

ask **Amperex**®



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

TENTATIVE DATA

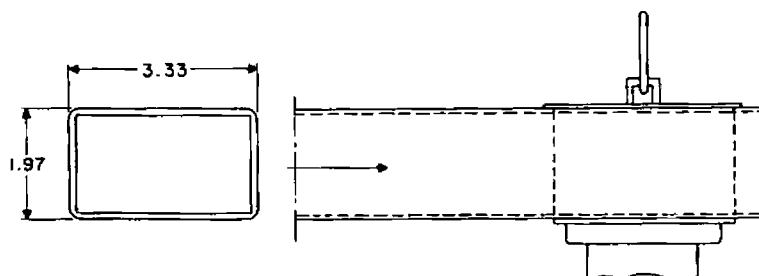
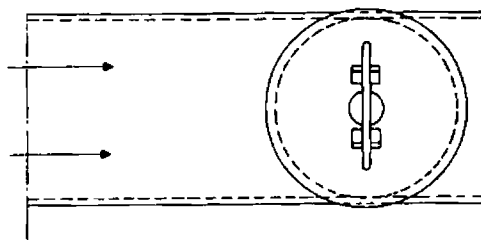
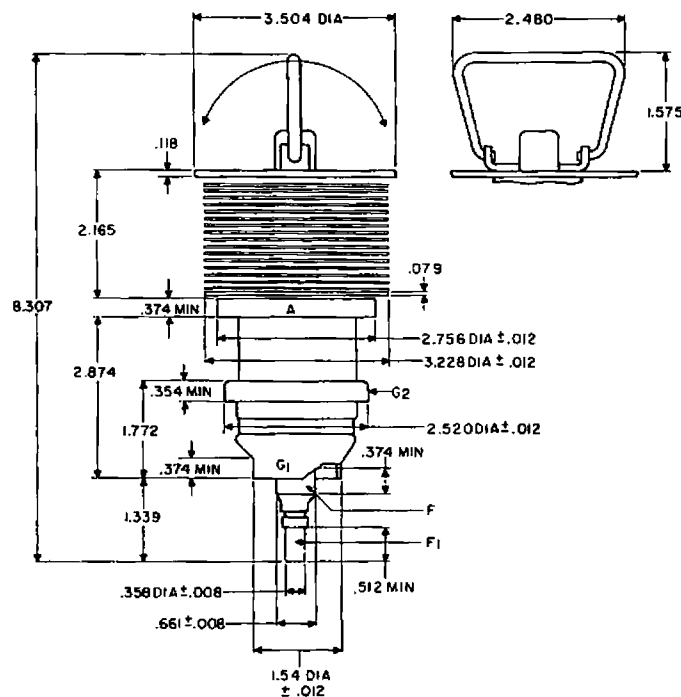
The Amperex 8177 is a ceramic coaxial power tetrode having an integral radiator and a plate dissipation of 1200 watts. It has a directly heated, thoriated tungsten filament. The coaxial terminal arrangement enables use as a "plug in" tube in coaxial circuits. The tube is designed for use as a UHF amplifier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

GENERAL CHARACTERISTICS

ELECTRICAL

Filament	
Voltage	4 volts ¹
Current	60 amps
Amplification Factor	
($E_b = 3000$ v; $E_{c2} = 500$ v; $I_b = 480$ ma)	0
Transconductance (above values)	20,000 μ mhos

1. 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 Driven²
Maximum Ratings, Absolute Values
(Voltages Measured to Grid No. 1)

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

Typical Operation
(Voltages Measured to Grid No. 1)

Frequency	600	900 mc
D.C. Plate Voltage	3110	3110 volts
D.C. Grid No. 2 Voltage	610	610 volts
D.C. Cathode Voltage	110	110 volts
D.C. Plate Current	900	800 ma
D.C. Grid No. 1 Current	60	60 ma
D.C. Grid No. 2 Current	20	20 ma
Driver Output Power	170	200 watts
Plate Dissipation	770	1040 watts
Plate Output Power³	2070	1500 watts
Load Power Output⁴	1760	1280 watts
Power Gain	12	7.5 watts

