

## MECHANICAL DATA

|                             |                               |
|-----------------------------|-------------------------------|
| Bulb . . . . .              | T-6 1/2                       |
| Base . . . . .              | E9-1, Miniature Button, 9-Pin |
| Outline . . . . .           | 6-3                           |
| Basing . . . . .            | 9DX                           |
| Cathode . . . . .           | Coated Unipotential           |
| Mounting Position . . . . . | Any                           |

## ELECTRICAL DATA

### HEATER CHARACTERISTICS

|                                                   | 6BA8A | 8BA8A      |      |
|---------------------------------------------------|-------|------------|------|
| Heater Voltage . . . . .                          | 6.3   | 8.4 Volts  |      |
| Heater Current . . . . .                          | 600   | 450 Volts  |      |
| Heater Warm-up Time <sup>1</sup> . . . . .        | 11    | 11 Seconds |      |
| Heater-Cathode Voltage (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

| Triode                            | Shielded <sup>2</sup> | Unshielded           |
|-----------------------------------|-----------------------|----------------------|
| Grid to plate: (g to p) . . . . . | 2.2                   | 2.2 $\mu\mu\text{f}$ |
| Input: g to (h + k) . . . . .     | 2.7                   | 2.5 $\mu\mu\text{f}$ |
| Output: p to (h + k) . . . . .    | 1.9                   | 0.4 $\mu\mu\text{f}$ |

### Pentode

|                                          |      |                       |
|------------------------------------------|------|-----------------------|
| Grid to plate: (g1 to p) . . . . .       | 0.03 | 0.04 $\mu\mu\text{f}$ |
| Input: g1 to (h+k+g2+g3+ I.S.) . . . . . | 10.0 | 10.0 $\mu\mu\text{f}$ |
| Output: p to (h+k+g2+g3+ I.S.) . . . . . | 4.5  | 3.6 $\mu\mu\text{f}$  |

### Coupling

|                                              |       |                        |
|----------------------------------------------|-------|------------------------|
| Pentode Grid No. 1 to Triode Plate . . . . . | 0.003 | 0.006 $\mu\mu\text{f}$ |
| Pentode Plate to Triode Grid . . . . .       | 0.006 | 0.016 $\mu\mu\text{f}$ |
| Pentode Plate to Triode Plate . . . . .      | 0.023 | 0.150 $\mu\mu\text{f}$ |

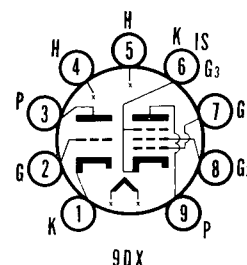
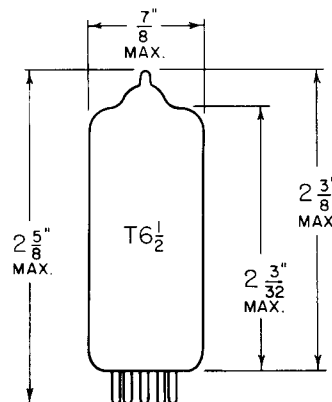
### RATINGS (Design Center Values)

|                                       | Triode           | Pentode     |      |
|---------------------------------------|------------------|-------------|------|
| Plate Voltage . . . . .               | 300              | 300 Volts   | Max. |
| Grid No. 2 Supply Voltage . . . . .   |                  | 300 Volts   | Max. |
| Grid No. 2 Voltage . . . . .          | See Rating Chart |             |      |
| Plate Dissipation . . . . .           | 2.0              | 3.25 Watts  | Max. |
| Grid No. 2 Dissipation . . . . .      |                  | 1.0 Watt    | Max. |
| Negative Grid No. 1 Voltage . . . . . |                  | 50 Volts    | Max. |
| Positive Grid No. 1 Voltage . . . . . |                  | 0 Volts     | Max. |
| Grid No. 1 Circuit Resistance         |                  |             |      |
| Fixed Bias . . . . .                  | 0.5              | 0.25 Megohm | Max. |
| Self Bias . . . . .                   | 1.0              | 1.0 Megohm  | Max. |

## QUICK REFERENCE DATA

The Sylvania Type 6BA8A is a miniature, medium mu triode and sharp cutoff pentode. The triode section is intended for use as a sync separator and the pentode section as a video amplifier. The pentode section features a controlled plate knee characteristic. The 6BA8A incorporates a 600 ma heater and controlled heater warm-up time for operation in television receivers employing a series heater string.

