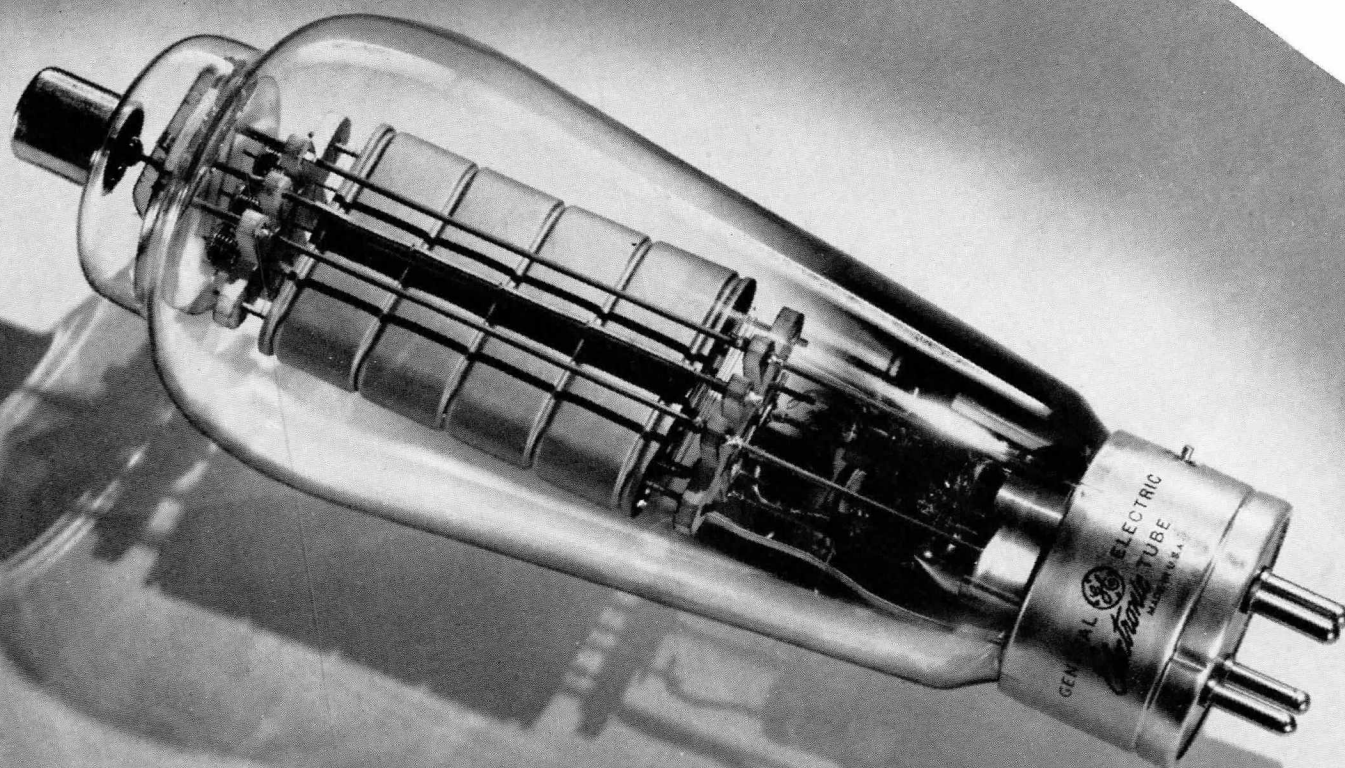




TRIODE

DESCRIPTION

The GL-169 is a three-electrode transmitting tube designed for use as a Class B and C radio-frequency power amplifier, Class C oscillator or as a Class B

modulator. This tube can be operated at maximum ratings at frequencies as high as 15 megacycles and at frequencies up to 35 megacycles at reduced ratings.

TECHNICAL INFORMATION

These data are for reference only. For design information refer to specifications.