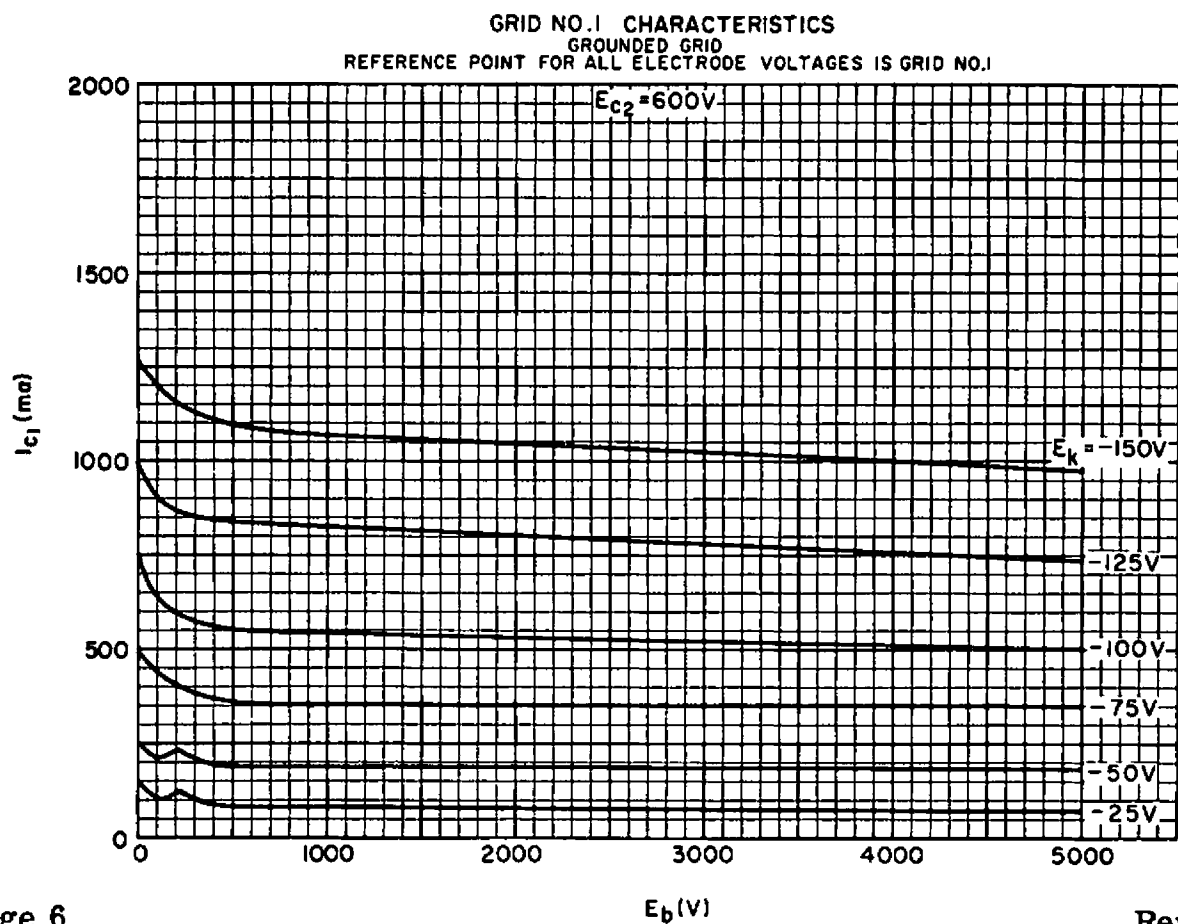
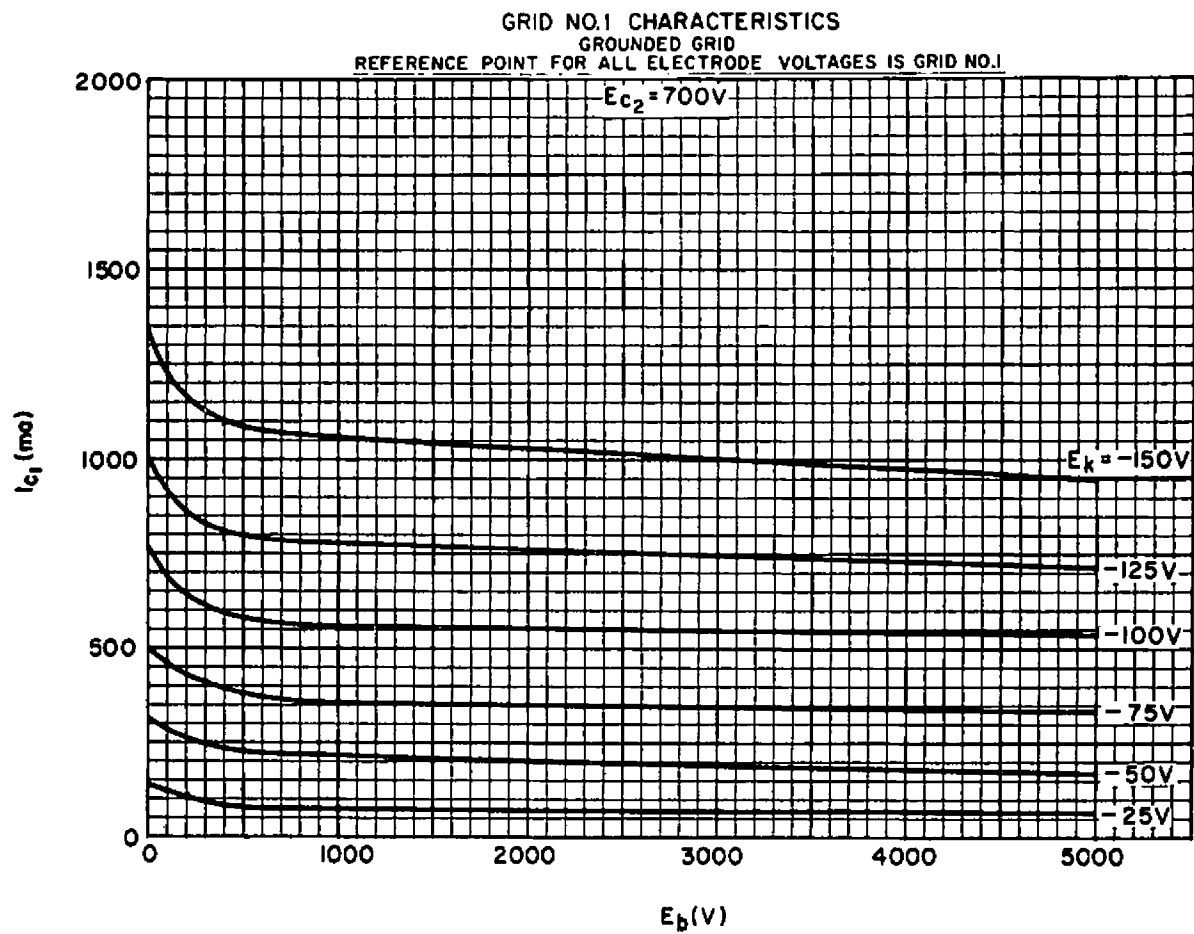
2. In a cathode-driven UHF amplifier circuit a tunable coaxial circuit is placed between control grid and screen to introduce variable capacitive reactance. This results in better efficiency and negligible regeneration from plate to cathode.
3. Includes power transferred from driving stage.
4. In a circuit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