The 8BA8A is identical to the 6BA8A except for heater characteristics.



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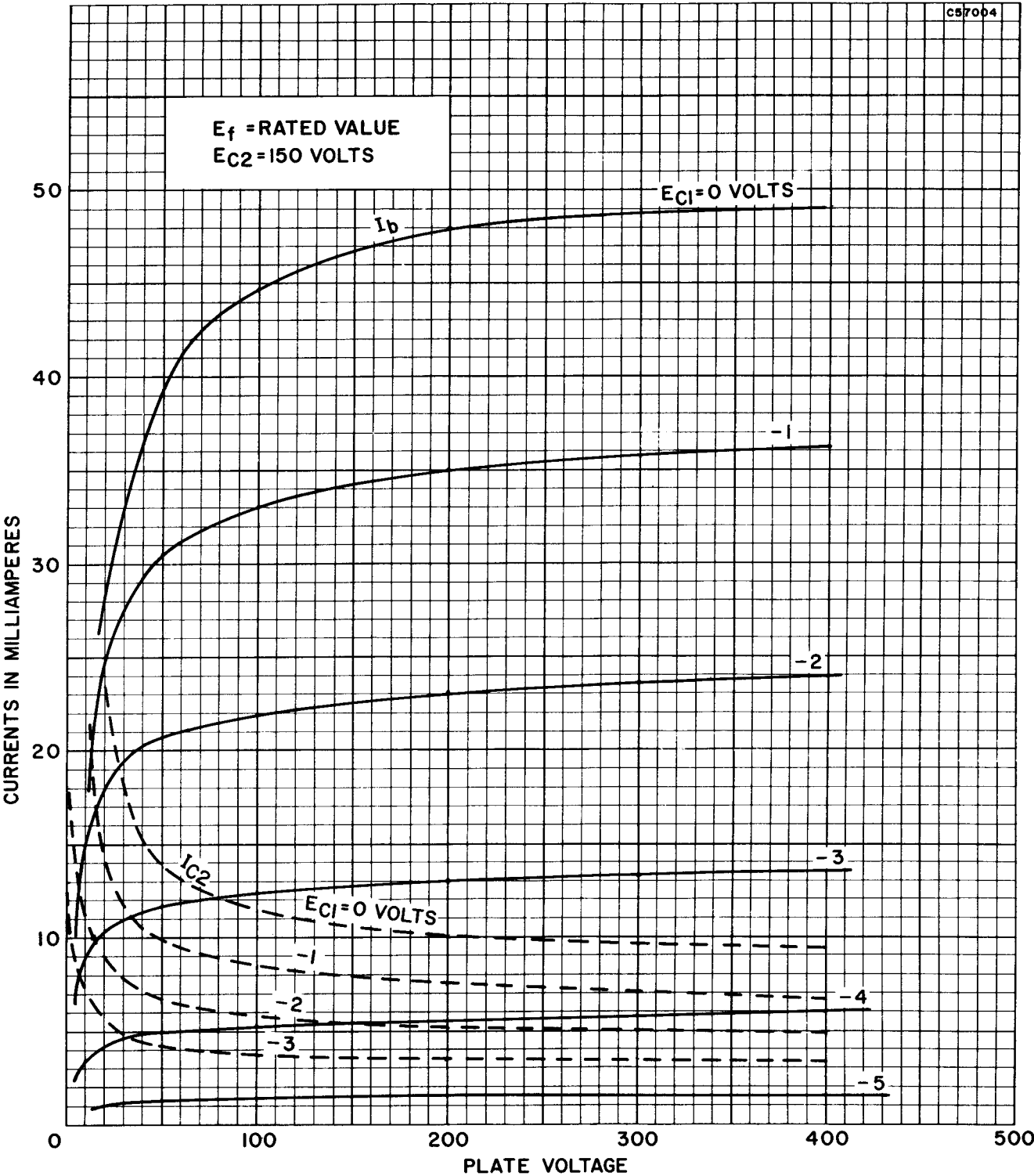
CHARACTERISTICS AND TYPICAL OPERATION

