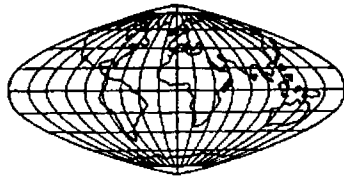


ask **Amperex**®



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

# AMPEREX TUBE TYPE 8177

## TENTATIVE DATA

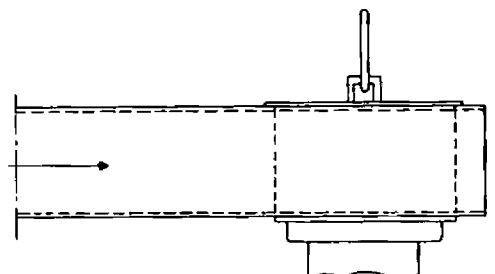
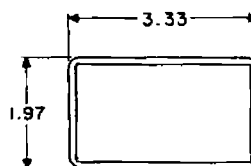
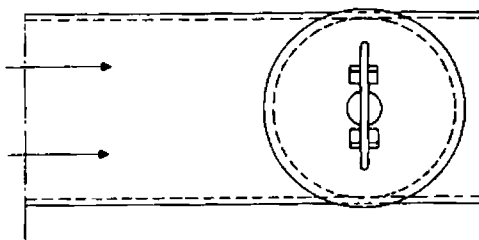
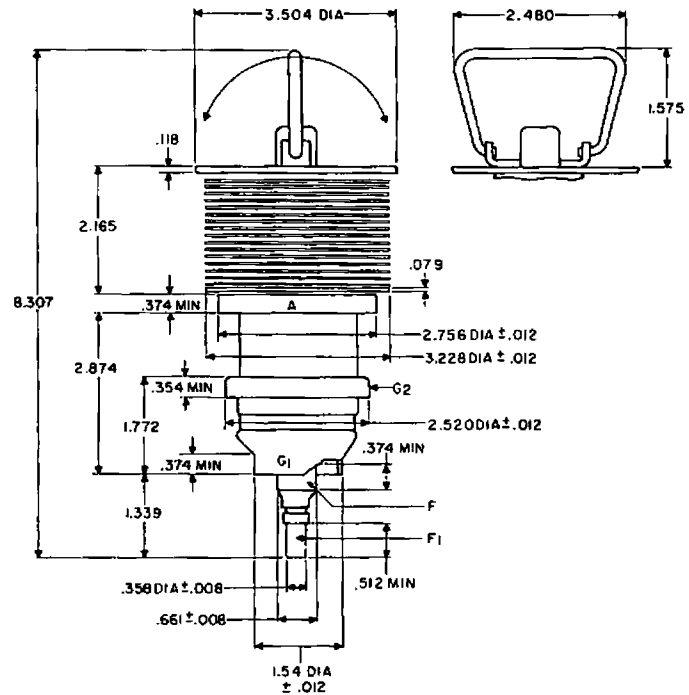
The Amperex 8177 is a ceramic coaxial power tetrode having an integral radiator and a plate dissipation of 1200 watts. It has a directly heated, thoriated tungsten filament. The coaxial terminal arrangement enables use as a "plug in" tube in coaxial circuits. The tube is designed for use as a UHF amplifier or oscillator at frequencies up to 1000 mc.

### GENERAL CHARACTERISTICS

#### ELECTRICAL

Filament	
Voltage	4 volts <sup>1</sup>
Current	60 amps
Amplification Factor	
( $E_b = 3000$ v; $E_{c2} = 500$ v; $I_b = 480$ ma)	0
Transconductance (above values)	20,000 $\mu$ hos

- The filament voltage must be reduced as a function of the operating conditions and frequency. After tube is placed in operation, the filament voltage should be reduced to a point where performance is affected. Maintain filament voltage slightly above this point. Connect filament so that RF voltages on it are suppressed. For further information contact the Amperex Applications Department.



# ELECTRICAL (Continued)

## Direct Interelectrode Capacitance

	Grounded Cathode	Grounded Grid No. 1 & No. 2
Grid to Plate	0.15	7 pf
Output	6.0	- pf
Plate to Filament	-	0.02 pf
Input	46	- pf
Control Grid to Filament	-	20 pf

## MECHANICAL

### Maximum Overall Dimensions

Length	See Outline Drawing
Diameter	See Outline Drawing
Mounting Position	Vertical
Cooling	Forced Air
Maximum Operating Temperature For All parts of envelope	200°C
Weight	4 lbs. 4 oz.

