

## THYRATRON TYPE WL-7306

The WL-7306 is a three-electrode, inert gas filled thyatron with a negative control characteristic. This tube is designed primarily for industrial control applications.

### ELECTRICAL:

Cathode . . . . .	Directly Heated Coated Filament		
Filament:	Min.	Bogey	Max.
Voltage . . . . .	2.37	2.50	2.63
Current at Filament Volts=2.5 . . . . .	--	9.0	11
Heating Time . . . . .	30	--	--
Deionization Time . . . . .	less than 1000 $\mu$ sec		
Ionization Time (approx.) . . . . .	10 $\mu$ sec		
Critical Grid Voltage . . . . .	See CE-A1451		
Maximum Critical Grid Current . . . . .	10 $\mu$ amp		
Interelectrode Capacitances (approx.):			
Anode to Grid . . . . .	2 $\mu$ uf		
Grid to Cathode . . . . .	10 $\mu$ uf		
Typical Arc Drop . . . . .	10 Volts		
Control Characteristic . . . . .	Negative		

### MECHANICAL:

Mounting Position . . . . .	Any
Overall Height (approx.) . . . . .	5-3/16"
Overall Diameter (Maximum) . . . . .	1-9/16"
Type of Cooling . . . . .	Air, Unrestricted Convection
Temperature Range . . . . .	-55 to +70 °C
Bulb . . . . .	T-12
Anode Cap . . . . .	JEDEC C1-5
Base . . . . .	JEDEC A4-10
Net Weight . . . . .	3 oz
Shipping Weight (approx.) . . . . .	24 oz

### ABSOLUTE MAXIMUM VALUES

<b>Peak Anode Voltage:</b>			
Forward . . . . .	1000	max.	Volts
Inverse . . . . .	1250	max.	Volts
<b>Anode Current:</b>			
Peak . . . . .	30	max.	Amperes
Average . . . . .	2.5	max.	Amperes
Averaging Time . . . . .	4.5	max.	Sec.
<b>Surge, max. Duration 0.1 sec. ■ :</b>			
Connection (a) . . . . .	240	max.	Amperes
Connection (b) . . . . .	120	max.	Amperes
Connection (c) . . . . .	120	max.	Amperes
Commutation Factor ♦ . . . . .	0.66	max.	va/ $\mu$ sec <sup>2</sup>
<b>Negative Control Grid Voltage:</b>			
Before Conduction . . . . .	100	max.	Volts
During Conduction § . . . . .	10	max.	Volts
<b>Average Positive Control Grid Current:</b>			
Averaging Time=1 cycle † . . . . .	0.10	max.	Ampere
Operating Frequency ⊗ . . . . .	150	max.	cps

General 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.

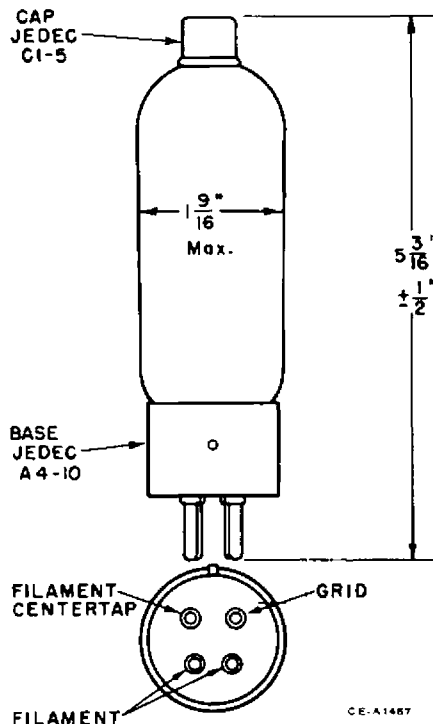
♦ Commutation factor is the product of the rate of current decay in amperes per microsecond just prior to the end of commutation and the rate of inverse voltage rise in volts per microsecond just after the end of commutation. Its value should not exceed the value given in order to reduce ion bombardment of the anode during the deionization period. Value given is for a maximum initial inverse voltage of 350 volts.

§ 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.

