Westinghouse®

WL-7363

March 13, 1959

THYRATRON TYPE WL-7363

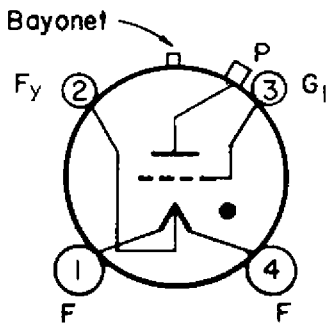
The WL-7363 tube is a three-electrode, inert gas-filled thyratron with a negative control characteristic. This tube is designed primarily for inverter and industrial control applications.

ELECTRICAL:

	Min.	Bogey	Max.	
Cathode	Directly Heated Coated Filament			
Filament:				
Voltage	2.37	2.50	2.63	Volts
Filament Current at Bogey Voltage	--	8.5	10	Amperes
Filament Heating Time	10	--	--	Seconds
Critical Grid Voltage			See CE-A1088	
Grid Current Before Conduction				
Zero Anode Current			See CE-A1089	
Rated Anode Current			See CE-A1090	
Grid Current During Conduction.			See CE-A1091	
Typical Deionization Time			See CE-A1442	
Ionization Time (approx)		10		μsecond
Typical Anode Voltage Drop		16		Volts
Direct Interelectrode Capacitances:				
Anode-Grid Capacitance		0.35		$\mu\mu$f
Grid-Cathode Capacitance		11.5		$\mu\mu$f
Anode-Cathode Capacitance		5.1		$\mu\mu$f

MECHANICAL:

Type of Cooling	Air, convection
Mounting Position	Any
Cap, medium, ceramic insert	JEDEC C1-5
Base . . . . . Medium 4-Pin Bayonet, Metal Shell	JEDEC A4-10
Basing	4CF
Bulb	T-12
Net Weight (approx.)	3 oz
Shipping Weight (approx.)	24 oz

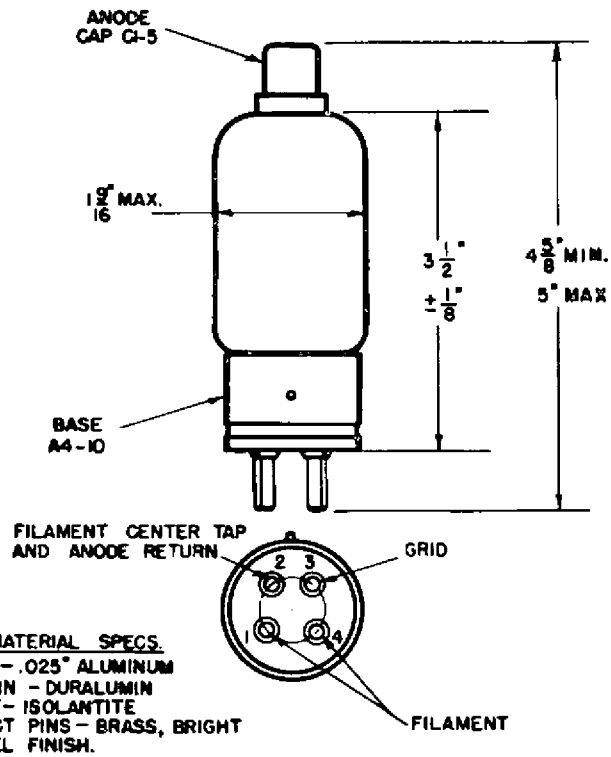


JETEC
4CF

BASE CONNECTIONS

F – Filament
G_1 – Control Grid
P – Plate & Anode
F_y – Filament Center Tap & Anode Return

CE-A1102



BASE MATERIAL SPECS.
1. SHELL – .025" ALUMINUM
2. SIDE PIN – DURALUMIN
3. INSERT – ISOLANTITE
4. CONTACT PINS – BRASS, BRIGHT NICKEL FINISH.