### COOLING CHARACTERISTICS

Plate Dissipation (W)	Altitude (feet)	Inlet Air Temp(°C)	Min Air Flow (cu ft/min)	Inlet Air Pressure (in. of water)
800	0	35	49	.63
	0	45	56	.8
	5000	35	58	.75
	10000	25	60	.7
1200	0	35	67	1.15
	0	45	77	1.5
	5000	35	79	1.4
	10000	25	82	1.35

**MAXIMUM RATINGS**  
**UHF Power Amplifier, Class C CW, Cathode Driven<sup>2</sup>**  
**Maximum Ratings, Absolute Values**  
(Voltages Measured to Grid No. 1)

<b>Frequency</b>	Up to	900 mc
<b>D.C. Plate Voltage</b>		3500 volts (to G1)
<b>D.C. Grid No. 2 Voltage</b>		700 volts (to G1)
<b>D.C. Cathode Voltage</b>		300 volts (to G1)
<b>D.C. Plate Current</b>		950 ma
<b>D.C. Grid No. 1 Current</b>		100 ma
<b>D.C. Grid No. 2 Current</b>		75 ma
<b>Grid No. 2 Dissipation</b>		50 watts
<b>Plate Dissipation</b>		1200 watts

**Typical Operation**  
(Voltages Measured to Grid No. 1)

<b>Frequency</b>	600	900 mc
<b>D.C. Plate Voltage</b>	3110	3110 volts
<b>D.C. Grid No. 2 Voltage</b>	610	610 volts
<b>D.C. Cathode Voltage</b>	110	110 volts
<b>D.C. Plate Current</b>	900	800 ma
<b>D.C. Grid No. 1 Current</b>	60	60 ma
<b>D.C. Grid No. 2 Current</b>	20	20 ma
<b>Driver Output Power</b>	170	200 watts
<b>Plate Dissipation</b>	770	1040 watts
<b>Plate Output Power<sup>3</sup></b>	2070	1500 watts
<b>Load Power Output<sup>4</sup></b>	1760	1280 watts
<b>Power Gain</b>	12	7.5 watts

2. In a cathode-driven UHF amplifier circuit a tunable coaxial circuit is placed between control grid and screen to introduce variable capacitive reactance. This results in better efficiency and negligible regeneration from plate to cathode.
3. Includes power transferred from driving stage.
4. In a circuit of 85% efficiency.

