

for information on tubes
and semiconductors
for all applications.

ask **Amperex**®



Amperex® electronic corp. 230 Duffy Avenue, Hicksville, L. I., N. Y.

AMPEREX TUBE TYPE 8117

TENTATIVE DATA

The 8117 is a dual tetrode tube designed for use as a high efficiency linear amplifier in single sideband systems. Each anode is capable of dissipating 30 watts continuously. The cathode is indirectly heated, oxide coated. Maximum ratings apply as indicated below up to 60 and 175 megacycles.

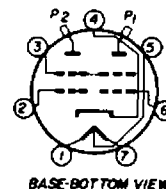
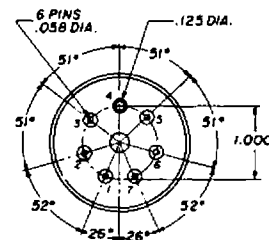
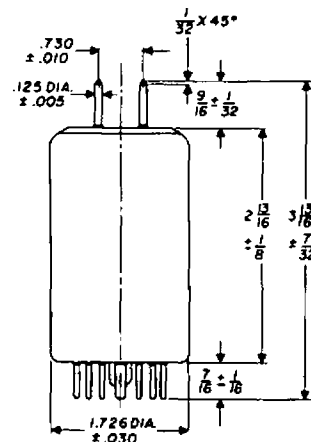
GENERAL CHARACTERISTICS

MECHANICAL

Mounting Position	Vertical, base up or down. Horizontal with anode pins in a horizontal plane.
Maximum Glass and Seal Temperatures*	250°C
Accessories	
Socket	Johnson 122-105 or equal
Net Weight, Approx.	2.5 ounces

1. Either forced air cooling or heat sink cooling may be used when the tube is operating at or near the maximum ratings. With forced air cooling it is necessary to cool both the lateral bulb surfaces as well as the plate pin seals by directing the flow of air toward the top and sides of the bulb. In most cases approximately 20 cfm is sufficient. However, regardless of the type of cooling being used, the degree of cooling should be determined by direct temperature measurement of both the seals and the bulb.

The temperature may be measured by means of temperature sensitive compound such as Tempilaq made by the Tempil Corporation, 11 West 25th Street, New York, New York.



- PIN 1 - HEATER
- PIN 2 - GRID NO. 1 OF UNIT NO. 2
- PIN 3 - GRID NO. 2
- PIN 4 - CATHODE B INTERNAL SHIELD
- PIN 5 - HEATER CENTER TAP
- PIN 6 - GRID NO. 1 OF UNIT NO. 1
- PIN 7 - HEATER
- P1 - PLATE OF UNIT NO. 1
- P2 - PLATE OF UNIT NO. 2

ELECTRICAL

Heater Voltage

Series 12.6 volts

Parallel 6.3 volts

Heater Current

Series 0.9 amps

Parallel 1.8 amps

Amplification Factor 7.0

$G_1 - G_2$ Mu at $E_b = 600$ volts

$E_{c2} = 250$ volts, $I_b = 40$ ma

Peak Cathode Current 700 ma

Direct Interelectrode Capacitances

	Per Unit	
	Min.	Max.
Grid to Plate		0.09 pf
Input	9.4	11.8 pf
Output	2.6	3.7 pf

**RF Power Amplifier and Oscillator
Class C Telegraphy**

Maximum Ratings, Absolute Values

	CCS
Frequency	60 mc max
D.C. Plate Voltage	850 volts max
D.C. Grid No. 2 Voltage	300 volts max
D.C. Grid No. 1 Voltage	-175 volts max
D.C. Plate Current	2 x 110 ma max
D.C. Grid No. 1 Current	2 x 5 ma max
Plate Input	2 x 90 watts max
Grid No. 2 Input	7 watts max
Plate Dissipation	2 x 30 watts max
Heater-Cathode Voltage	100 volts max

**RF Power Amplifier and Oscillator
Class C Telegraphy**

Maximum Ratings, Absolute Values

	CCS
Frequency	175 mc max
D.C. Plate Voltage	750 volts max
D.C. Grid No. 2 Voltage	300 volts max
D.C. Grid No. 1 Voltage	-175 volts max
D.C. Plate Current	2 x 110 ma max
D.C. Grid No. 1 Current	2 x 5 ma max
Plate Input	2 x 75 watts max
Grid No. 2 Input	7 watts max
Plate Dissipation	2 x 30 watts max
Heater-Cathode Voltage	100 volts max