Thyratron Section

WESTINGHOUSE ELECTRIC CORPORATION, ELECTRONIC TUBE DIVISION, ELMIRA, NEW YORK

from JEDEC release #2432, April 6, 1959

MAXIMUM RATINGS■

Absolute Maximum Values:

Peak Anode Voltage			
Forward	1500	max.	volts
Inverse	1500	max.	volts
Cathode Current:			
Peak	20	max.	amp
Average	1.6	max.	amp
Fault (surge) maximum duration 0.1 sec:♦			
Connection (a)	240	max.	amp
Connection (b)	120	max.	amp
Connection (c)	120	max.	amp
Maximum Average Time	15	max.	sec
Commutation Factor▲	10	max.	va/μsec
Current Rate of Change	0.07	max.	amp/μsec
Voltage Rate of Change	150	max.	v/μsec
Negative Control Grid Voltage:			
Before Conduction	-250	max.	volts
During Conduction:♦	-10	max.	volts
Average Positive Control Grid Current:			
Averaging Time=1 cycle:§	0.10	max.	amp
Ambient Temperature Limits	-55 to +70	max.	°C
Maximum Frequency			See CE-A1442

♦ These ratings are effective only when connections are made as shown in CE-A1103.

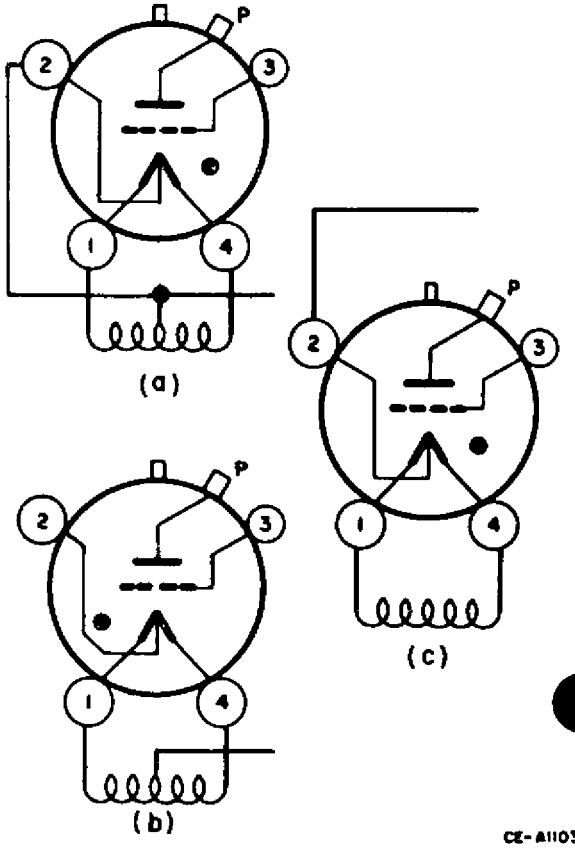
■ These ratings are important in the prevention of "clean-up" or loss of the inert gas filling. Their observance will reduce the bombardment of anode or grid by positive ions of the gas filling, which may cause the gas ions to be absorbed in the tube element concerned.

▲ Commutation factor is the product of the rate of current decay in amperes per microsecond just prior to the end of commutation and the rate of inverse voltage rise in volts per microsecond just after the end of commutation. Its value should not exceed the value given in order to reduce ion bombardment of the anode during the deionization period. Limits are given on both components of this factor to correspond to factory test data limits. The limit on current rate of change is about at the highest value which is allowable under the fault current limit.