UHF Class C Amplifier for Television Service
Cathode Modulation, Cathode Driven; Negative Modulation
Positive Synchronization²
(Voltages Measured to Grid No. 1)
Maximum Ratings, Absolute Values

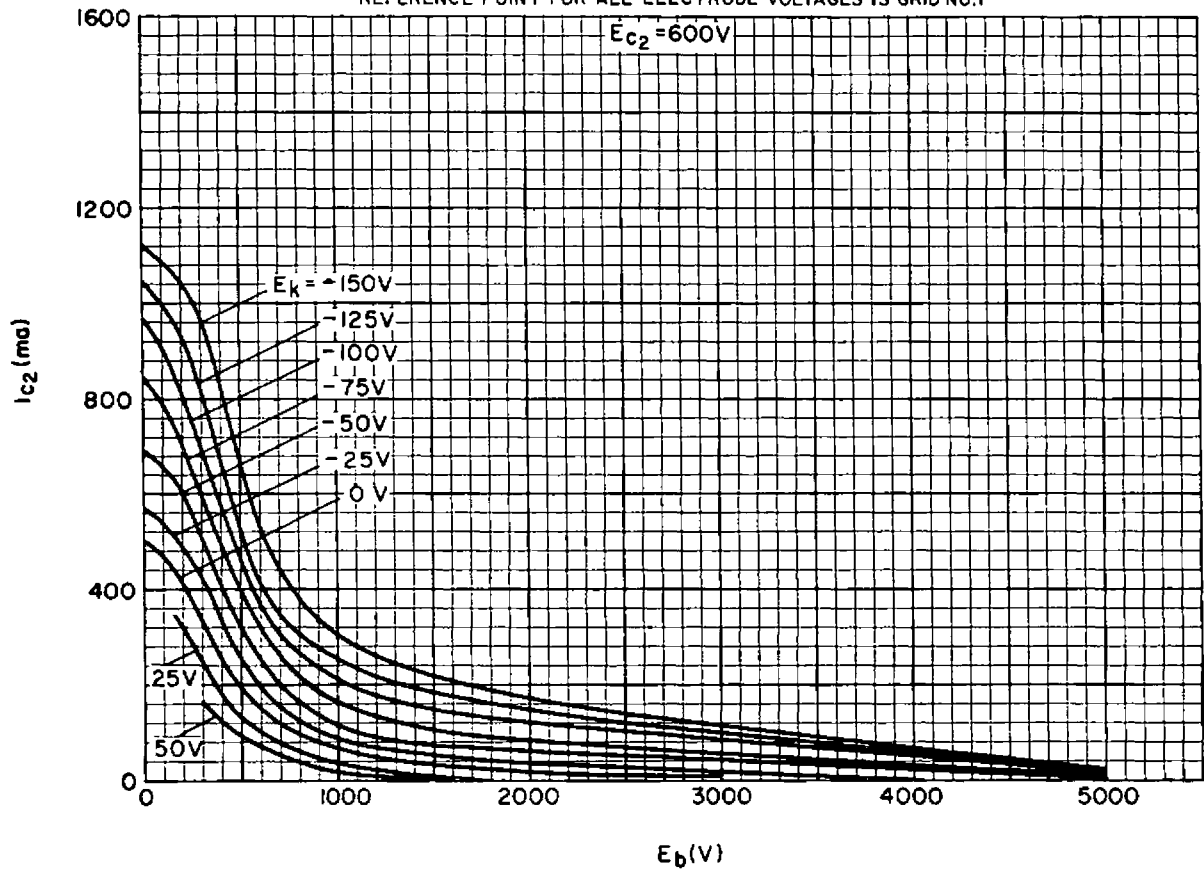
Frequency	Up to 900 mc
D.C. Plate Voltage	3700 volts
D.C. Grid No. 2 Voltage Sync.	700 volts
D.C. Cathode Voltage	500 volts
D.C. Plate Current Sync.	950 ma
Grid No. 1 Current Sync.	100 ma
Grid No. 2 Current Sync.	75 ma
Grid No. 2 Dissipation	50 watts
Plate Dissipation	1200 watts