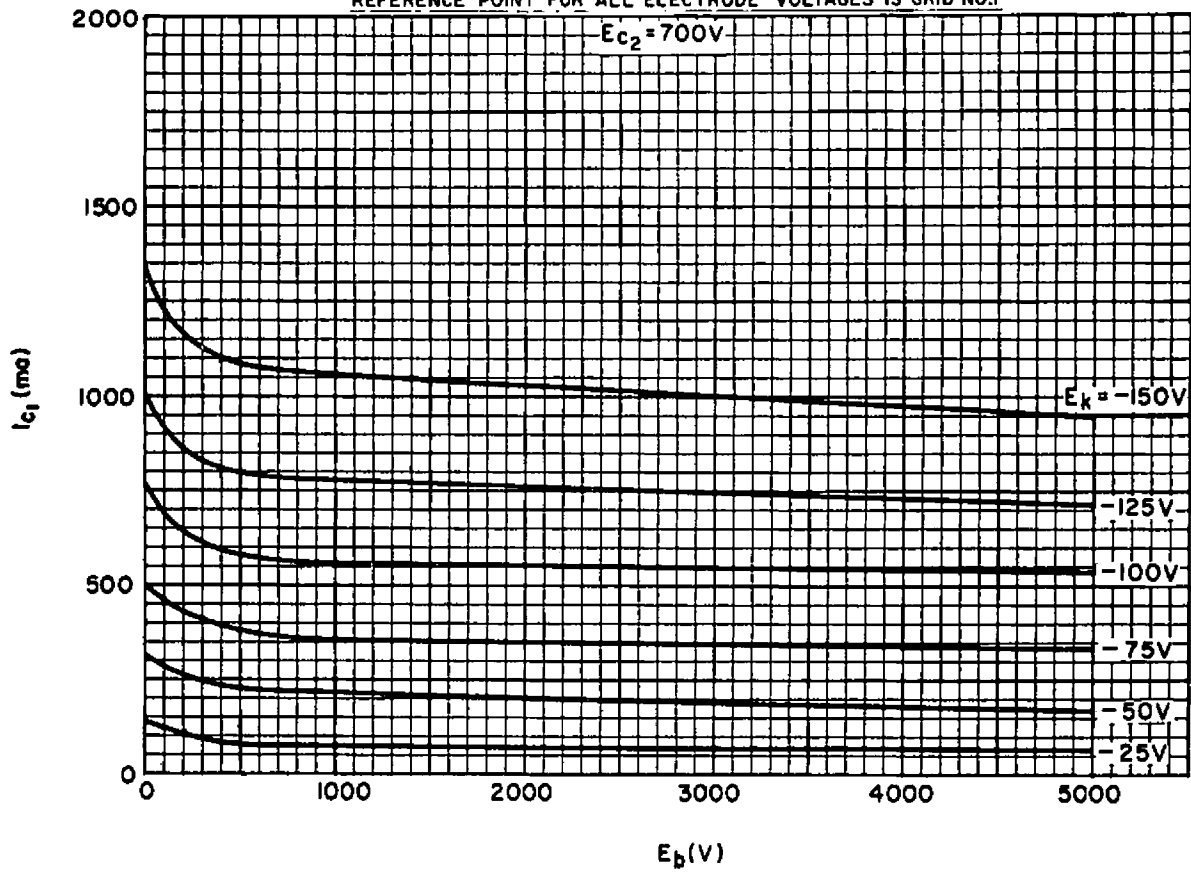
**UHF Class C Amplifier for Television Service**  
**Cathode Modulation, Cathode Driven; Negative Modulation**  
**Positive Synchronization<sup>2</sup>**  
(Voltages Measured to Grid No. 1)  
**Maximum Ratings, Absolute Values**

<b>Frequency</b>	Up to 900 mc
<b>D.C. Plate Voltage</b>	3700 volts