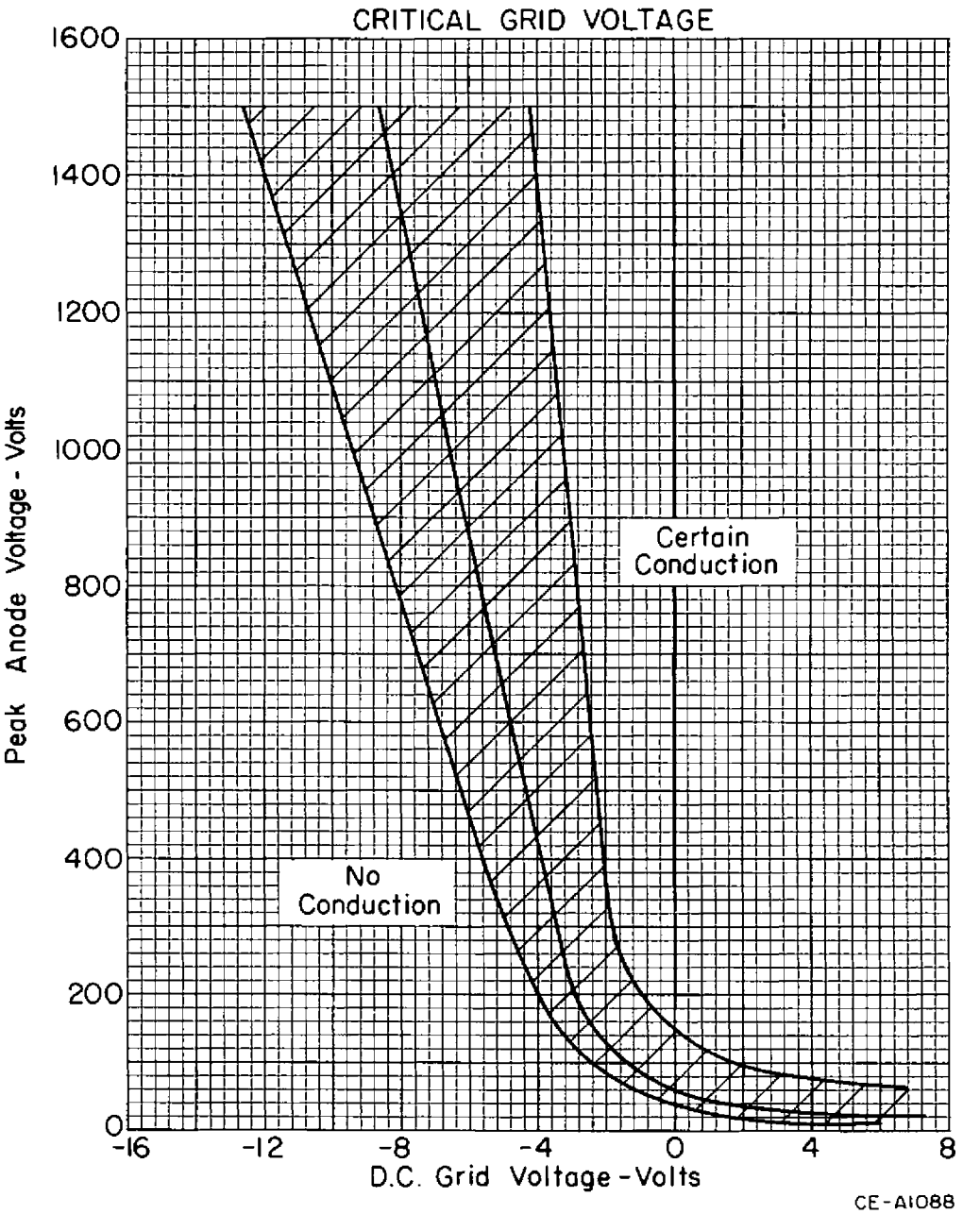
♦ When the tube conducts, positive ions are attracted to a grid at negative potential. This positive ion current flowing through the grid resistor will reduce the negative voltage at the grid from the higher negative grid supply voltage. To reduce ion grid bombardment, sufficient resistance must be provided to drop the negative grid supply voltage to a value not more negative than -10 volts as shown in the ratings. The magnitude of the grid current during conduction is shown by the curves of CE-A1091.