GENERAL CHARACTERISTICS

Number of electrodes	3
Electrical	
Cathode—Filamentary	
Voltage	10 volts
Current	9.6 amperes
Average characteristics, $E_b = 2000$, $I_b = 100$ ma $E_f = 10$ a-c	
Grid voltage	-4 volts
Amplification factor	85
Grid-plate transconductance, $I_b = 100$ ma	7500 micromhos
Direct interelectrode capacitances	
Grid-plate	19 micromicrofarads
Grid-filament	11.5 micromicrofarads
Plate-filament	4.7 micromicrofarads
Frequency for maximum ratings	15 megacycles

GENERAL ELECTRIC

Electronic
TUBE

TECHNICAL INFORMATION (CONT'D)

Mechanical

Type of cooling	Convection
Maximum ambient temperature	60 centigrade
Net weight, approx	1 pound
Shipping weight, approx	3 pounds
Mounting position	vertical, base up or down—horizontal, filament in vertical plane

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

CLASS B AUDIO-FREQUENCY POWER AMPLIFIER (TWO TUBES)

	Typical Operation		Maximum Ratings
D-c plate voltage	1500	2000	2000 volts
Max signal plate current, per tube†			0.400 ampere
D-c max signal plate input, per tube†			750 watts
Plate dissipation, per tube†			250 watts
A-c grid voltage	-12	-18	volts
Peak a-f grid input voltage	220	220	volts
Zero signal plate current	0.030	0.030	ampere
Max signal plate current	0.720	0.660	ampere
Max signal driving power, approx	8	6	watts
Effective load, plate-to-plate	4600	7000	ohms
Max signal plate power output, approx	720	900	watts

CLASS B RADIO-FREQUENCY POWER AMPLIFIER

Carrier conditions per tube for use with a maximum modulation factor of 1.0

D-c plate voltage	1500	2000	2000	volts
A-c grid voltage	-5	-10		volts
D-c plate current	0.240	0.190	0.300	ampere
Plate input			400	watts
Plate dissipation			250	watts
Peak r-f grid input voltage	110	110		volts
Driving power, § approx	5	3.5		watts
Plate power output, approx	120	130		watts

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR, PLATE-MODULATED

Carrier conditions per tube for use with a maximum modulation factor of 1.0

D-c plate voltage	1250	1500	1500	1500	volts
D-c grid voltage	-80	-100	-100	-400	volts
D-c plate current	0.360	0.360	0.400	0.400	ampere
D-c grid current, approx	0.045	0.040	0.045	0.100	ampere
Plate input				600	watts
Plate dissipation				150	watts
Peak r-f grid input voltage	210	230	240		volts
Driving power	9	8.5	10		watts
Plate power output	330	400	450		watts

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR

Key-down conditions per tube without modulation‡

D-c plate voltage	1500	2000	2000	2000	volts
D-c grid voltage	-50	-100	-100	-400	volts
D-c plate current	0.360	0.360	0.400	0.400	ampere
D-c grid current, approx	0.038	0.037	0.042	0.100	ampere
Plate input				800	watts
Plate dissipation				250	watts
Peak r-f grid input voltage, approx	170	230	240		volts
Driving power, approx	6	8	10		watts
Plate power output, approx	400	560	620		watts

† Averaged over any audio-frequency cycle.

§ At crest of audio-frequency cycle.