<b>D.C. Grid No. 2 Voltage Sync.</b>	700 volts
<b>D.C. Cathode Voltage</b>	500 volts
<b>D.C. Plate Current Sync.</b>	950 ma
<b>Grid No. 1 Current Sync.</b>	100 ma
<b>Grid No. 2 Current Sync.</b>	75 ma
<b>Grid No. 2 Dissipation</b>	50 watts
<b>Plate Dissipation</b>	1200 watts

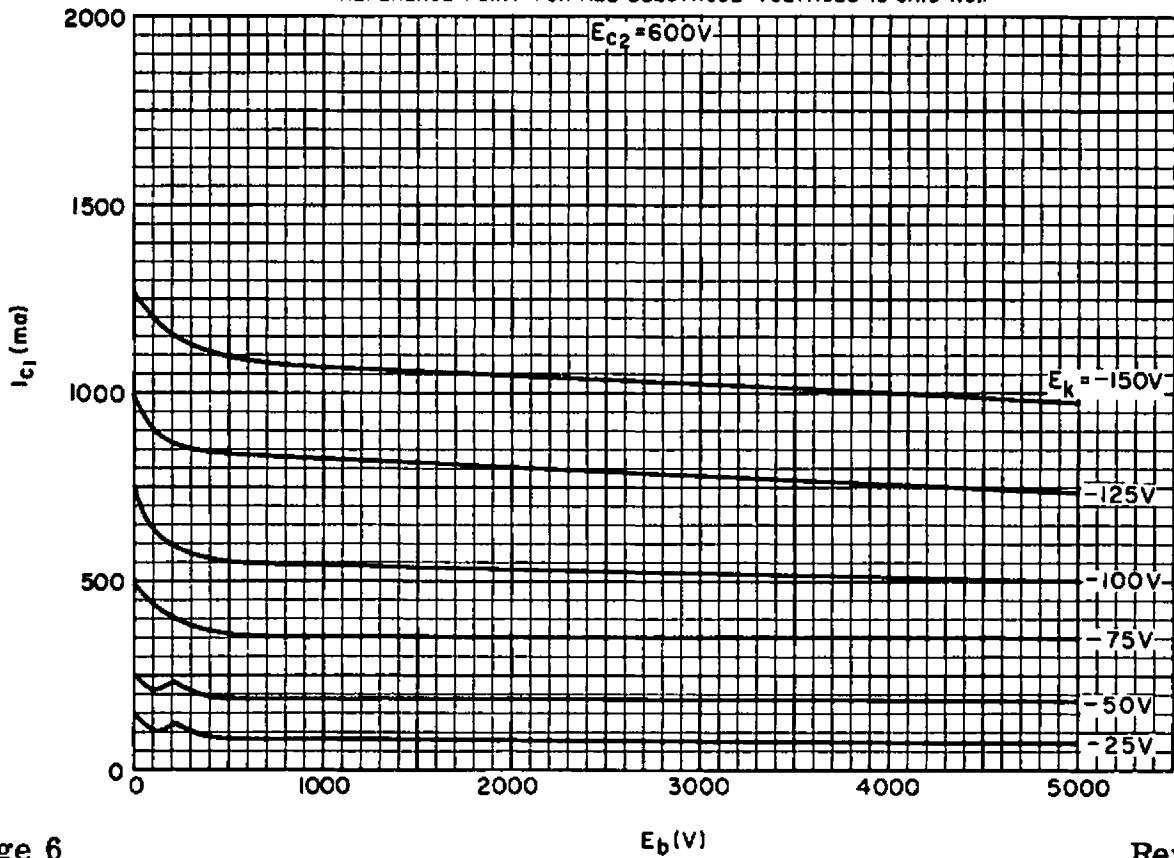
**Typical Operation**  
(Voltages Measured to Grid No. 1)