Class AB₁ Grounded Cathode Linear RF Amplifier Single Sideband

Suppressed Carrier Operations

Maximum Ratings. Absolute Values Parallel Operation (Frequencies Up to 60 mc)

	CCS	ICAS
D.C. Plate Voltage	1000	1000 volts max
D.C. Grid No. 2 Voltage	360	360 volts max
D.C. Grid No. 1 Voltage	-175	-175 volts max
D.C. Plate Current	220	220 ma max
D.C. Grid No. 1 Current	10	10 ma max
Plate Input	200	220 watts max
Grid No. 2 Dissipation	7	8 watts max
Plate Dissipation	2x30	67.5 watts max

Typical Operation Single Tone and or Two Tone Operation

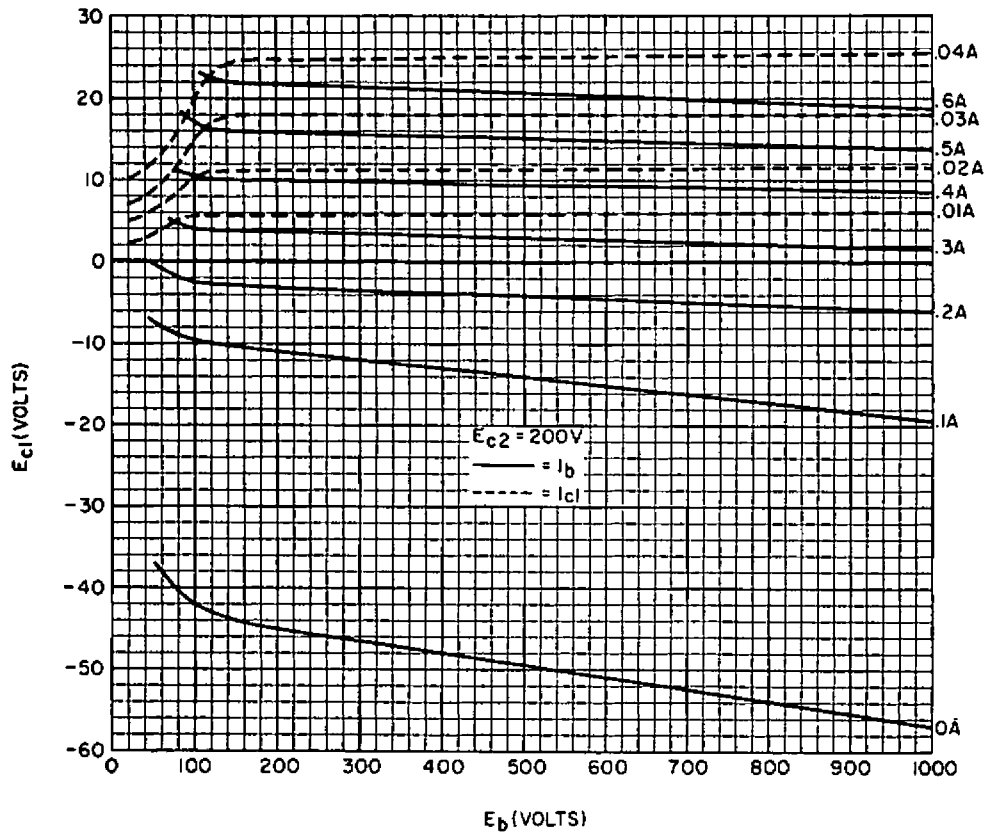
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Frequency	7	7	7	7 mc
D.C. Plate Voltage	1000	800	600	1000 volts
D.C. Grid No. 2 Voltage	250	250	250	270 volts
D.C. Grid No. 1 Voltage	-34	-34	-32.5	-36 volts
Zero Signal D.C. Plate Current	50	50	60	55 ma
Zero Signal D.C. Grid No. 2 Current	1.2	1.2	1.9	1 ma
Effective RF Load Resistance	3100	2300	1410	3000 ohms

