

THYRATRON TYPE WL-7509

The WL-7509 is a three-electrode thyatron with negative control characteristic and an inert gas-mercury vapor filling. The WL-7509 has the long life characteristic of mercury vapor tubes and the fast starting and wide ambient temperature range associated with inert gas tubes. It is designed for ignitor firing and industrial control applications. The WL-7509 is electrically similar to the WL-7307.

ELECTRICAL:

Filament:	Min.	Bogey	Max.	
Voltage	2.37	2.50	2.63	Volts
Current	--	9.0	11.0	Amperes
Heating Time	20	--	--	Seconds

Direct Interelectrode Capacitances:

Anode to Grid	2 μf
Grid to Filament	12 μf

Critical Grid Voltage See Critical Grid Voltage
 Deionization Time (Typical) 1000 $\mu\text{seconds}$
 Ionization Time (Approx.) 10 μsecond
 Anode Voltage Drop (Typical with 8 Amperes Peak) 10 Volts

MECHANICAL:

Type of Cooling	Air, Unrestricted Convection
Mounting Position	Vertical, Base Down
Bulb	T-12
Base	Lug Location and Size per JEDEC A4-90
Net Weight	4 Ounces
Shipping Weight (Approx.)	24 Ounces

MAXIMUM RATINGS

Absolute Maximum Values

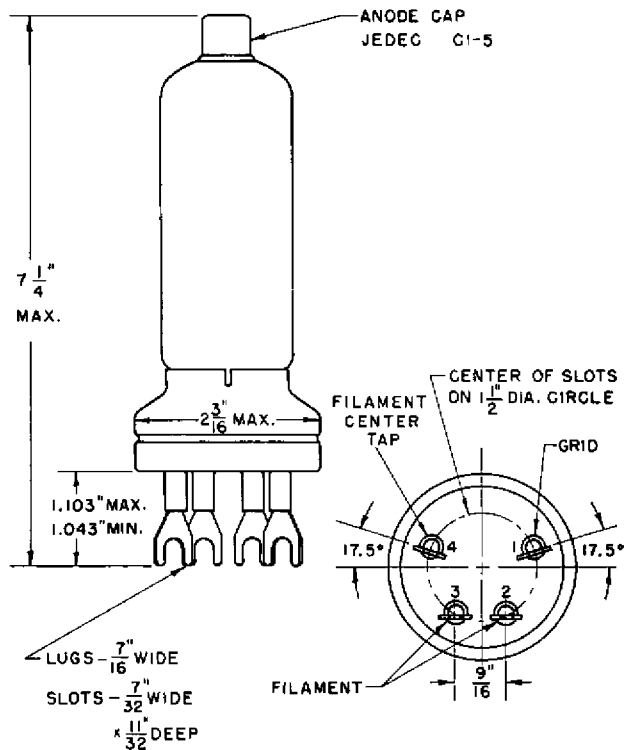
Peak Anode Voltage:			
Forward	1500	max.	Volts
Inverse	1500	max.	Volts
Cathode Current:			
Peak	30	max.	Amperes
Average	2.5	max.	Amperes
Averaging Time	5	max.	Seconds
Fault (Surge, Max. Duration 0.1 Sec.): \blacktriangle			
Connection (a) See CE-A1103	240	max.	Amperes
Connection (b) See CE-A1103	120	max.	Amperes
Connection (c) See CE-A1103	120	max.	Amperes
Negative Grid Voltage:			
Before Conduction	250	max.	Volts
During Conduction	10	max.	Volts
Positive Grid Current (Average): \blacklozenge			
Averaging Time = 1 Cycle	0.10	max.	Ampere
Maximum Frequency \blacksquare	150	max.	CPS
Condensed Mercury Temperature			
Range \blacklozenge	-40 to +80	max.	$^{\circ}\text{C}$

\blacktriangle These ratings are effective only anode return connections are made as shown in CE-A1103.

