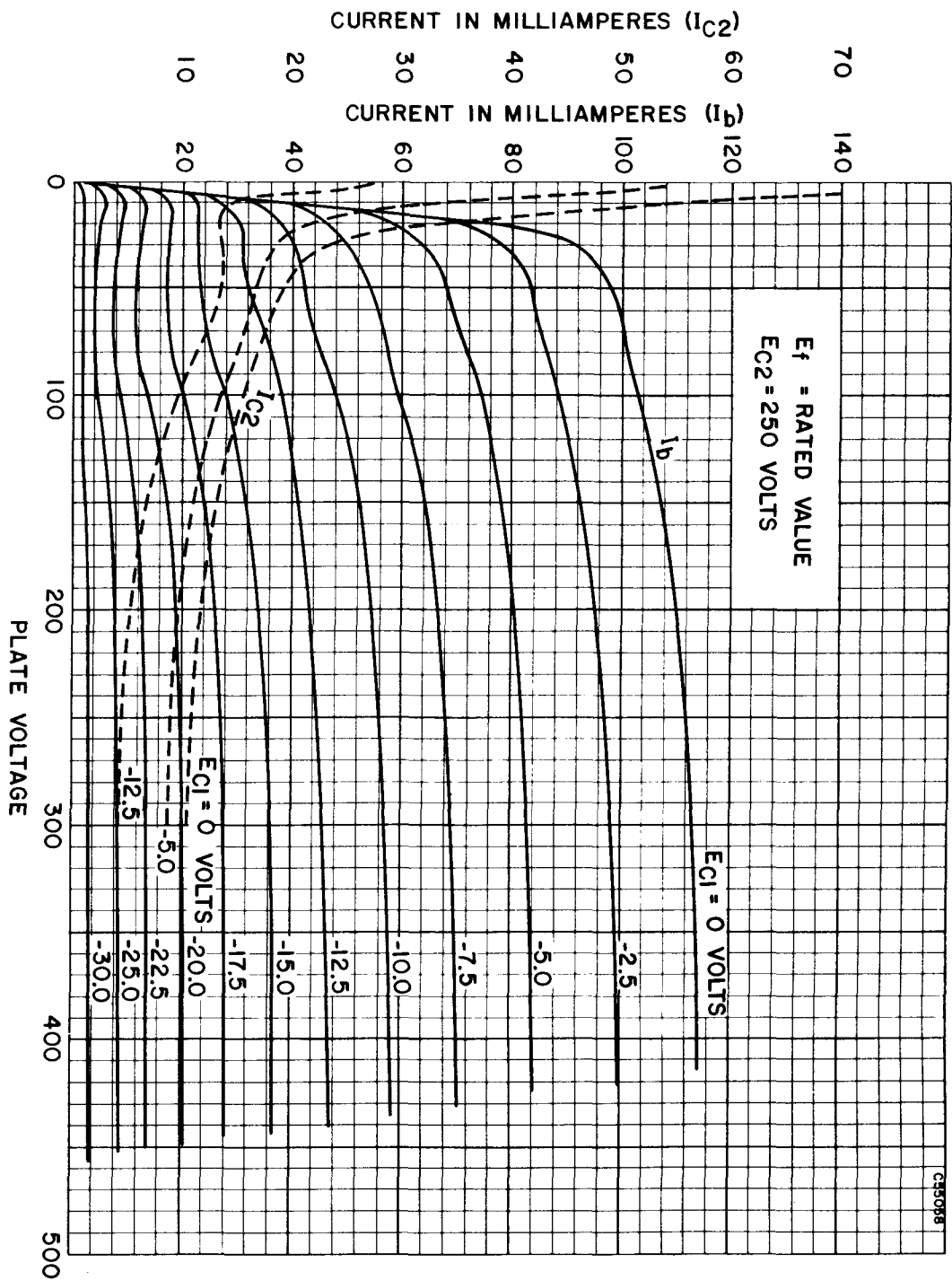
## NOTES:

1. For operating in 525 line, 30-frame system as described in "Standards of Good Engineering Practice for Television Broadcasting Stations, Federal Communications Commission". The duty cycle of the voltage pulse is not to exceed 15% of a scanning cycle.
2. In stages operating with a grid-leak bias, an adequate cathode bias resistor, or other suitable means, is required to protect the tube in the absence of excitation.