Typical Operation
(Voltages Measured to Grid No. 1)

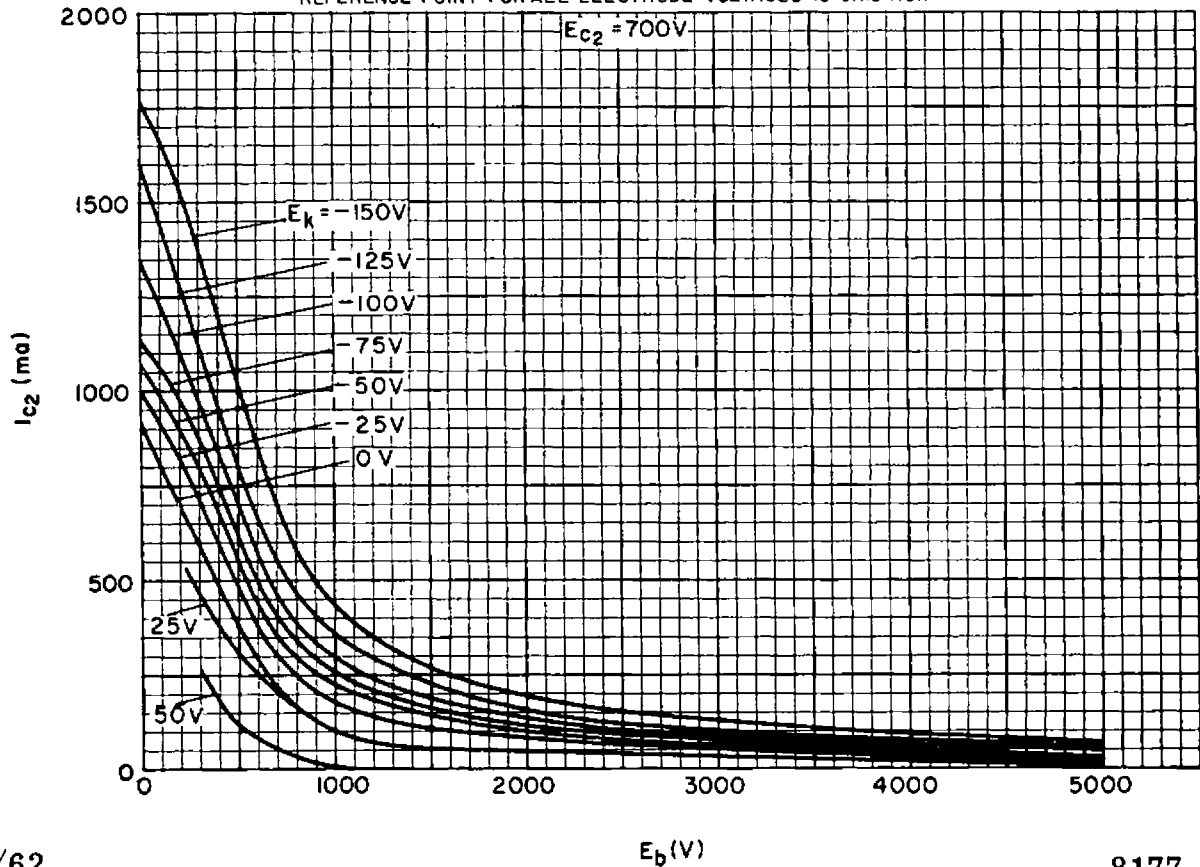
Frequency	800 mc
Bandwidth to -3 db points	6 mc
D.C. Plate Voltage	3610 volts
D.C. Grid No. 2 Voltage	610 volts
Sync Level	110 volts
D.C. Cathode Voltage, Black Level	210 volts
White	380 volts
D.C. Plate Current, Sync Level	900 ma
Black Level	600 ma
D.C. Grid No. 2 Current, Sync Level	15 ma
Black Level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