Single Tone Modulation

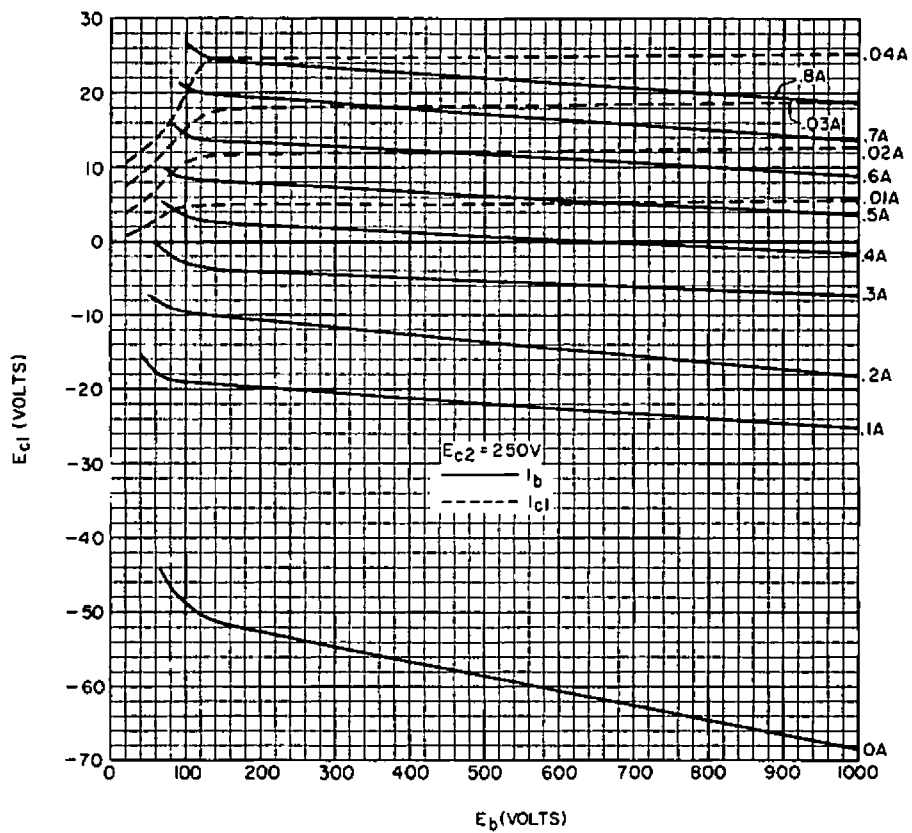
	CCS	CCS	CCS	ICAS
Frequency	7	7	7	7 mc
Max. Signal D.C. Plate Current	195	197	212	216 ma
Max. Signal D.C. Grid No. 2 Current	26	26	25	25 ma
Max. Signal D.C. Grid No. 1 Current	.01	.01	.008	.05 ma
Max. Signal Peak RF Grid Voltage	34	34	32.5	36 volts
Max. Signal Plate Power Output	141	112	76	158 watts