AVERAGE PLATE CHARACTERISTICS

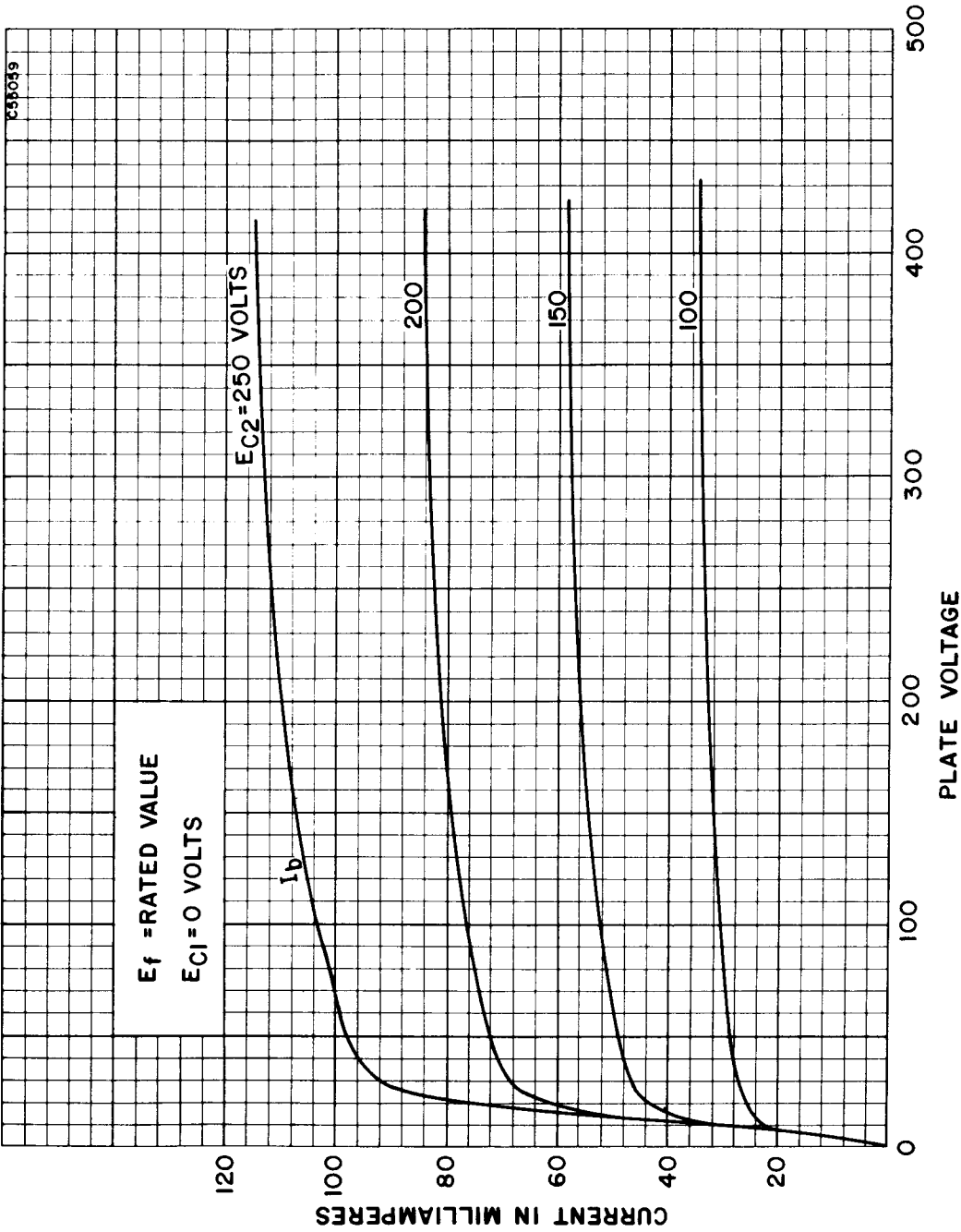


AVERAGE PLATE CHARACTERISTICS