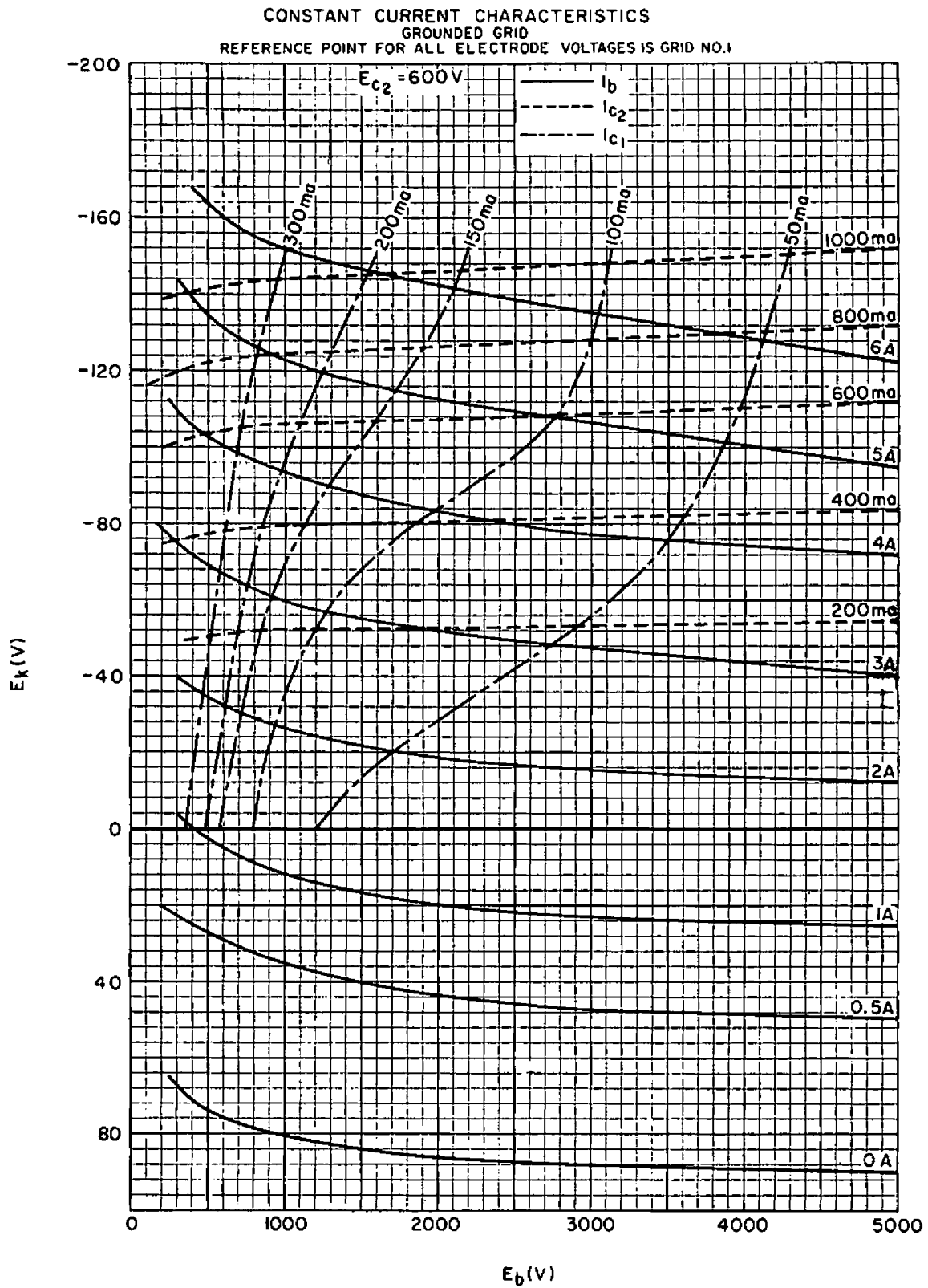


GRID NO.2 CHARACTERISTICS
 GROUNDED GRID
 REFERENCE POINT FOR ALL ELECTRODE VOLTAGES IS GRID NO.1