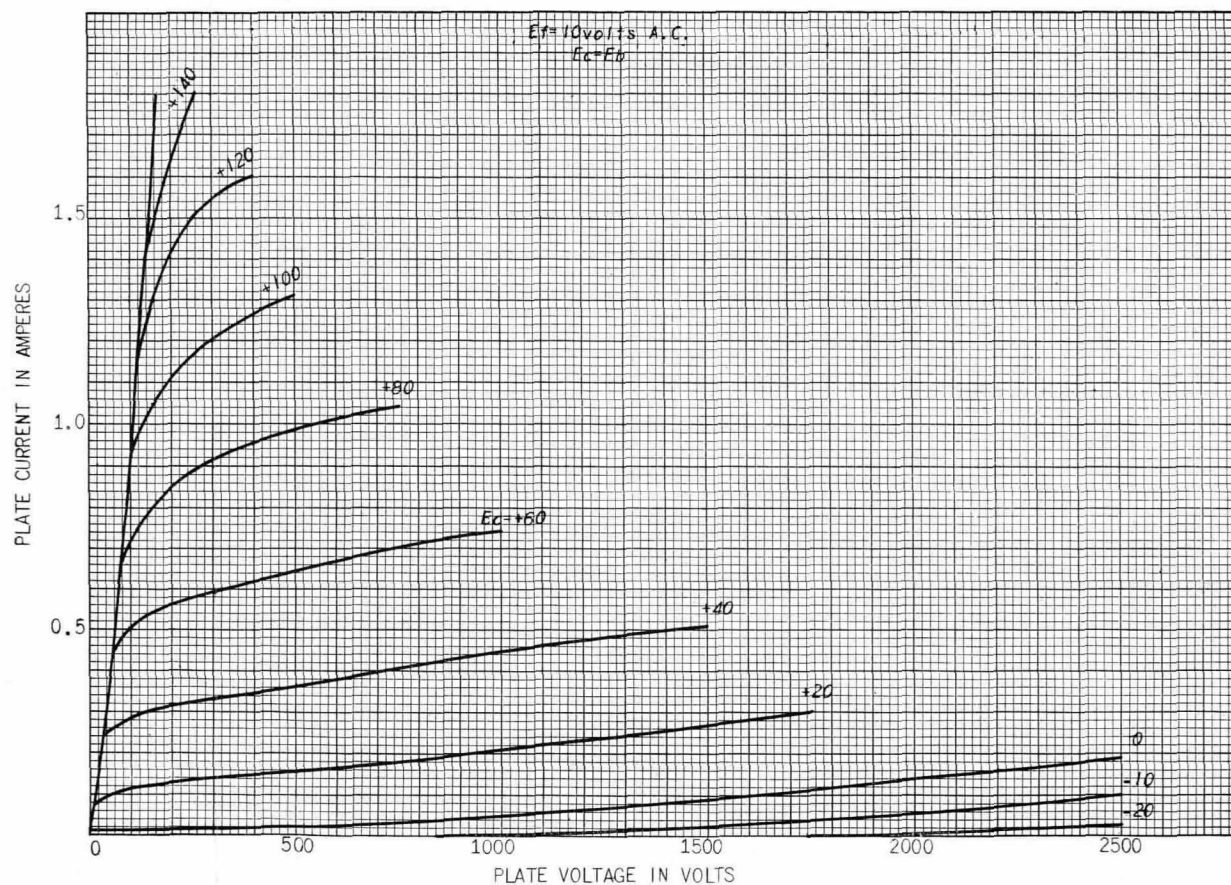
‡ Modulation, essentially negative, may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions.

APPLICATION NOTES

The GL-169 can be operated at frequencies as high as 15 megacycles. The tube may be operated at higher frequencies provided the maximum values of plate voltage and power input are reduced as the frequency is raised (other maximum ratings are the same as shown above). The tabulation below shows the highest percentage of maximum plate voltage and power input that can be used up to 35 megacycles for the various classes of service. Special attention should be given to adequate ventilation of the bulb at these frequencies.