Two Tone Modulation

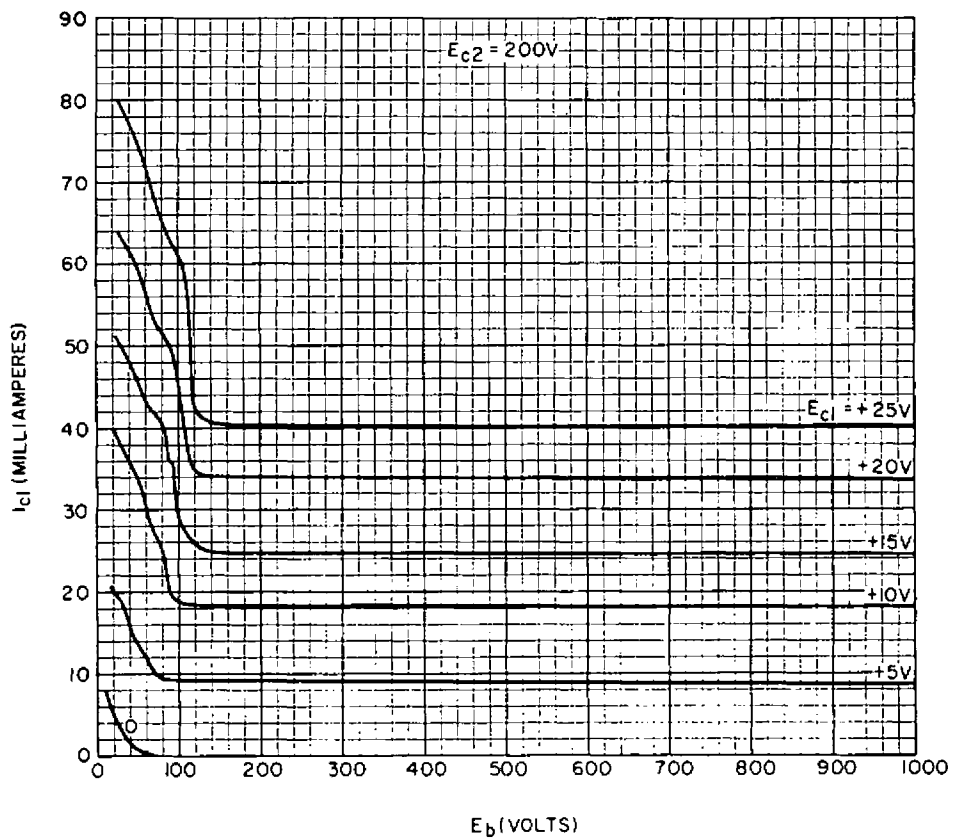
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Frequency	7	7	7	7 mc
Average D.C. Plate Current	131	130	144	144 ma
Average D.C. Grid No. 2 Current	11.5	12.5	13.5	13 ma
Average D.C. Grid No. 1 Current	-	-	-	.014 ma
Max. Resultant Peak RF Grid Voltage	34	34	32.5	36 volts
Average Plate Power Output	70.5	56	38	79 watts
Peak Envelope Plate Power Output	141	112	76	158 watts
3rd Order Intermodulation Distortion	-30	-30	-30	-30 db
5th Order Intermodulation Distortion	-	-	-	-40 db