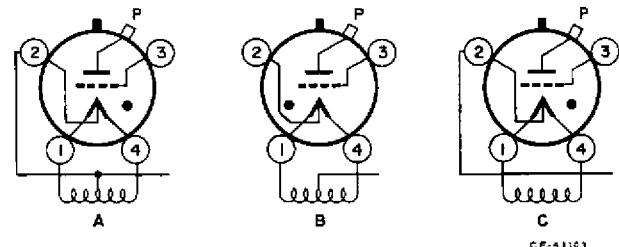
\blacklozenge This rating indicates the heat emission properties of the grid. This value of current may be safely drawn to the grid if conduction occurs only while the anode is positive. However, during the period of negative anode potential, the grid potential must also be negative to prevent electrons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

\blacklozenge Satisfactory starting and operation will result at the condensed-mercury temperature indicated. For optimum life, the condensed-mercury temperature after warm-up should be 40 to 80 $^{\circ}\text{C}$. If the tube is operated at condensed-mercury below 20 $^{\circ}\text{C}$ for extended periods, the usual circuit precautions for inert gas tubes should

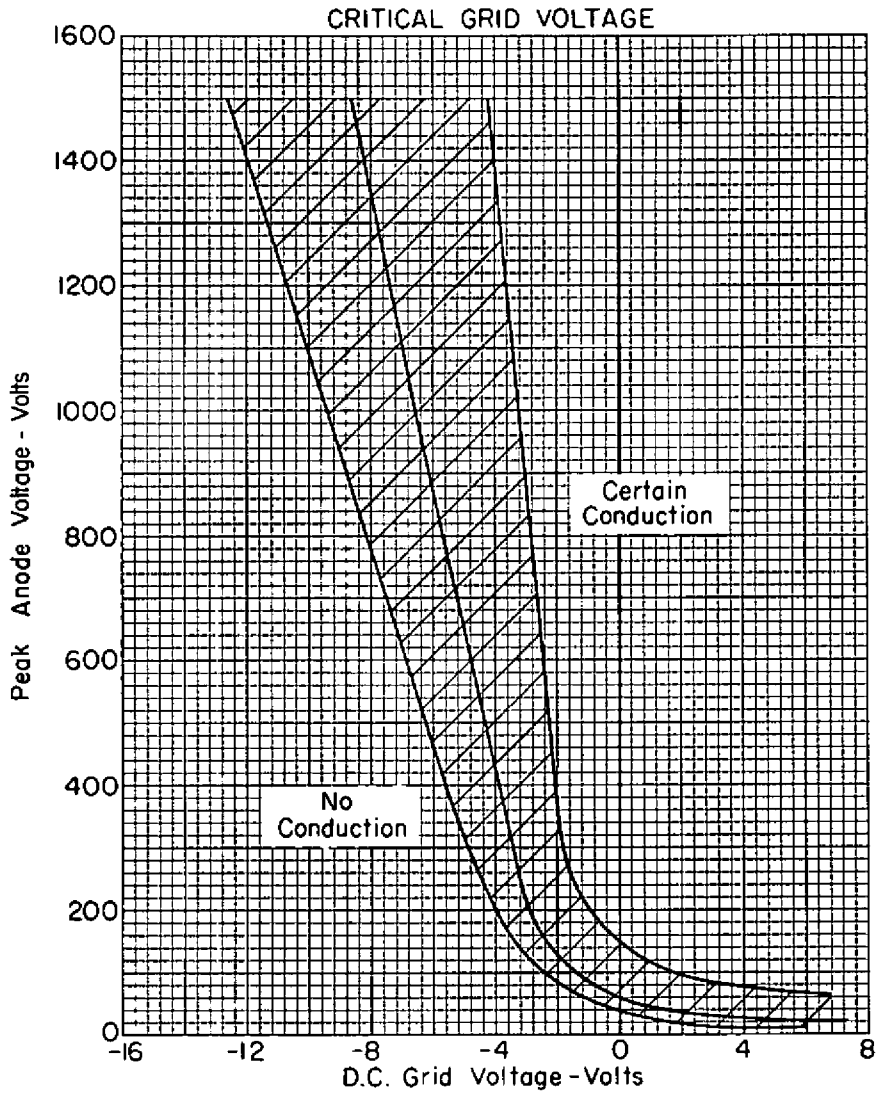
\blacksquare For higher frequency ratings, consult the tube manufacturer.



ANODE RETURN CONNECTIONS



Thyatron Section



CE-A1088