Frequency	15	25	35 megacycles
Percentage of maximum rated plate voltage and plate input			
Class B	100	85	74 per cent
Class C plate modulated	100	75	50 per cent
Class C unmodulated	100	75	50 per cent

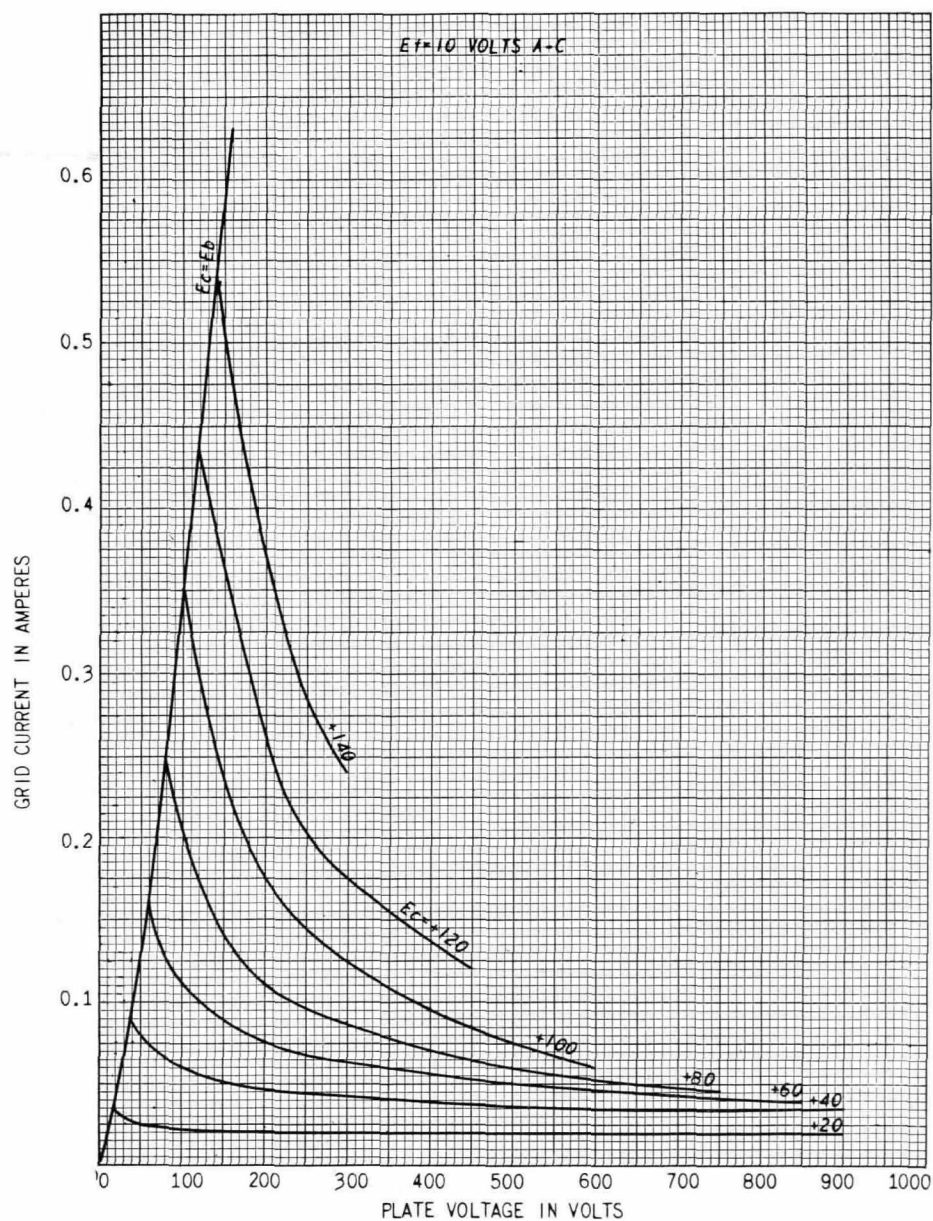