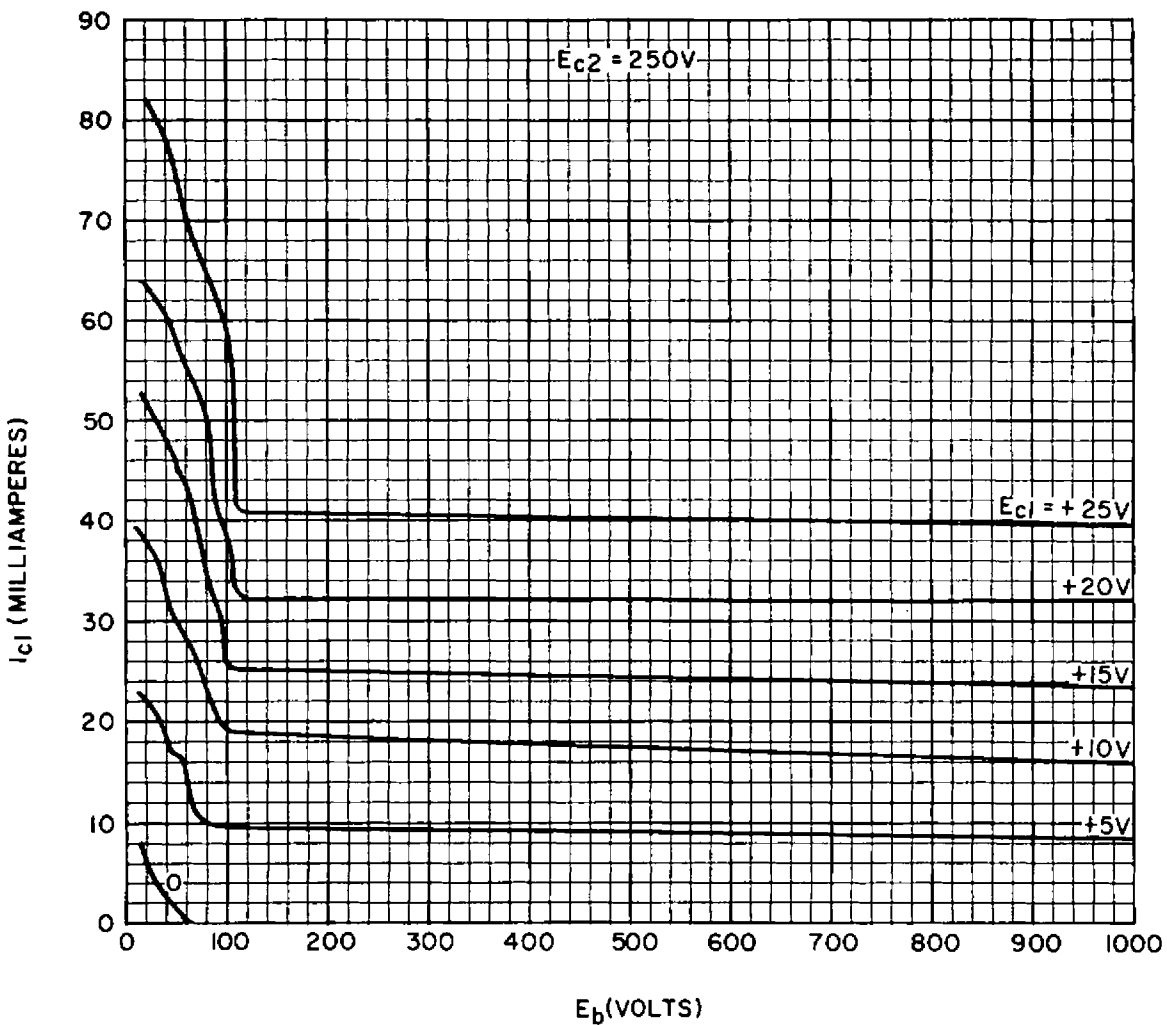
CONSTANT CURRENT CHARACTERISTICS



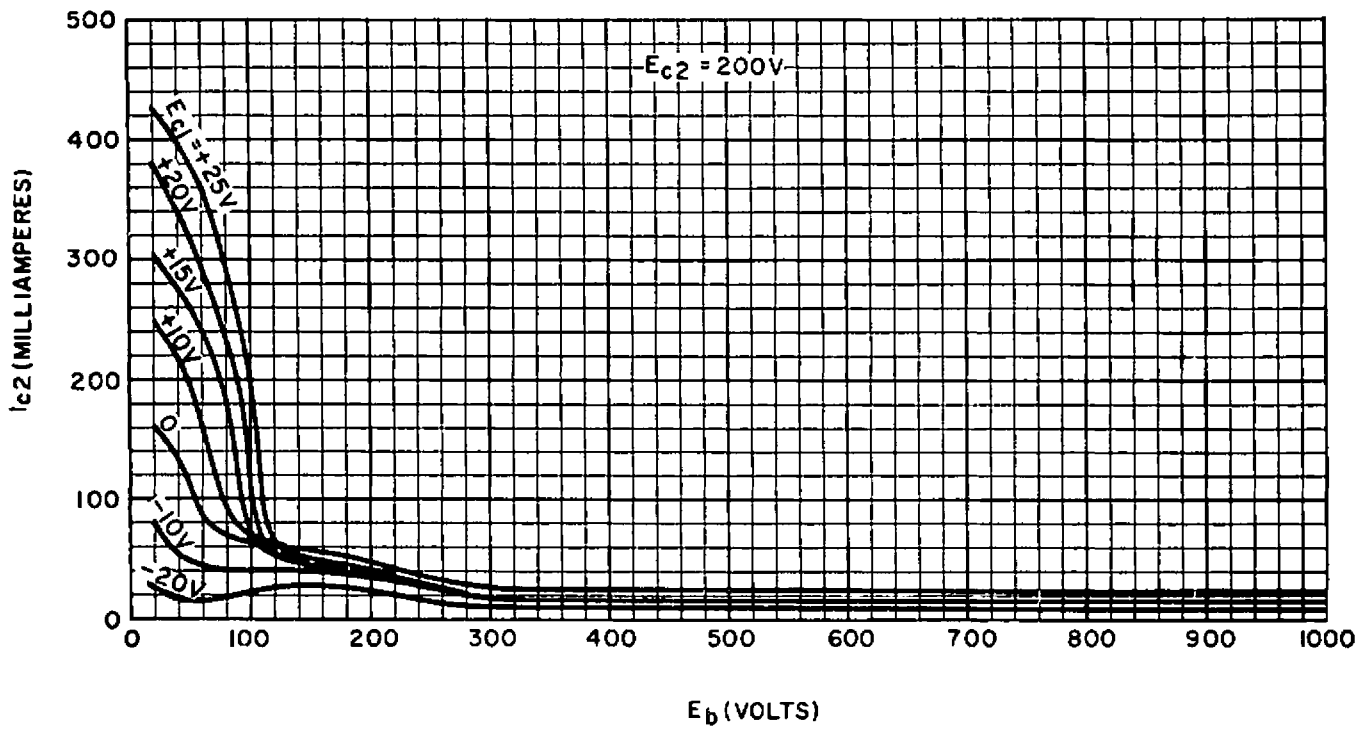
CONSTANT CURRENT CHARACTERISTICS



