April 1, 1957

INERT-GAS MERCURY-VAPOR THYRATRON TYPE WL-6783

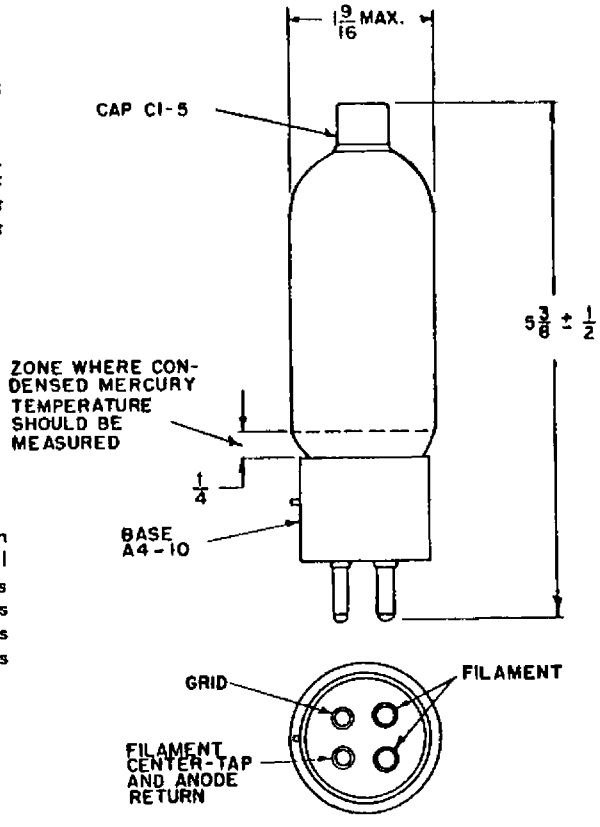
The WL-6783 is a three electrode thyratron with negative control characteristic. It is filled with a combination of an inert gas and mercury vapor. As a result of this admixture, the WL-6783 combines the long life characteristic of a mercury vapor thyratron with the fast starting and wide ambient temperature operating range typical of an inert gas thyratron. In addition, the WL-6783 operates dependably with a higher condensed mercury temperature than other inert gas and mercury vapor filled types.

The higher ambient and condensed mercury temperatures allowed permit the WL-6783 to be used in compact, enclosed equipment with less stringent cooling requirements than formerly needed.

ELECTRICAL:

Filament	Minimum	Bogey	Maximum	
Voltage	2.37	2.5	2.63	Volts
Current at 2.5 Volts	7.0	8.5	10.0	Amperes
Heating Time	10	--	--	Seconds

Critical Grid Voltage	See Control Characteristic of WL-6783	
Deionization Time, Approx.	1000	usec.
Ionization Time, Approx.	10	usec.
Anode Voltage Drop, Typical	16	Volts
Anode-Grid Capacitance	0.35	uuf
Grid-Cathode Capacitance	11.5	uuf
Anode-Cathode Capacitance	5.1	uuf



MECHANICAL:

Type of Cooling	Air, Unrestricted Convection	
Mounting Position	Vertical Base Down, to Horizontal	
Overall Length, Approx.	5-1/2	Inches
Maximum Diameter	1-9/16	Inches
Net Weight, Approx.	3	Ounces
Shipping Weight, Approx.	2	Pounds

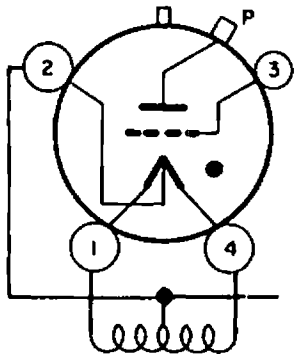
MAXIMUM RATINGS:

Absolute Values	General Control Service		Ignitor Firing Service	
Peak Anode Voltage	2500	1500	1500	max. Volts
Inverse	2500	1500	1500	max. Volts
Forward	2500	1500	1500	max. Volts
Cathode Current				
Peak	20	20	30 ~~20~~	max. Amp.
Average	1.6	1.6	- -	max. Amp.
Fault (Surge), max. Duration 0.1 sec.½ = ■				
Connection (a)	240	240		max. Amp.
Connection(b)	120	120		max. Amp.
Connection (c)	120	120		max. Amp.
Averaging Time	15	15		max. Sec.
Frequency	60 ~~150~~	60 ~~150~~	60 ~~150~~	max. Cps.
Negative Control Grid Voltage				
Before Conduction	250	250	250	max. Volts
During Conduction	10	10	10	max. Volts
Positive Control Grid Current, Average (Averaging Time, 1 Cycle)	10	10	10	max. Amp.
Temperature Range, Condensed Mercury*.	20 to 90	20 to 100	20 to 100	°C
Approx. Condensed Mercury Temperature Rise, ⊕				
For Ambient Temperature of 20°C	44 ~~50~~			°C
For Ambient Temperature of 70°C	32.5 ~~30~~			°C