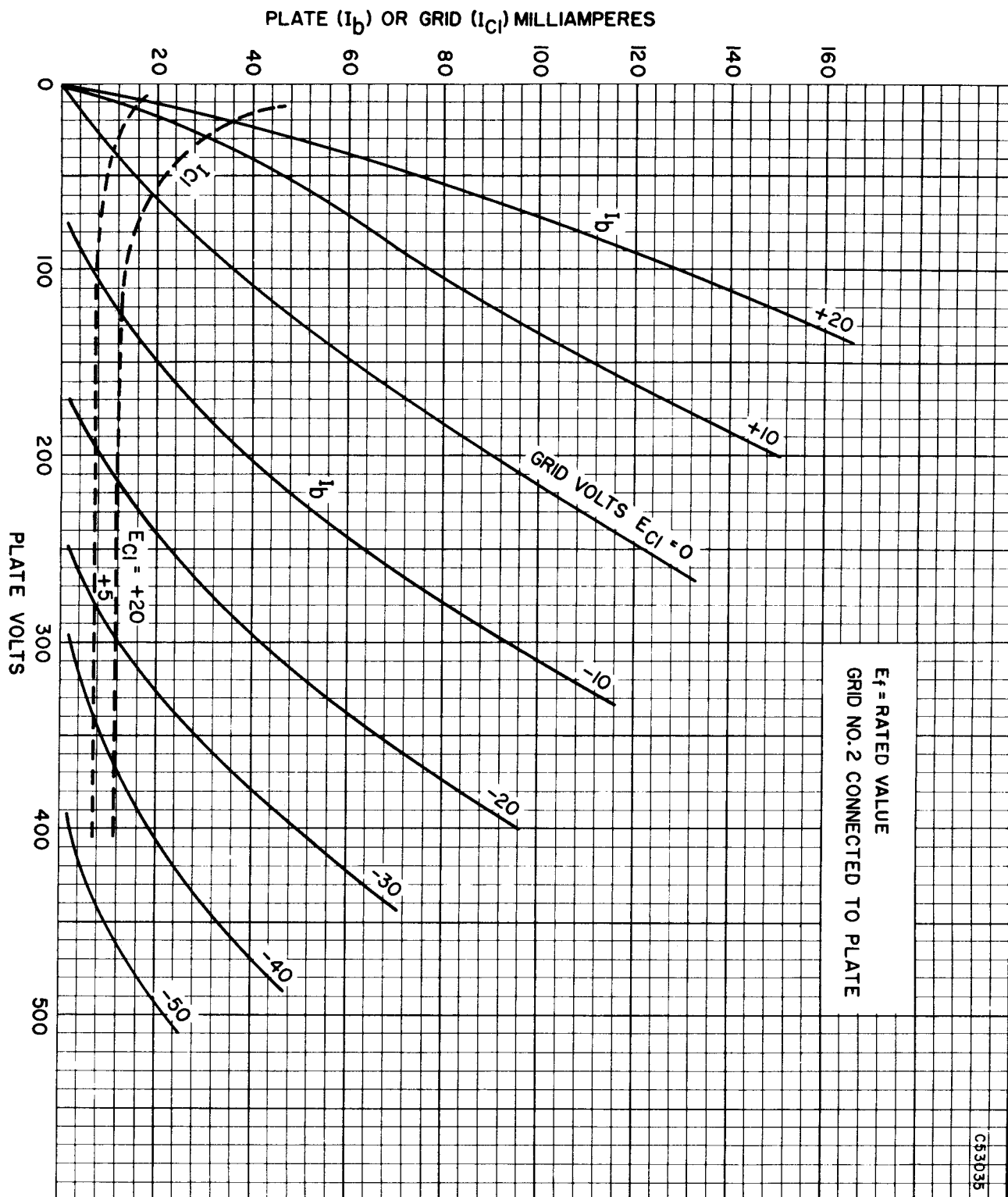


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