| Class A <sub>1</sub> Amplifier                                     | Triode | Pentode         |
|--------------------------------------------------------------------|--------|-----------------|
| Plate Voltage . . . . .                                            | 200    | 200 Volts       |
| Grid No. 2 Voltage . . . . .                                       |        | 150 Volts       |
| Grid No. 1 Voltage . . . . .                                       | -8     | 0 Volts         |
| Cathode Bias Resistor . . . . .                                    |        | 180 Ohms        |
| Plate Current . . . . .                                            | 8.0    | 13 Ma           |
| Grid No. 2 Current . . . . .                                       |        | 3.5 Ma          |
| Transconductance . . . . .                                         | 2700   | 9000 $\mu$ mhos |
| Amplification Factor . . . . .                                     | 18     |                 |
| Plate Resistance (approx.) . . . . .                               | 6700   | 400,000 Ohms    |
| Grid No. 1 Voltage for Ib = 10 $\mu$ a (approx.) . . . . .         | -16    | -10 Volts       |
| Zero Bias: With Eb = 65 V, and Ec2 = 150 V; (Instantaneous Values) |        |                 |
| Plate Current . . . . .                                            |        | 42 Ma           |
| Grid No. 2 Current . . . . .                                       |        | 12.5 Ma         |

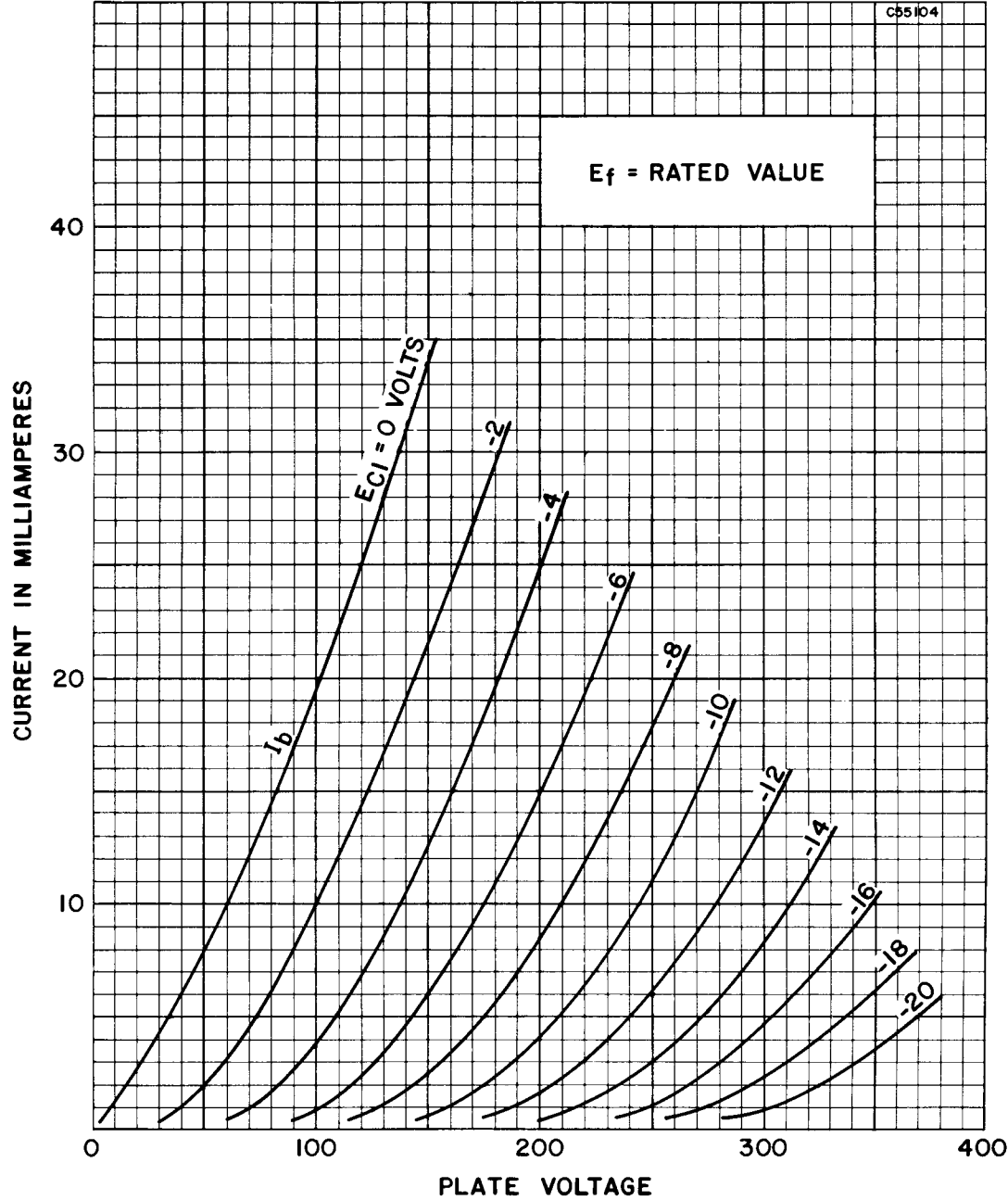
NOTES:

1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times rated heater voltage divided by rated heater current.
2. Shield No. 315 tied to cathode base pin of section under test.

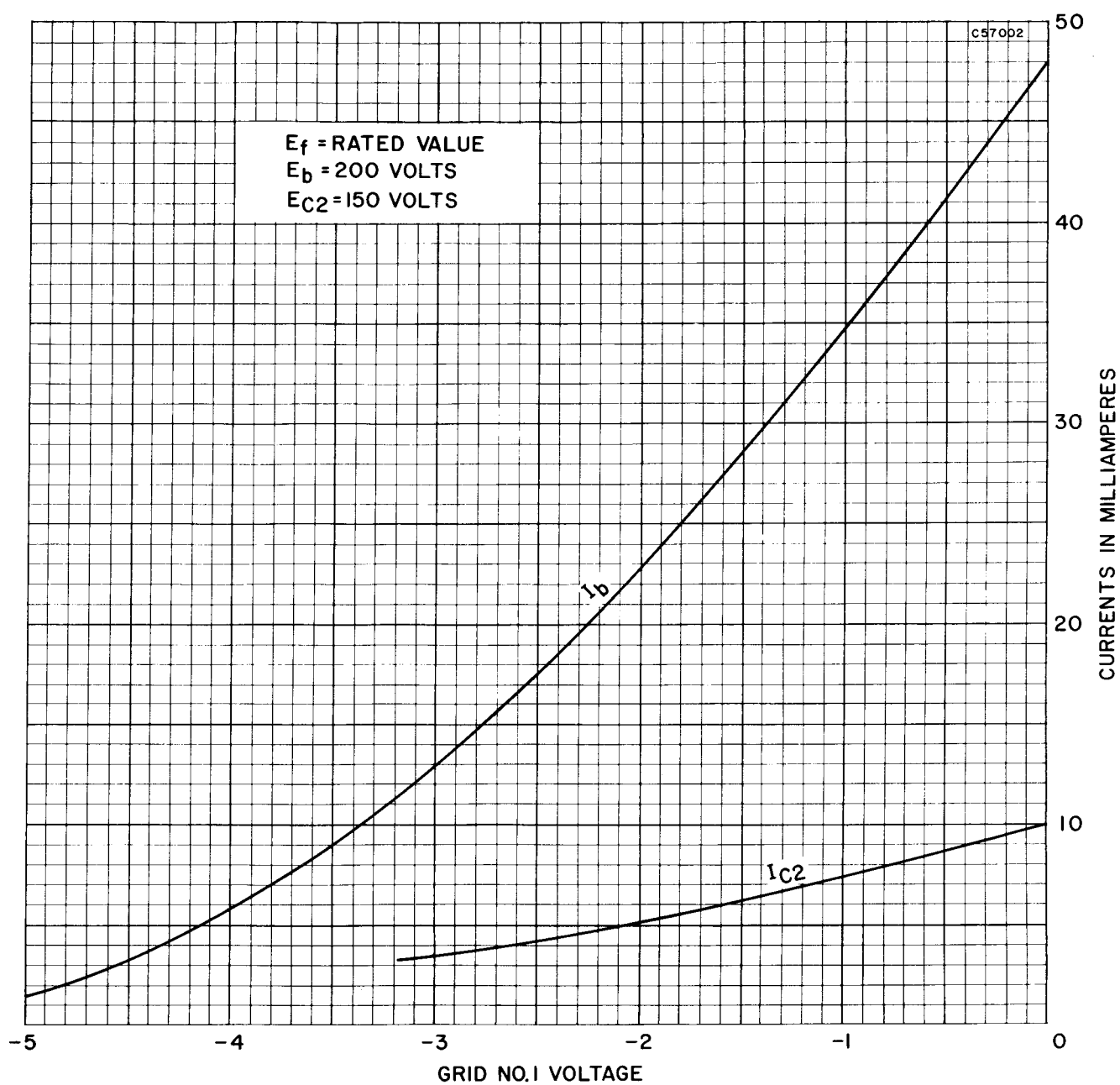
AVERAGE PLATE CHARACTERISTICS  
(PENTODE SECTION)