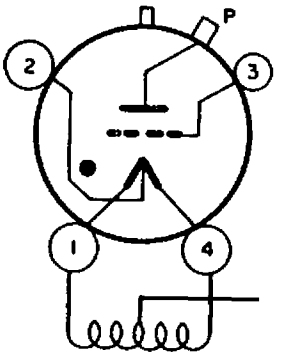
NOTES:

■ These ratings are effective only when the anode return connections are made according to the following diagrams:

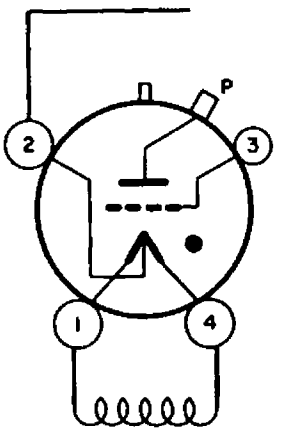
Connection a



Connection b



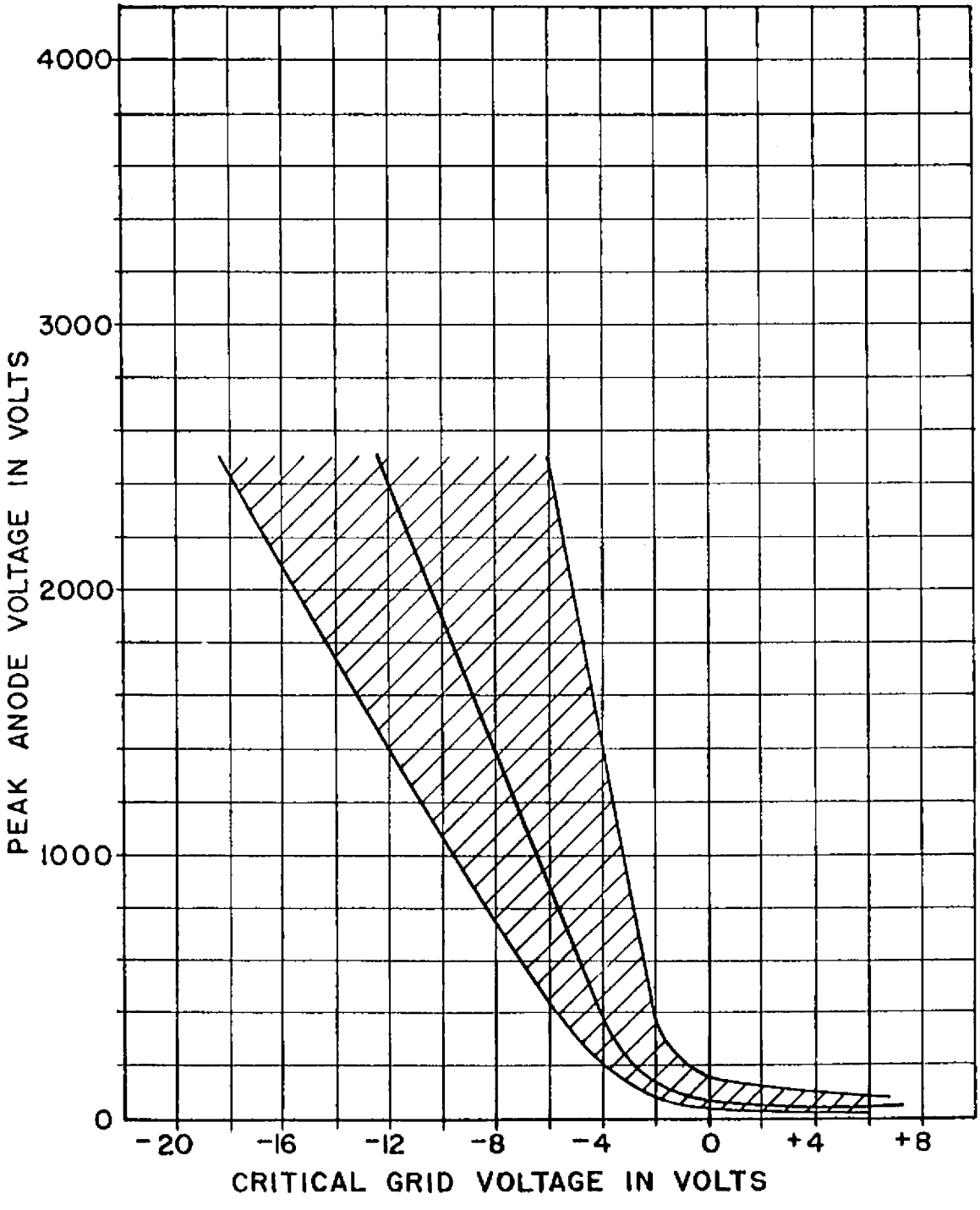
Connection c



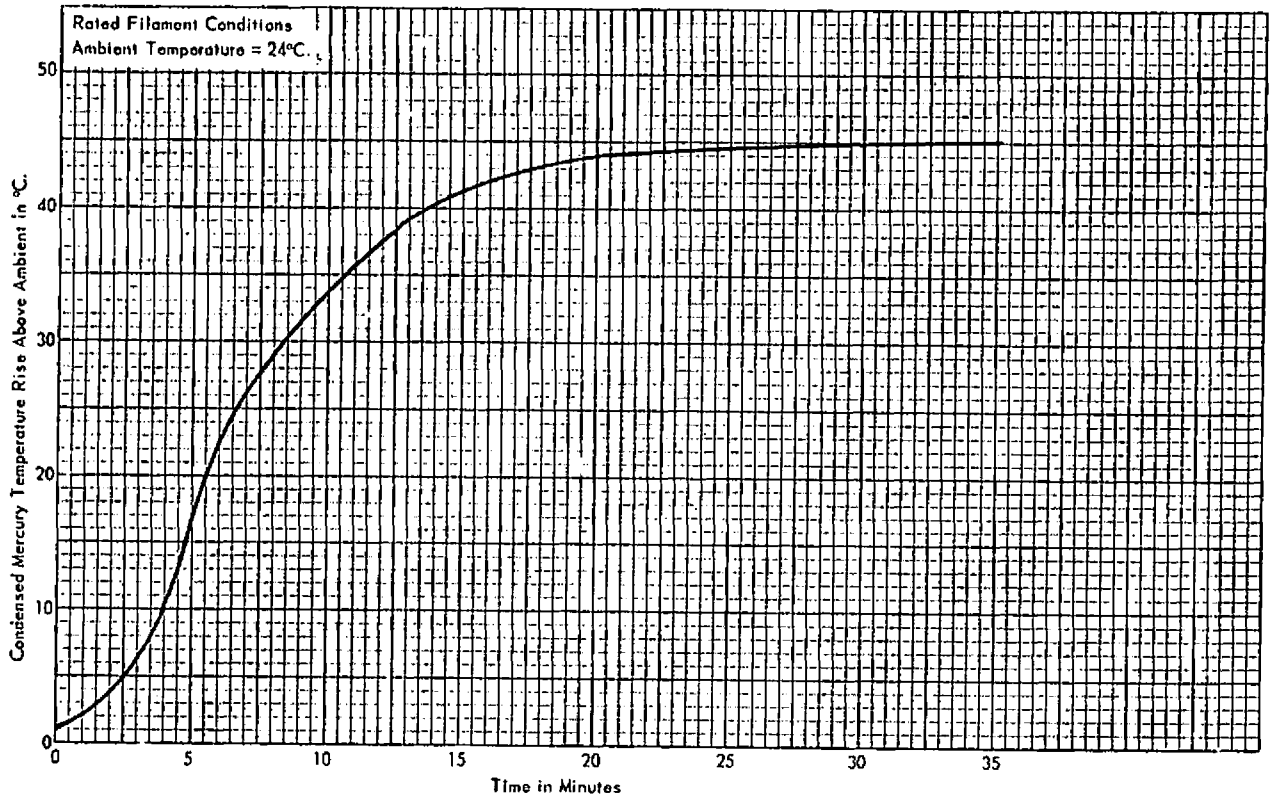
* The condensed mercury temperature is measured in the zone indicated on the outline drawing. It is necessary that the condensed mercury temperature be 20°C in order to operate the tube on mercury. If the tube is operated below a condensed mercury temperature of 20°C for extended periods, the usual circuit precautions for inert gas tube operation should be followed.

⊕ The temperature rise above ambient for intermediate ambient temperatures may be determined by linear interpolation.

CONTROL CHARACTERISTIC OF WL-6783



RATE OF CONDENSED MERCURY TEMPERATURE RISE ABOVE AMBIENT



CONDENSED MERCURY TEMPERATURE RISE ABOVE AMBIENT AS A FUNCTION OF AMBIENT TEMPERATURE