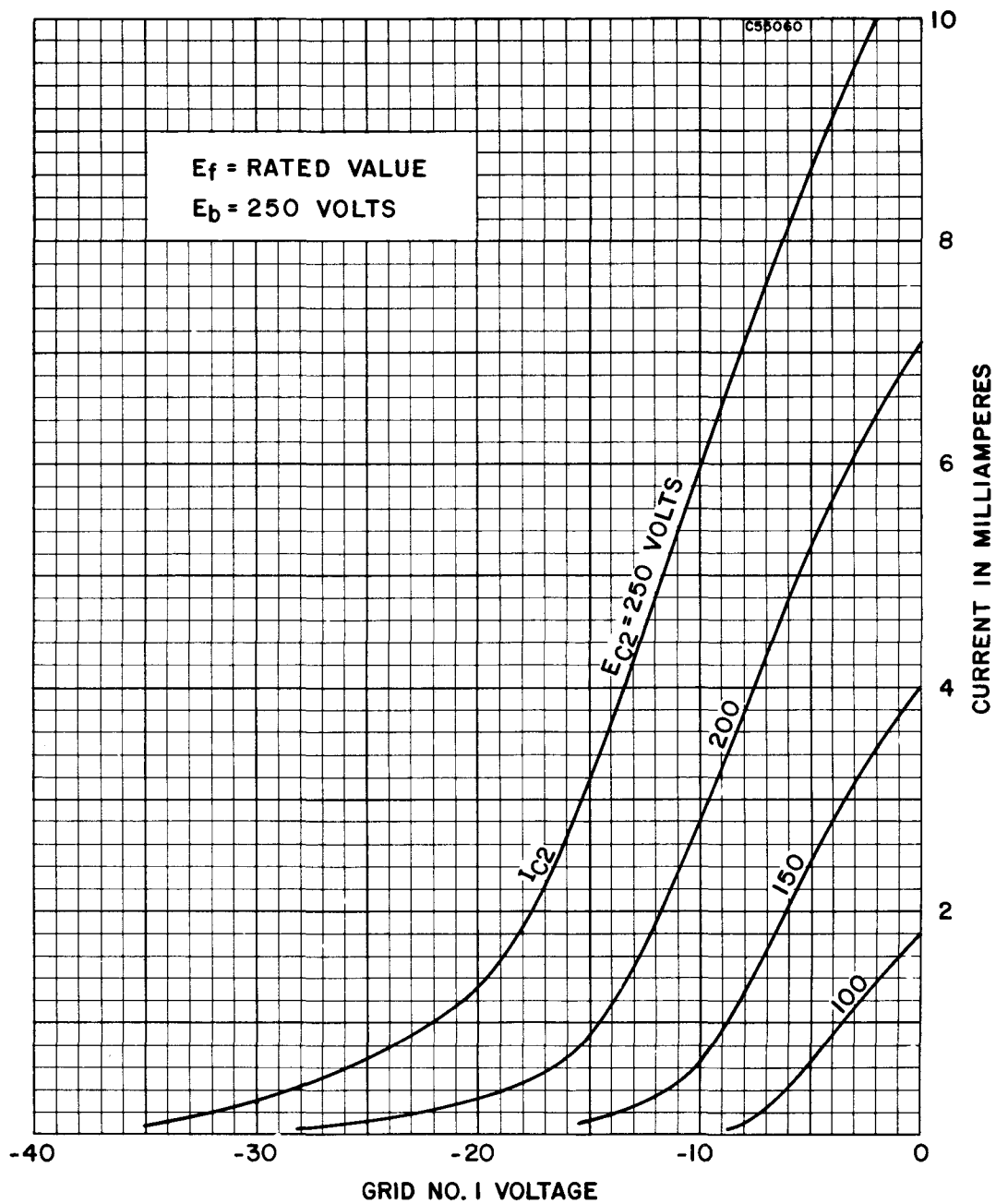
AVERAGE PLATE CHARACTERISTICS