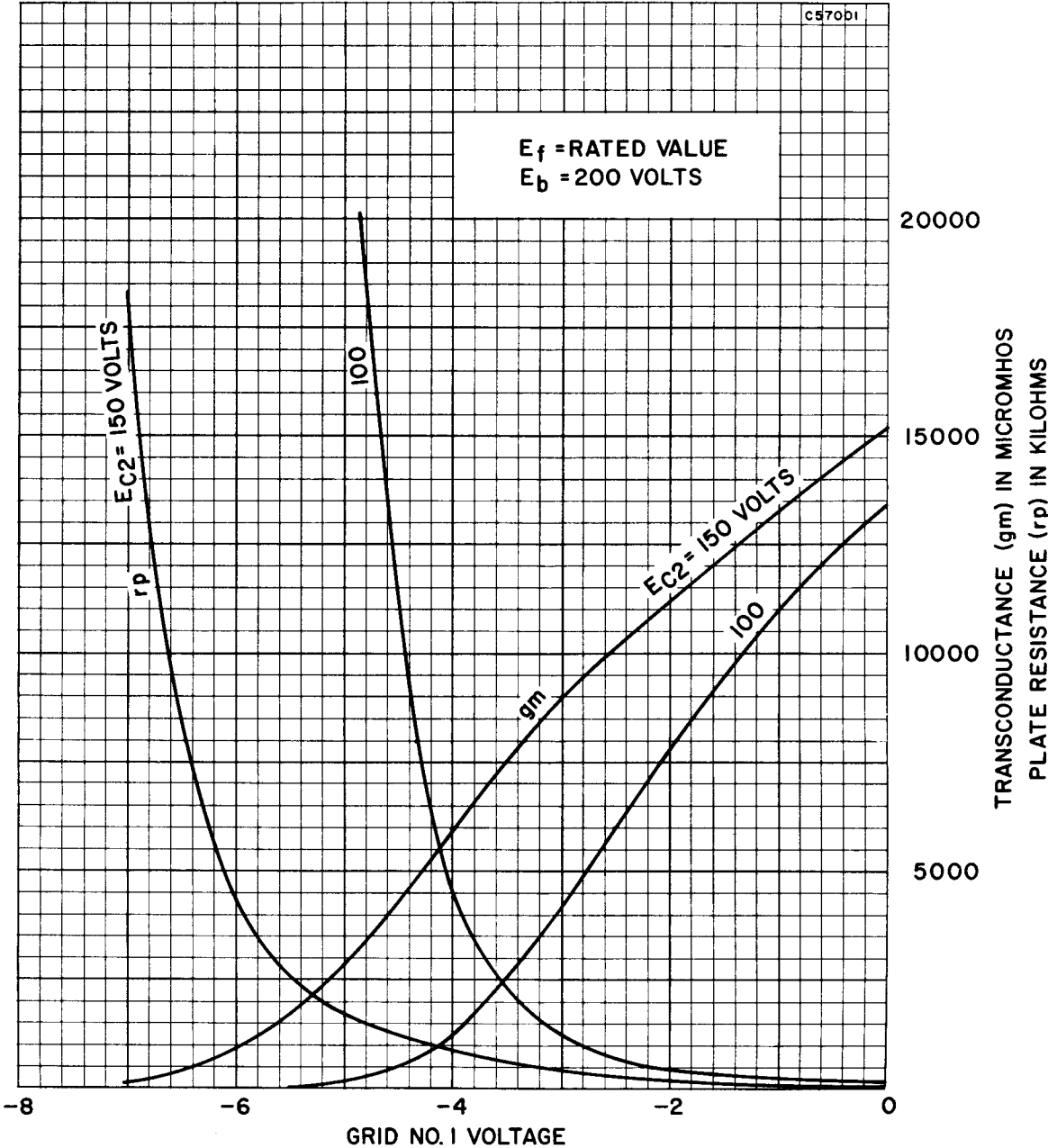
AVERAGE PLATE CHARACTERISTICS  
(TRIODE SECTION)