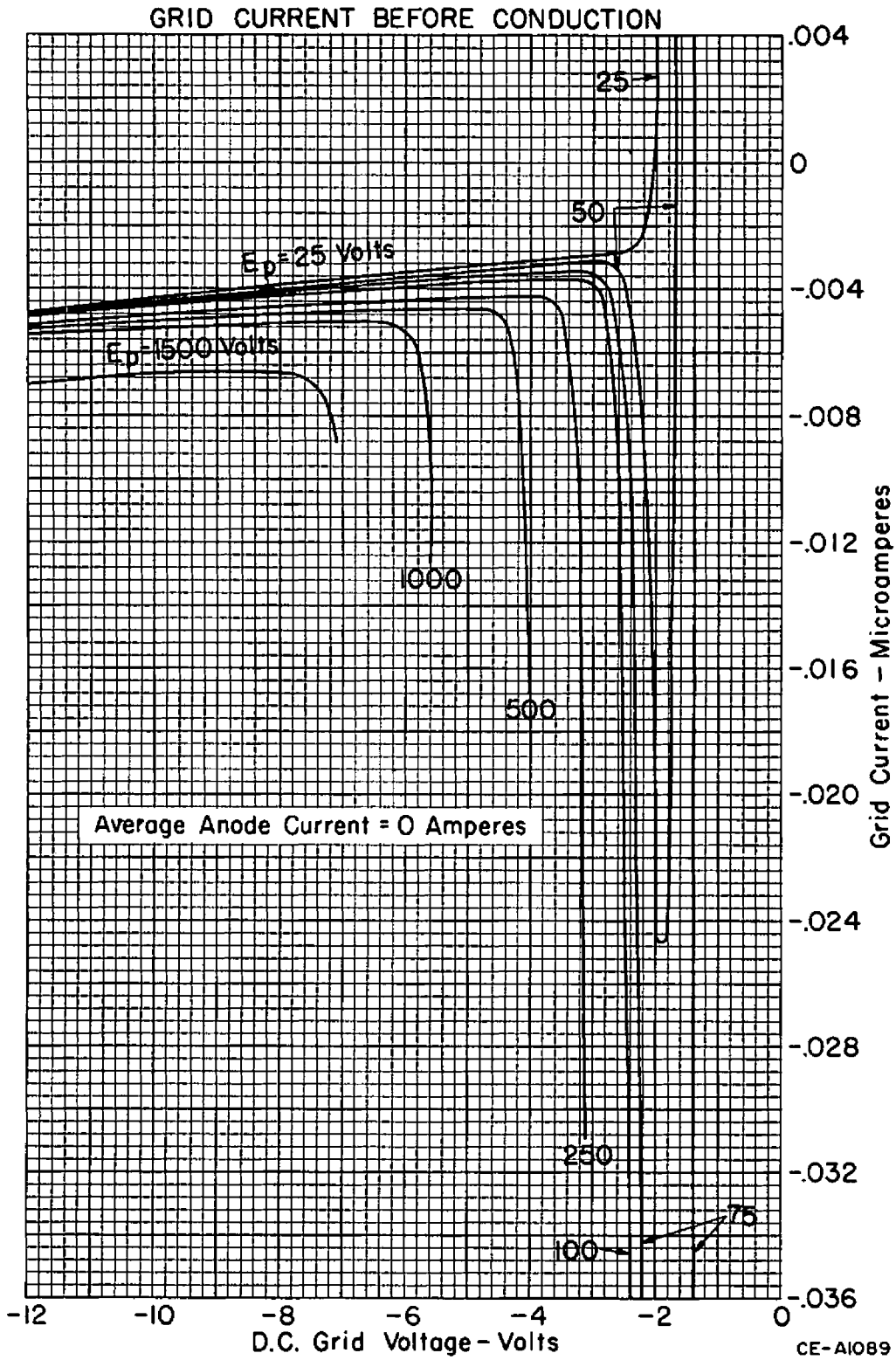
§ This rating indicates the heat emission properties of the grid. This value of current may be safely drawn to the grid if conduction occurs only while the anode is positive. However, during the period of negative anode potential, the grid potential must also be negative to prevent electrons being drawn to the grid and generating positive ions which would bombard the anode.