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

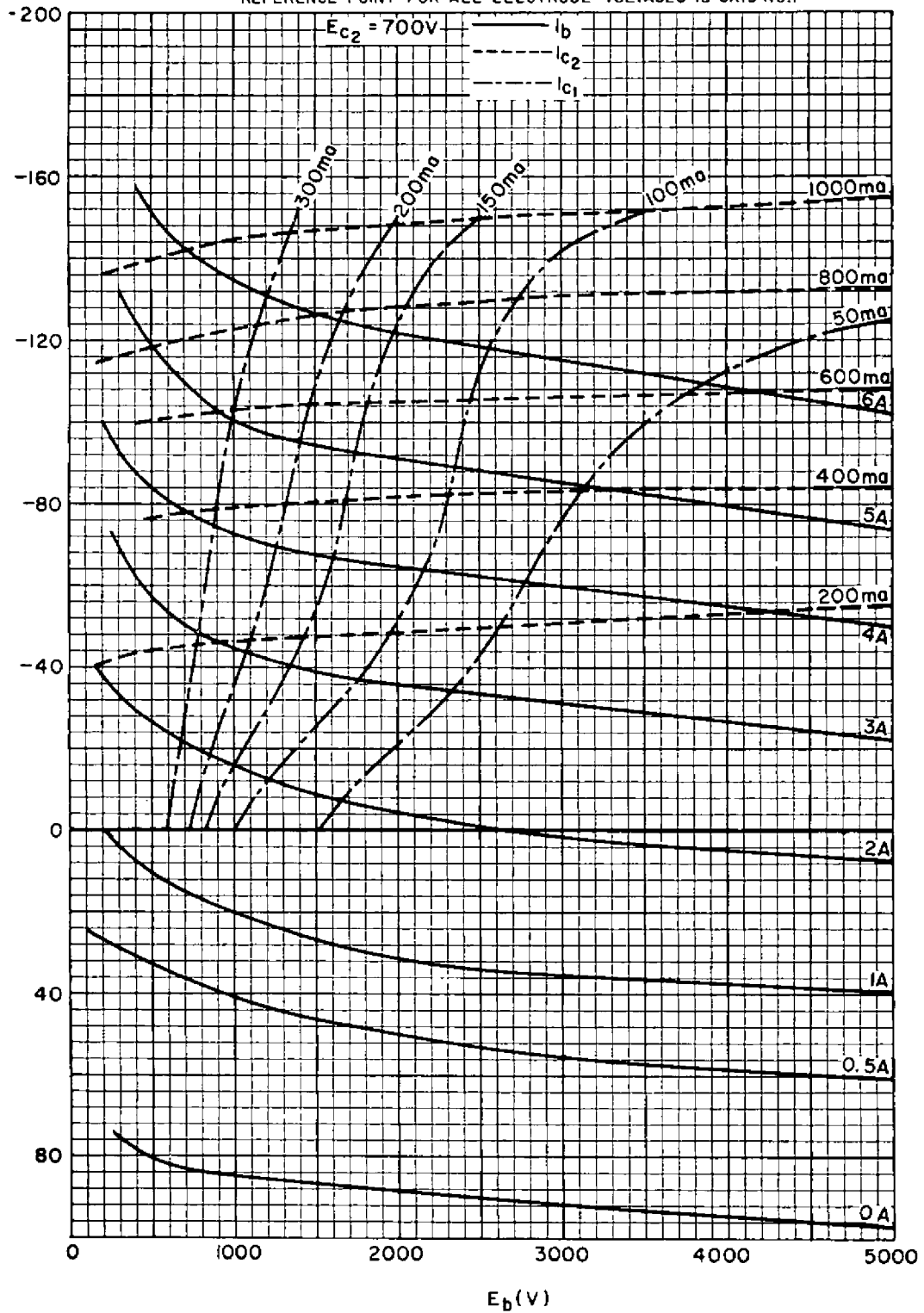


PLATE CHARACTERISTICS
 GROUNDED GRID
 REFERENCE POINT FOR ALL ELECTRODE VOLTAGES IS GRID NO.1