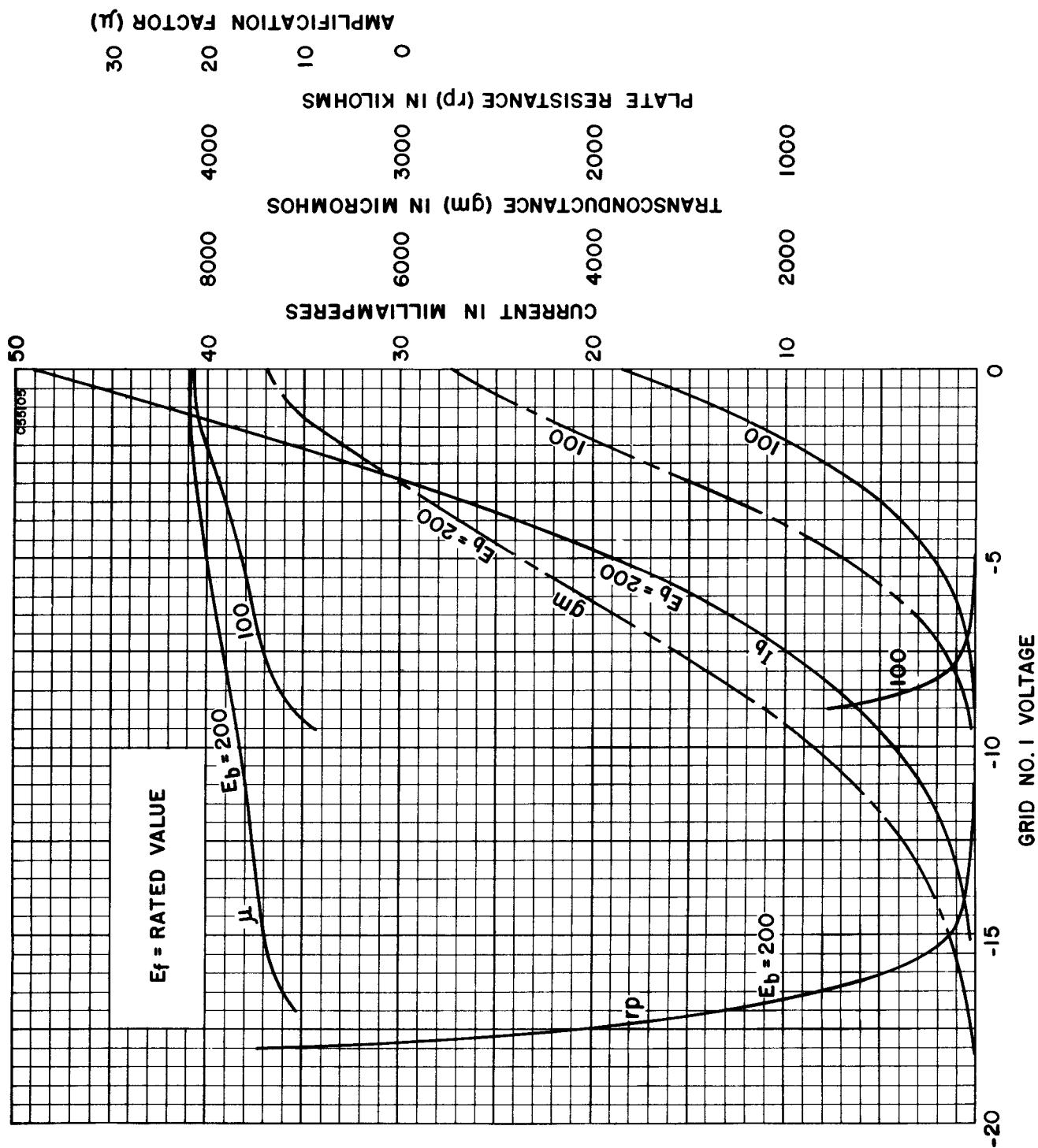
AVERAGE TRANSFER CHARACTERISTICS  
(PENTODE SECTION)



AVERAGE TRANSFER CHARACTERISTICS  
(PENTODE SECTION)



AVERAGE TRANSFER CHARACTERISTICS  
(TRIODE SECTION)



RATING CHART