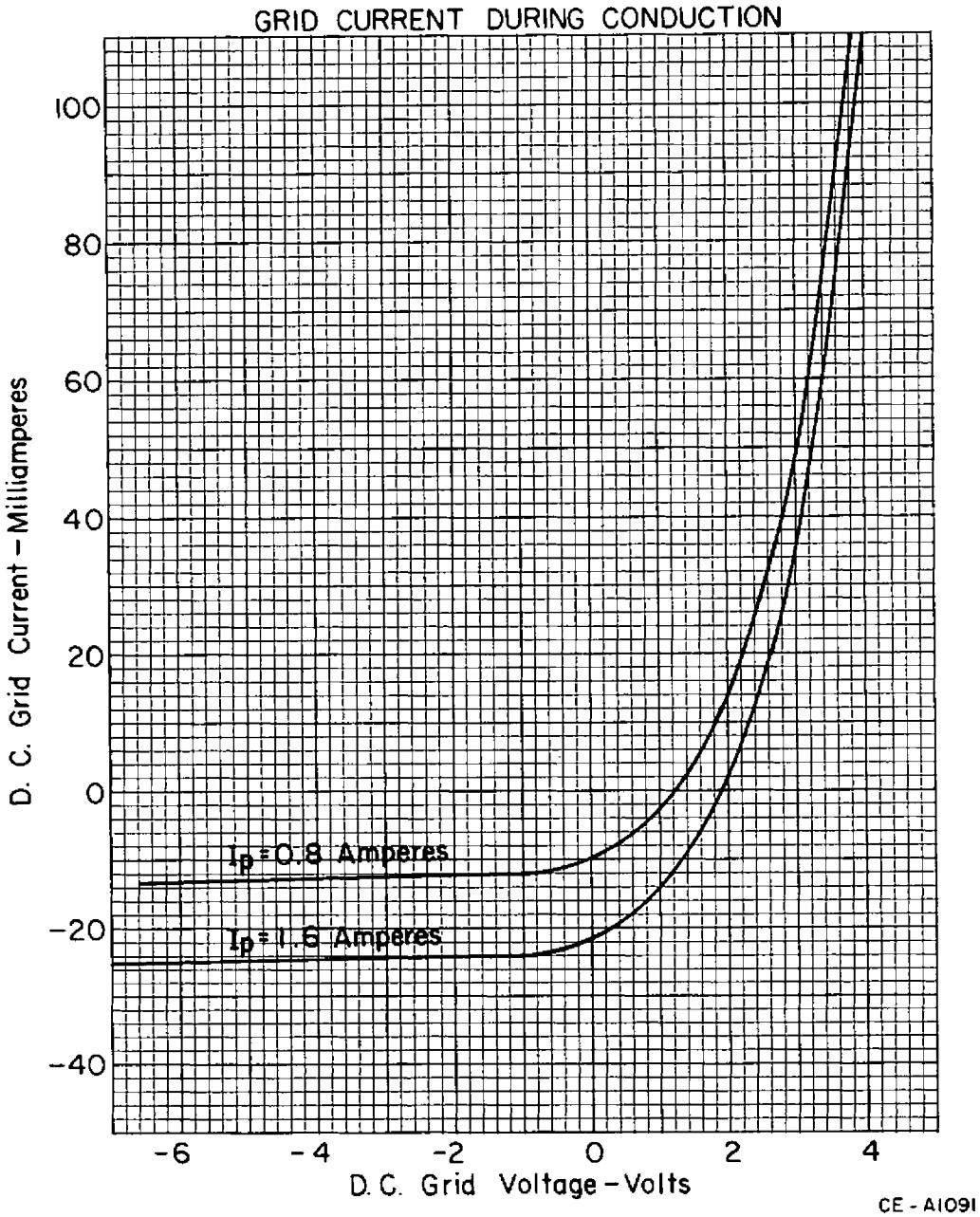
ANODE RETURN CONNECTIONS



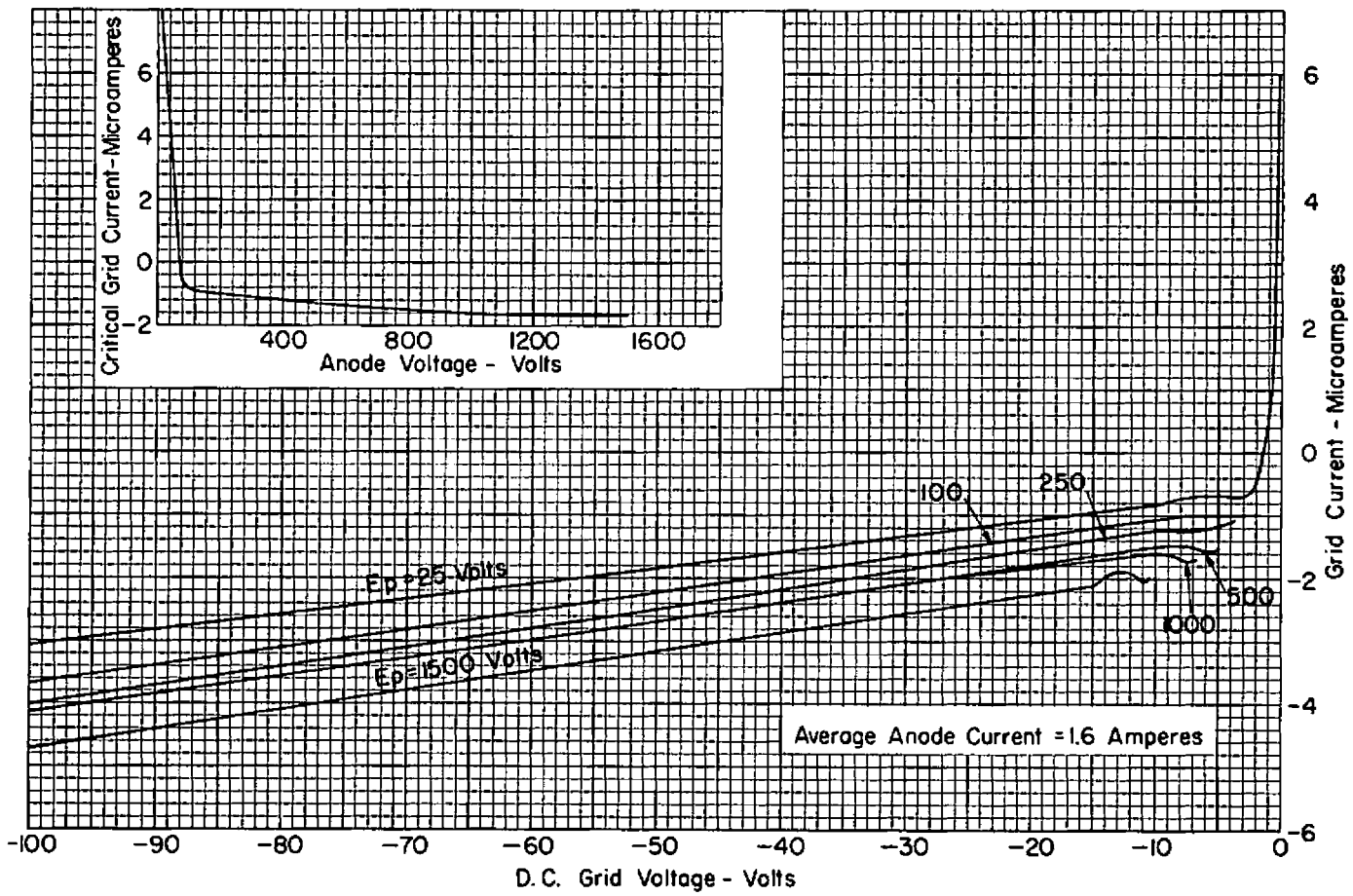
CE-A1103


CRITICAL GRID VOLTAGE
1600
1400
1200
1000
800
600
400
200
0
Peak Anode Voltage - Volts
Certain Conduction
No Conduction
-16
-12
-8
-4
0
4
8
D.C. Grid Voltage - Volts
CE-A1088


GRID CURRENT BEFORE CONDUCTION
.004
0
-.004
-.008
-.012
-.016
-.020
-.024
-.028
-.032
-.036
Grid Current - Microamperes
25
50
Ep=25 Volts
Ep=1500 Volts
1000
500
Average Anode Current = 0 Amperes
250
75
100
-12
-10
-8
-6
-4
-2
0
D.C. Grid Voltage - Volts
CE-A1089