<b>Frequency</b>	800 mc
<b>Bandwidth to -3 db points</b>	6 mc
<b>D.C. Plate Voltage</b>	3610 volts
<b>D.C. Grid No. 2 Voltage</b>	610 volts
<b>Sync Level</b>	110 volts
<b>D.C. Cathode Voltage, Black Level</b>	210 volts
<b>White</b>	380 volts
<b>D.C. Plate Current, Sync Level</b>	900 ma
<b>Black Level</b>	600 ma
<b>D.C. Grid No. 2 Current, Sync Level</b>	15 ma
<b>Black Level</b>	6 ma
<b>D.C. Grid No. 1 Current, Sync Level</b>	50 ma
<b>Black Level</b>	20 ma
<b>Driver Output Power Sync Level</b>	180 watts
<b>Load Power Output, Sync Level</b>	2000 watts
<b>Black Level</b>	1120 watts

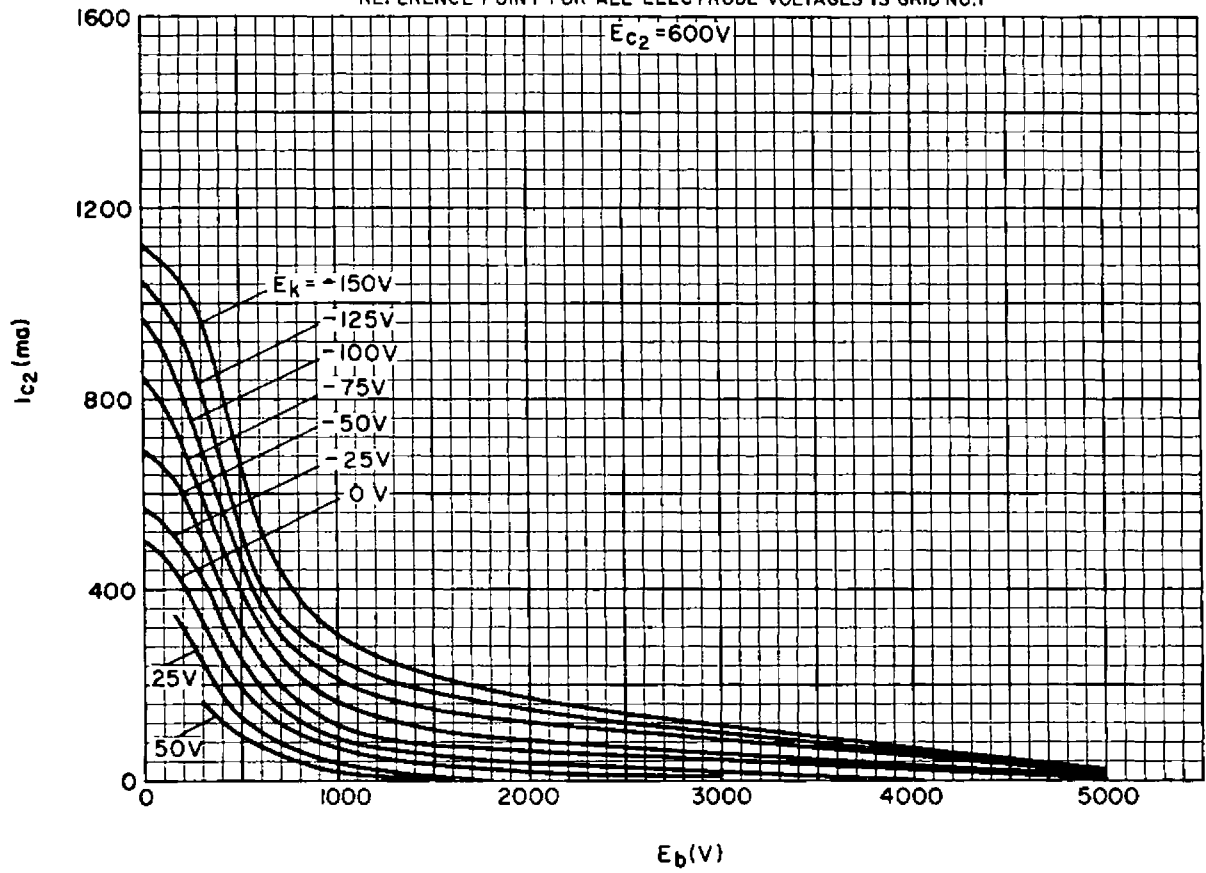
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GROUNDED GRID  
REFERENCE POINT FOR ALL ELECTRODE VOLTAGES IS GRID NO.1