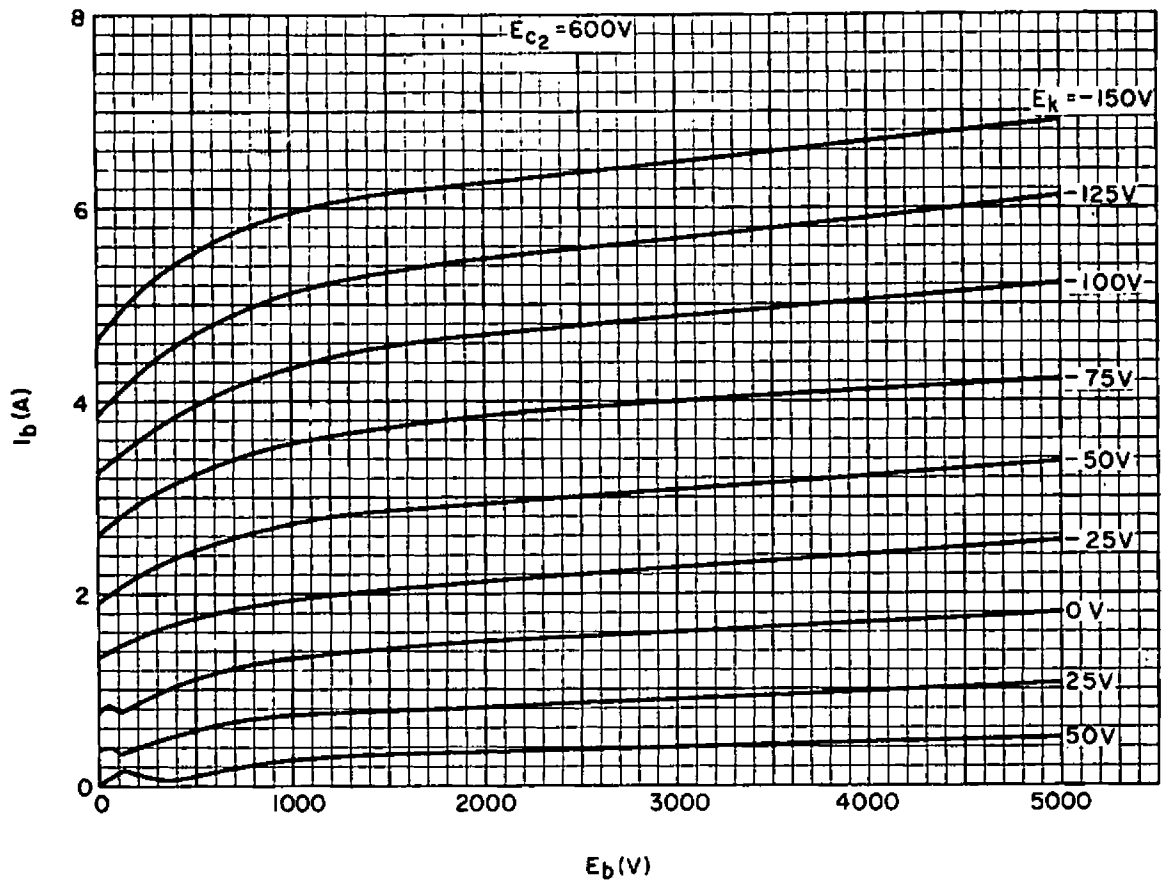


PLATE CHARACTERISTICS
 GROUNDED GRID
 REFERENCE POINT FOR ALL ELECTRODE VOLTAGES IS GRID NO.1