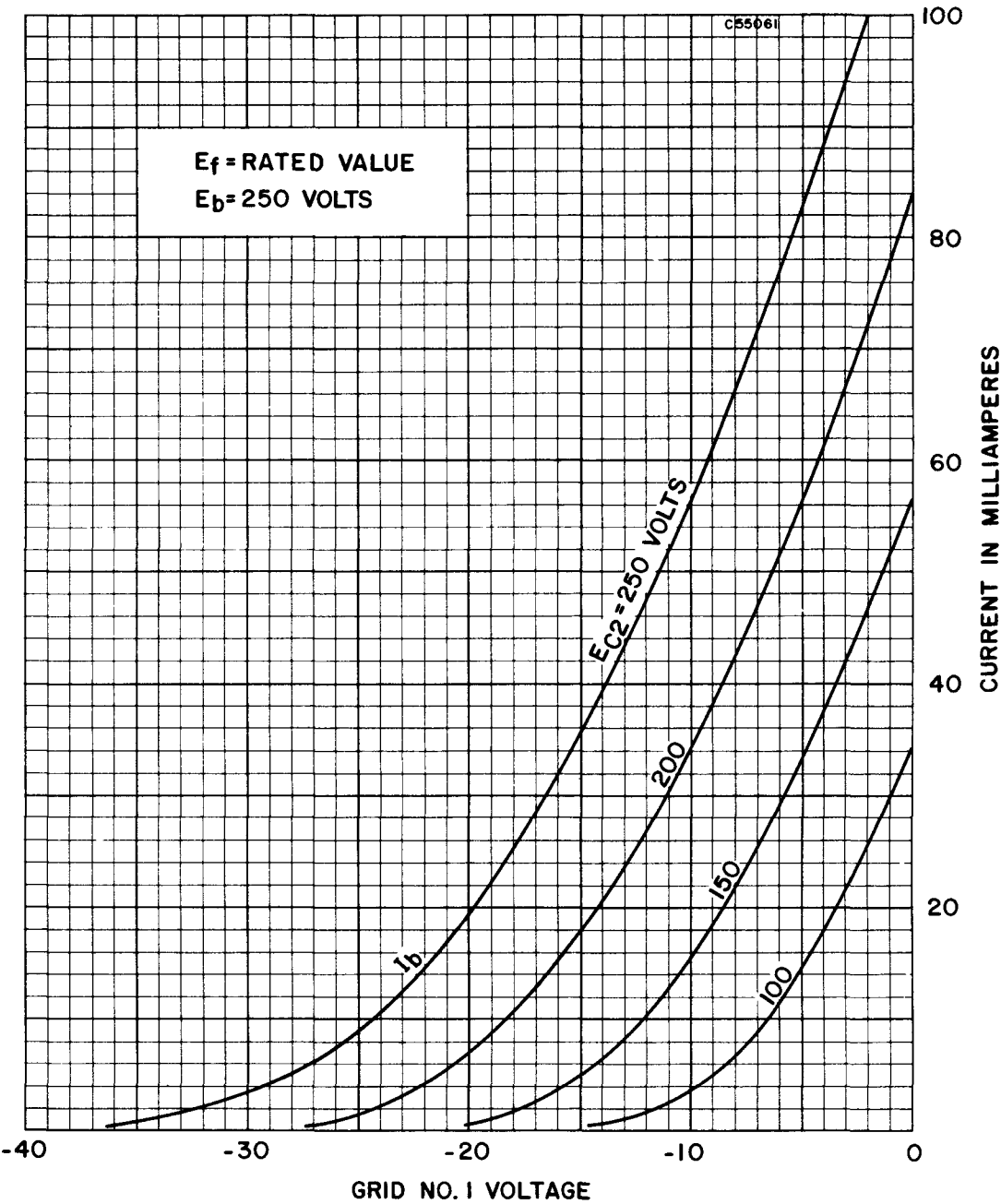
AVERAGE PLATE CHARACTERISTICS  
(TRIODE CONNECTED)



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



OPERATION CHARACTERISTICS