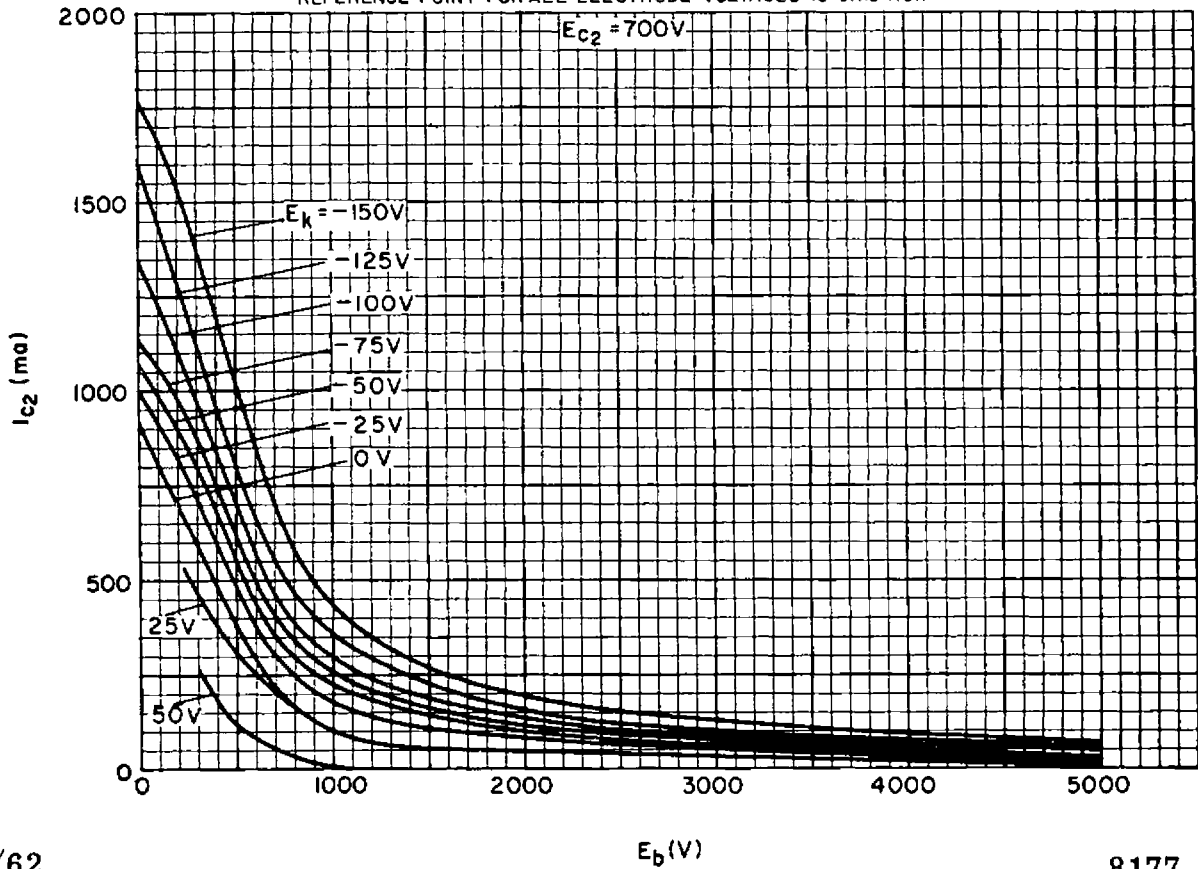
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GROUNDED GRID  
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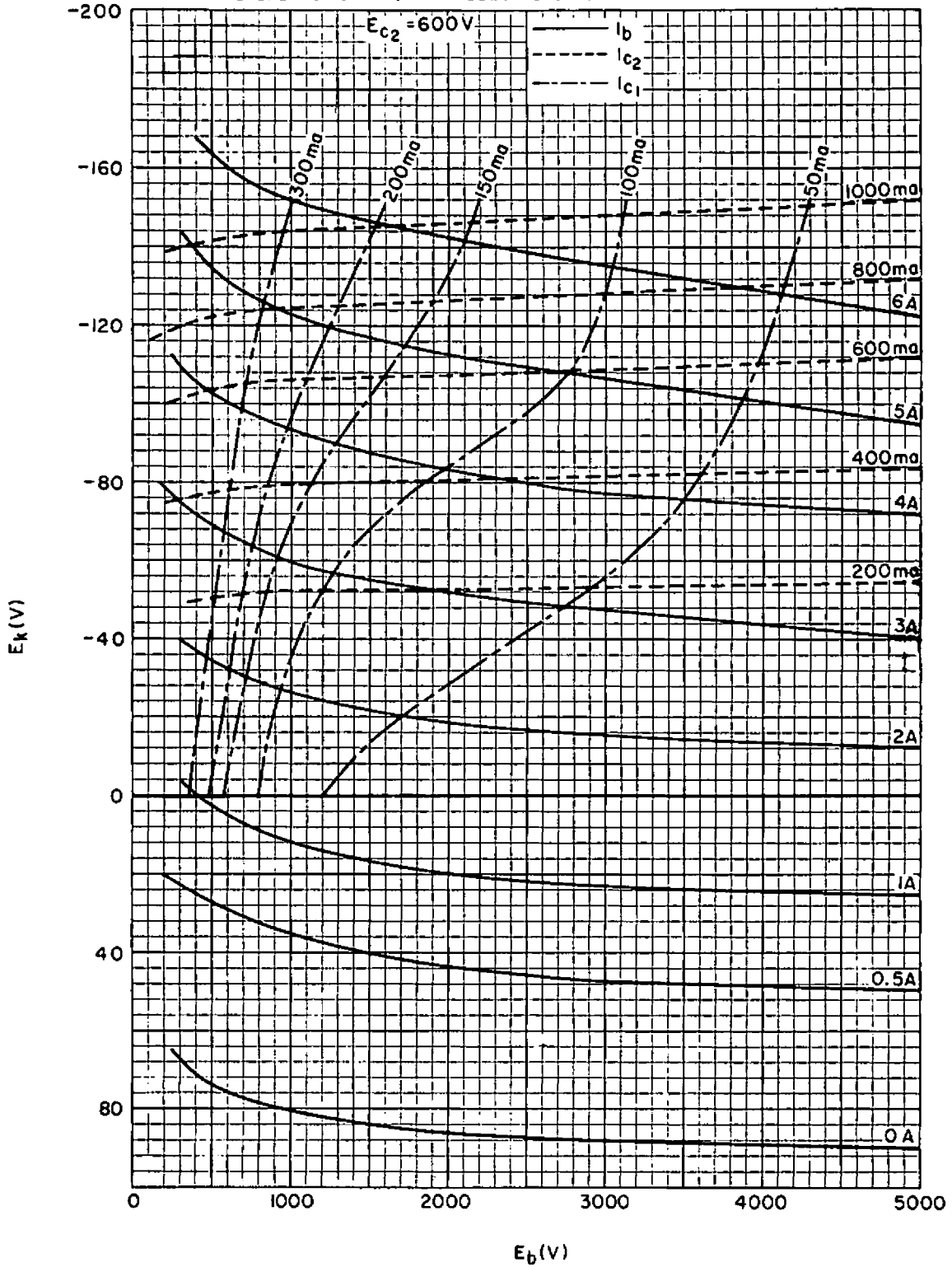
GRID NO.2 CHARACTERISTICS  
 GROUNDED GRID  
 REFERENCE POINT FOR ALL ELECTRODE VOLTAGES IS GRID NO.1