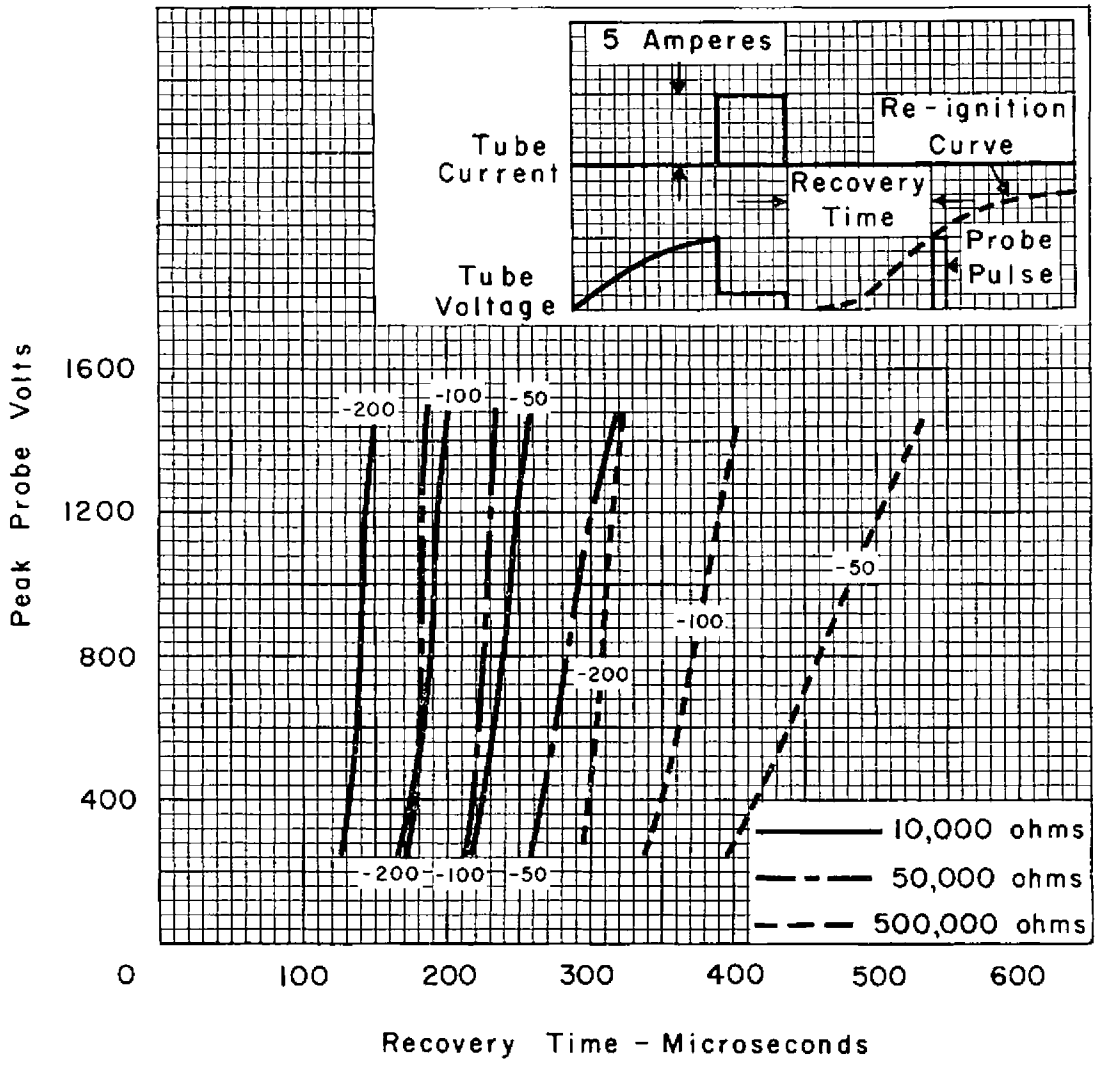

GRID CURRENT DURING CONDUCTION
100
80
60
40
20
0
-20
-40
D. C. Grid Current – Milliamperes
I_p = 0.8 Amperes
I_p = 1.6 Amperes
-6
-4
-2
0
2
4
D. C. Grid Voltage – Volts
CE - A1091

GRID CURRENT BEFORE CONDUCTION



CE-A1090

TYPICAL RECOVERY TIME



CE-A1442