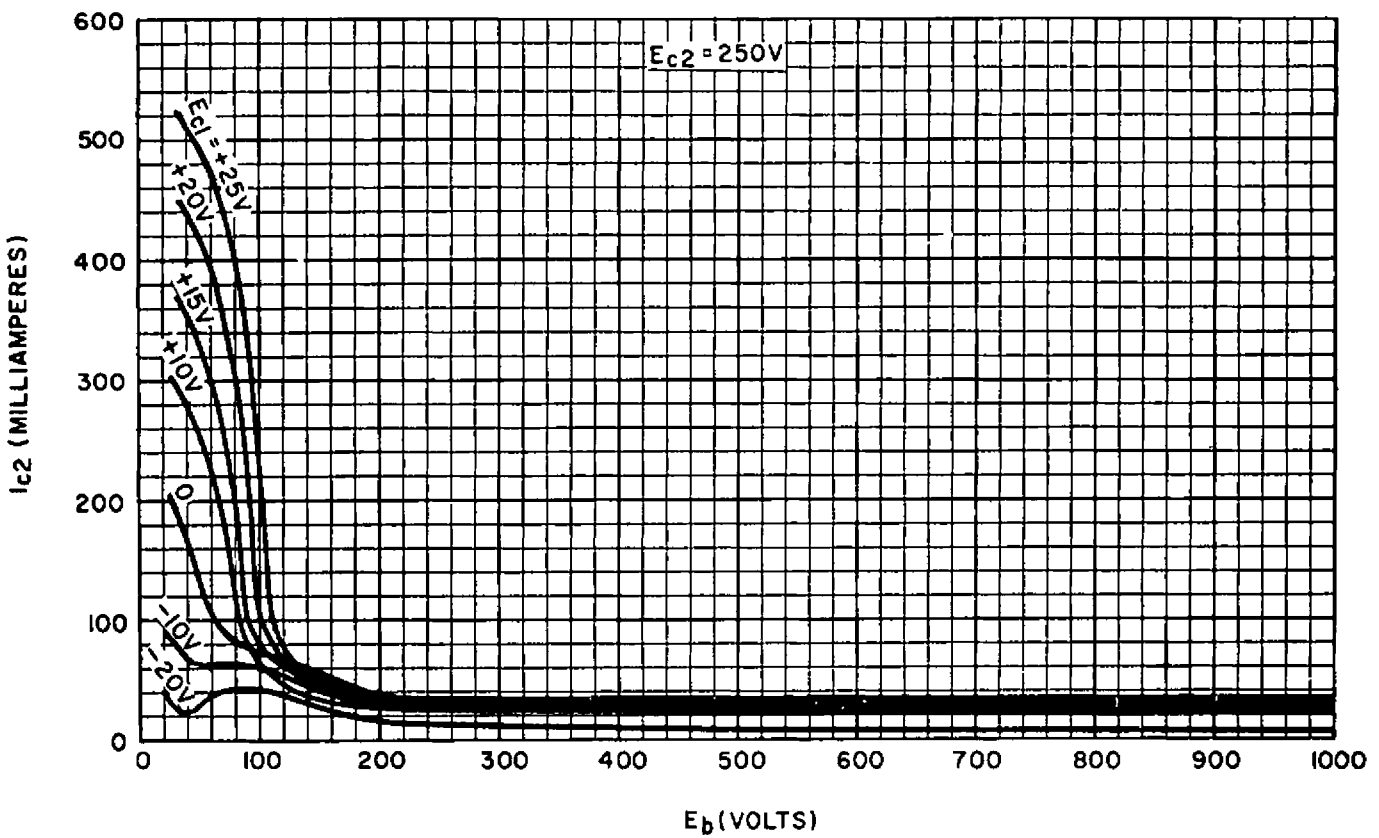
CONTROL GRID CHARACTERISTICS



CONTROL GRID CHARACTERISTICS



SCREEN GRID CHARACTERISTICS



SCREEN GRID CHARACTERISTICS