GRID NO.2 CHARACTERISTICS  
 GROUNDED GRID  
 REFERENCE POINT FOR ALL ELECTRODE VOLTAGES IS GRID NO.1



CONSTANT CURRENT CHARACTERISTICS  
 GROUNDED GRID  
 REFERENCE POINT FOR ALL ELECTRODE VOLTAGES IS GRID NO.1





CONSTANT CURRENT CHARACTERISTICS  
 GROUNDED GRID  
 REFERENCE POINT FOR ALL ELECTRODE VOLTAGES IS GRID NO.1

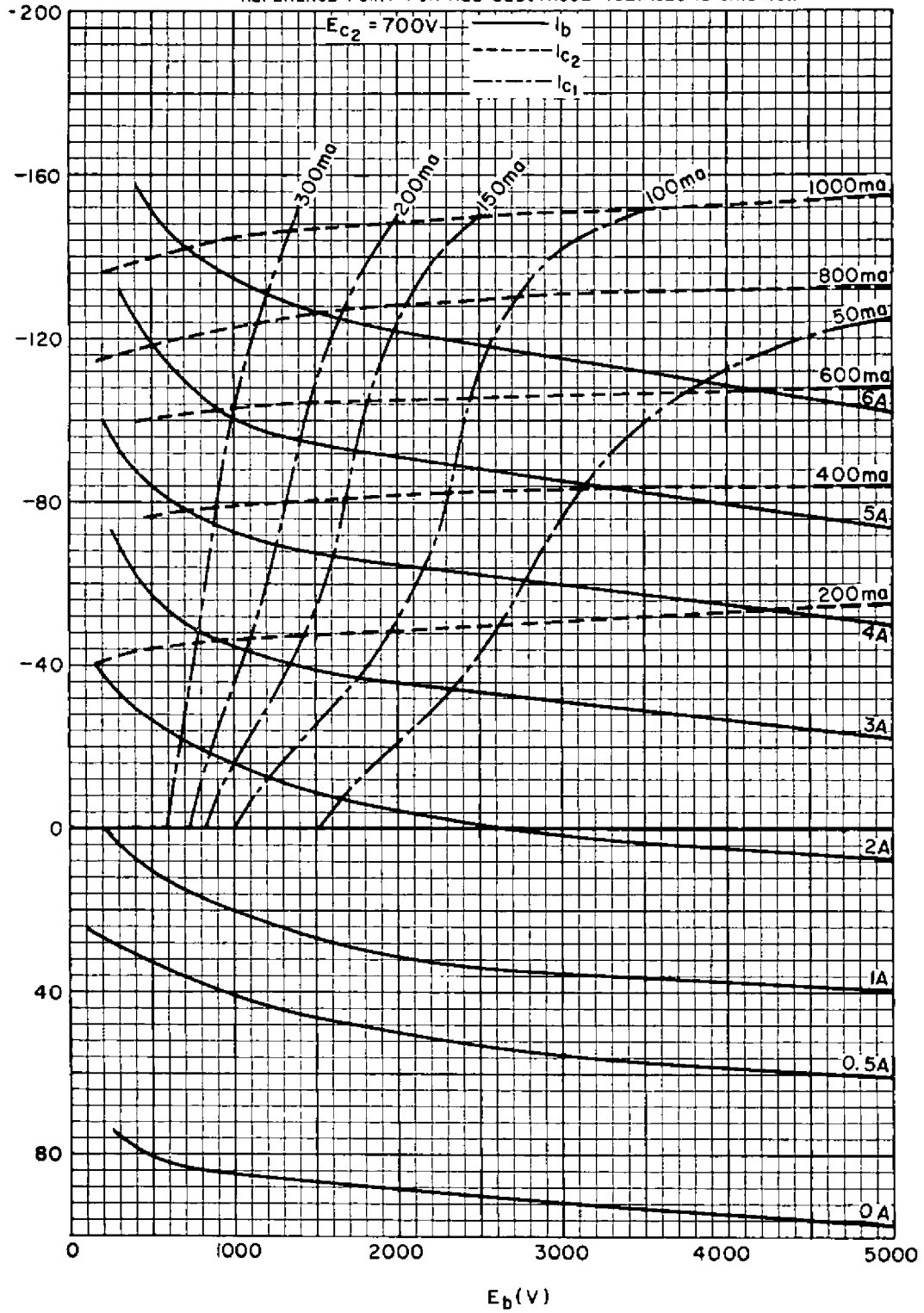


PLATE CHARACTERISTICS  
GROUNDED GRID  
REFERENCE POINT FOR ALL ELECTRODE VOLTAGES IS GRID NO.1

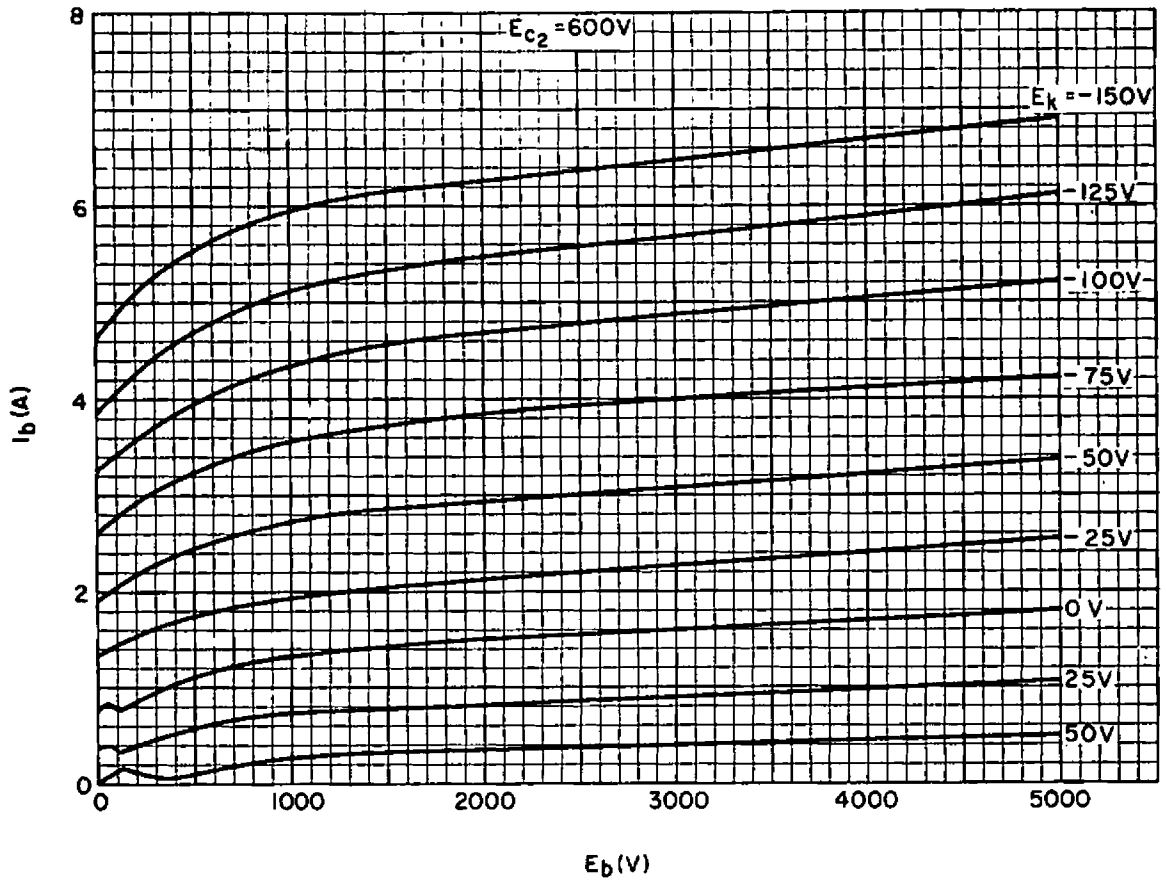


PLATE CHARACTERISTICS  
GROUNDED GRID  
REFERENCE POINT FOR ALL ELECTRODE VOLTAGES IS GRID NO.1