GL-169 AVERAGE PLATE CHARACTERISTICS



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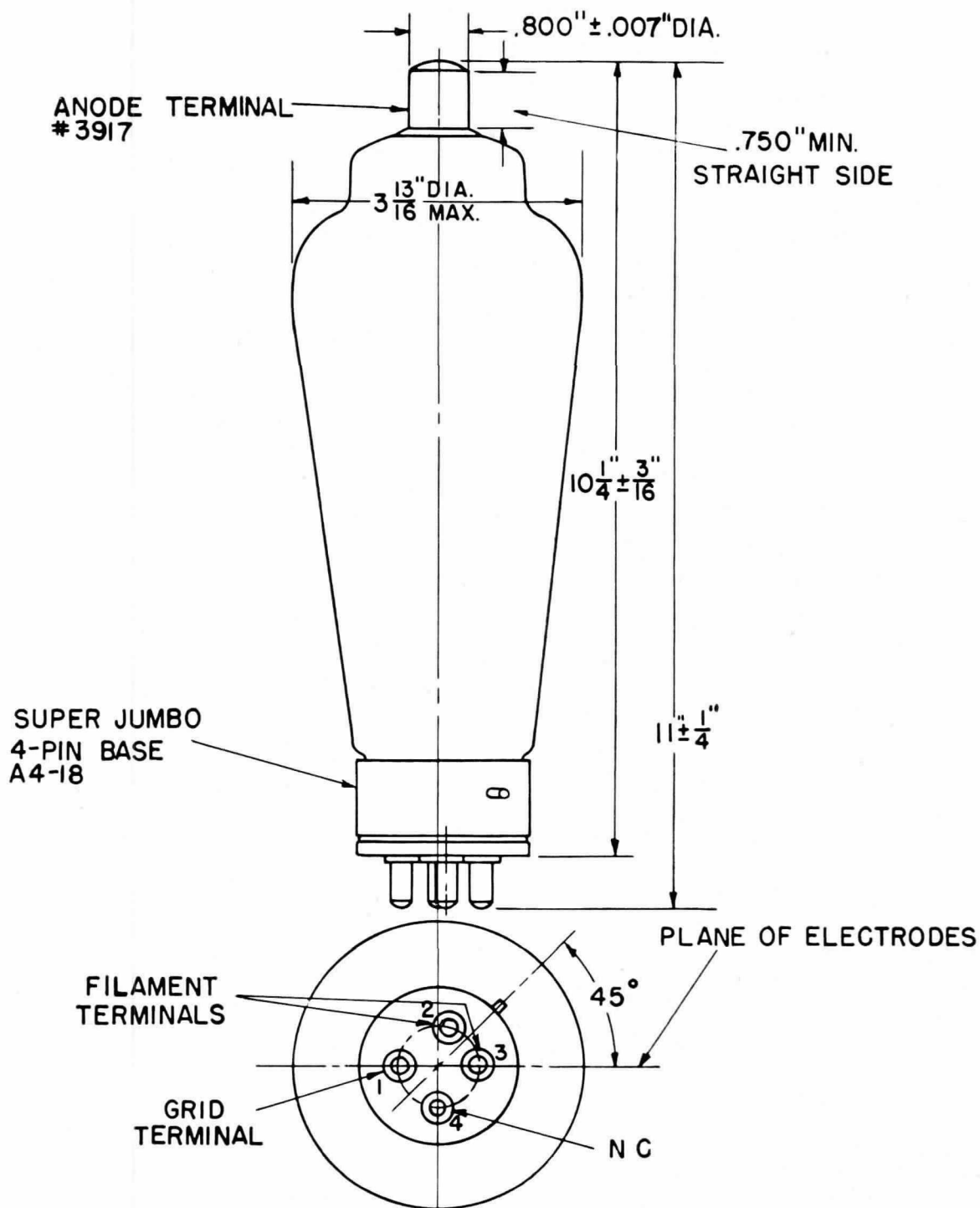
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GL-169 AVERAGE PLATE-GRID CHARACTERISTICS