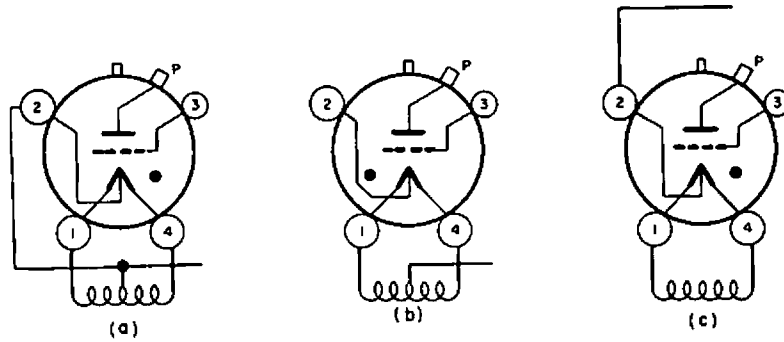
♦ This rating indicates the heat emission properties of the grid. This value of current may be safely drawn to the grid if conduction occurs only while the anode is positive. However, during the period of negative anode potential, the grid potential must also be negative to prevent electrons being drawn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

⊗ For higher frequency ratings, consult the tube manufacturer.

■ These ratings are effective only when the anode return connections are made according to the diagrams shown in CE-A1468.

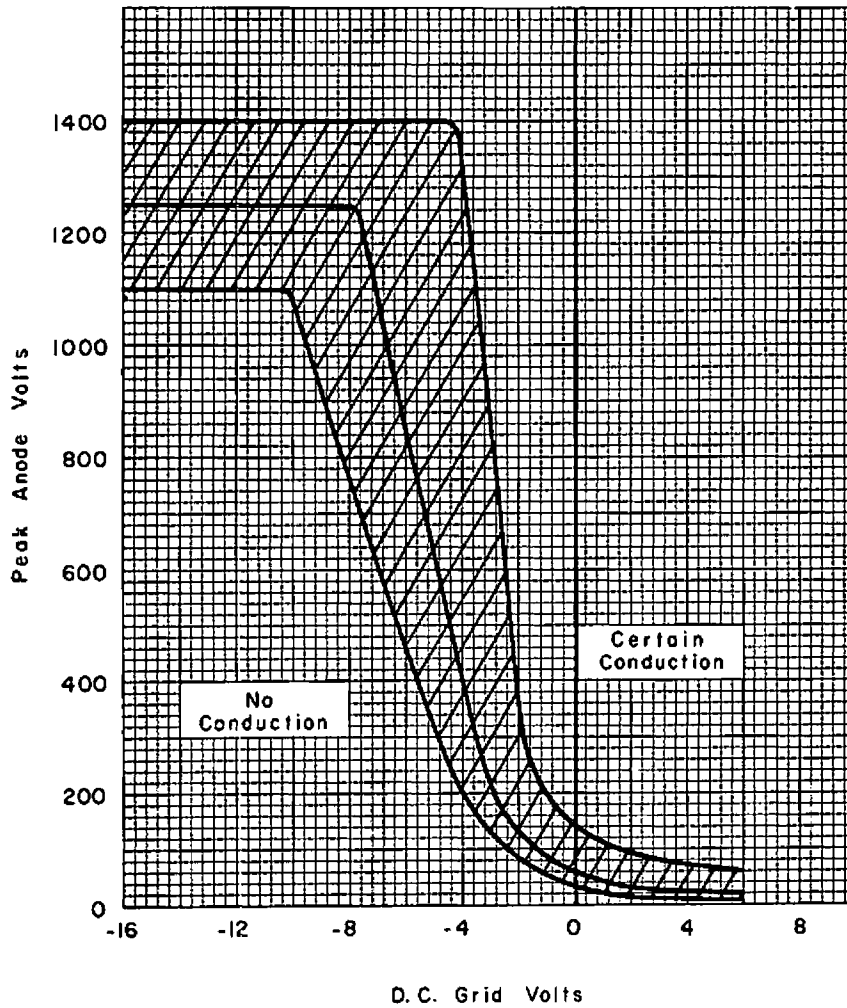


## ANODE RETURN CONNECTIONS



CE-A1468

## CRITICAL GRID VOLTAGE



CE-A1451