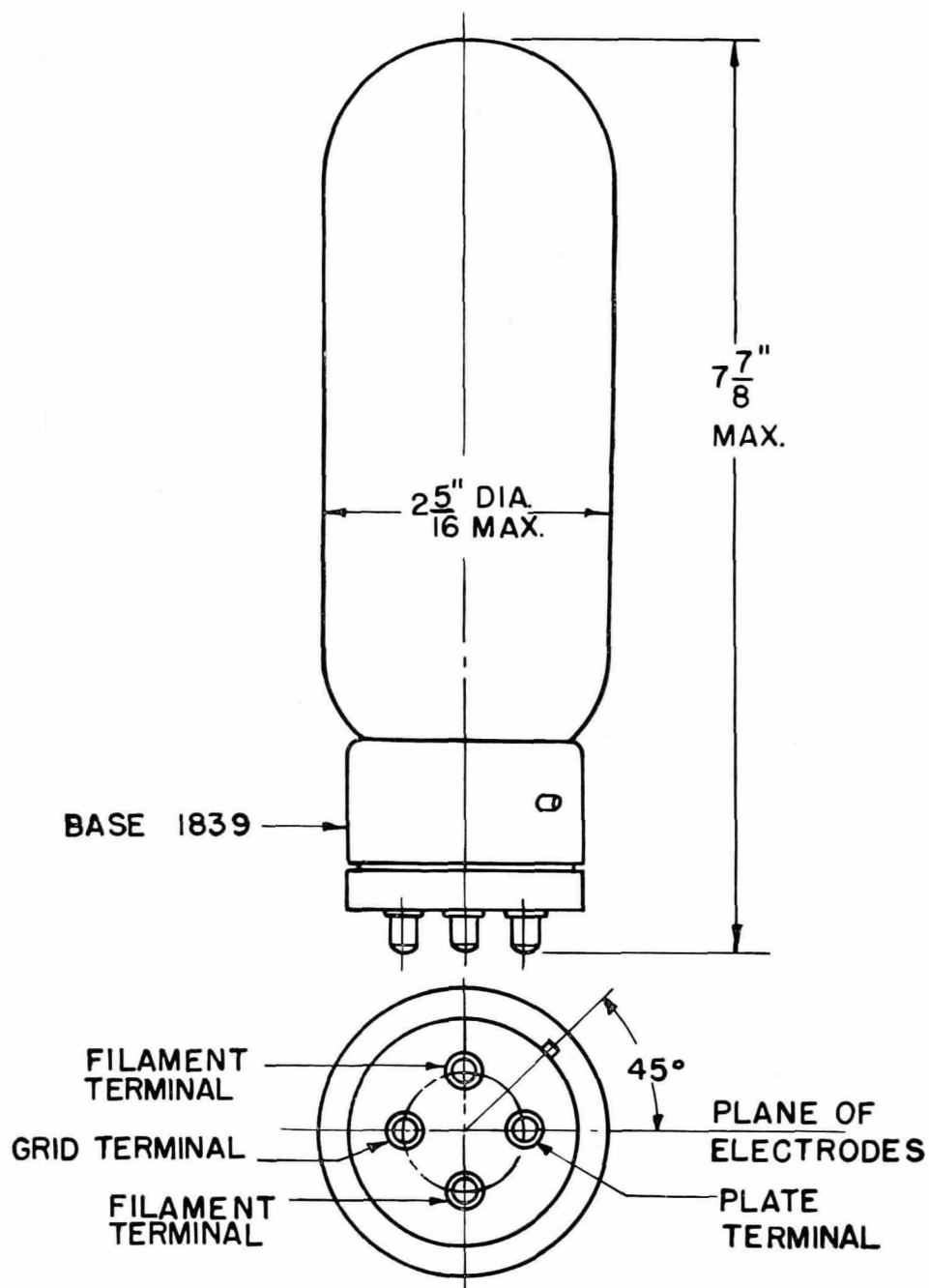
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GL-169 OUTLINE

Electronics Department
GENERAL ELECTRIC
Schenectady, N. Y.



K-4909036

GL-203-A OUTLINE

8-18-45

Electronics Department
GENERAL ELECTRIC
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