



HYDROGEN THYRATRON

**PULSING SERVICE
HIGH-ALTITUDE OPERATION**

**POSITIVE CONTROL
TRIODE TYPE**

The GL-6130 is a hydrogen thyatron especially designed for pulsing applications which require a tube that will give dependable operation at high altitudes under stringent operating conditions of high repetition rates and high peak currents. Satisfactory tube operation under such severe conditions of operation is possible because design and construction features of this tube give it the advantage of very short deionization time, low voltage drop, high peak-anode-current capability, ability

to operate over the wide ambient-temperature range of -50 to $+90$ C, and ability to operate efficiently at altitudes to as high as 50,000 feet. Another advantage is the suitability of the tube for operation without negative bias; a feature which adapts it for use in service requiring zero-bias operation with positive triggering pulses.

The tube ratings make it especially suitable for pulsing magnetron and other oscillators having power inputs up to 50 kilowatts.


Electronic
TUBE

GENERAL  ELECTRIC

TECHNICAL INFORMATION

GENERAL

Electrical	Minimum	Bogey	Maximum	
Cathode—Indirectly Heated				
Heater Voltage	5.7	6.3	6.6	Volts
Heater Current, $E_f = 6.3$ volts	2	2.3	2.5	Amperes
Heating Time	2	...	...	Minutes
Direct Interelectrode Capacitances				
Grid to Anode	..	4	...	uuf
Grid to Cathode	..	8	...	uuf
Anode Current Time Jitter	..	0.04	0.06	Microseconds
Deionization Time, approximate	..	25	...	Microseconds
Ionization Time, approximate*	..	0.6	...	Microseconds
Anode Voltage Drop	..	150	...	Volts
Grid Drive†				
Pulse Duration			6	Microseconds
Mechanical				
Type of Cooling—Convection				
Mounting Position—Any‡				
Net Weight, approximate			3	Ounces
Maximum Altitude			50,000	Feet

MAXIMUM RATINGS, Absolute Values

Maximum Peak Anode Voltage			
Inverse §	3000	Volts	
Forward π , minimum supply voltage = 800 volts d-c	3000	Volts	
Maximum Cathode Current			
Peak	35	Amperes	
Average	0.045	Amperes	
Maximum Averaging Time	1	Cycles	
Operation Factor Δ	0.3×10^9		
Maximum Negative Control-Grid Voltage			
Before Conduction	200	Volts	
Maximum Rate of Rise of Anode Current	750	Amperes per	
		Microsecond	
Ambient Temperature Limits	-50 to +90	C	

* The time interval between the point on the rising portion of the grid pulse which is 26 percent of the peak unloaded pulse amplitude, and the start of the anode current pulse.

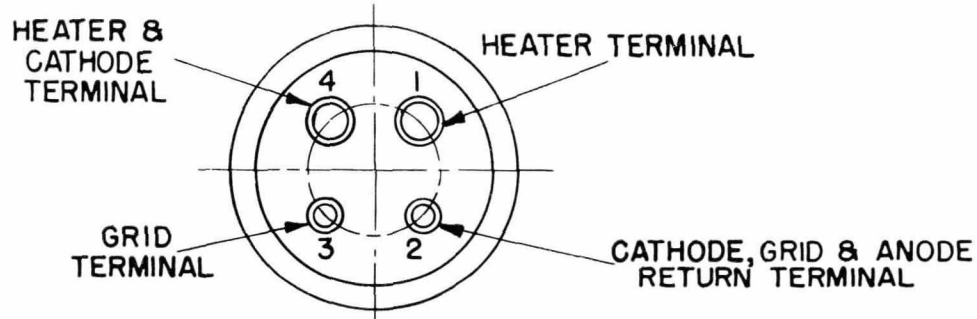
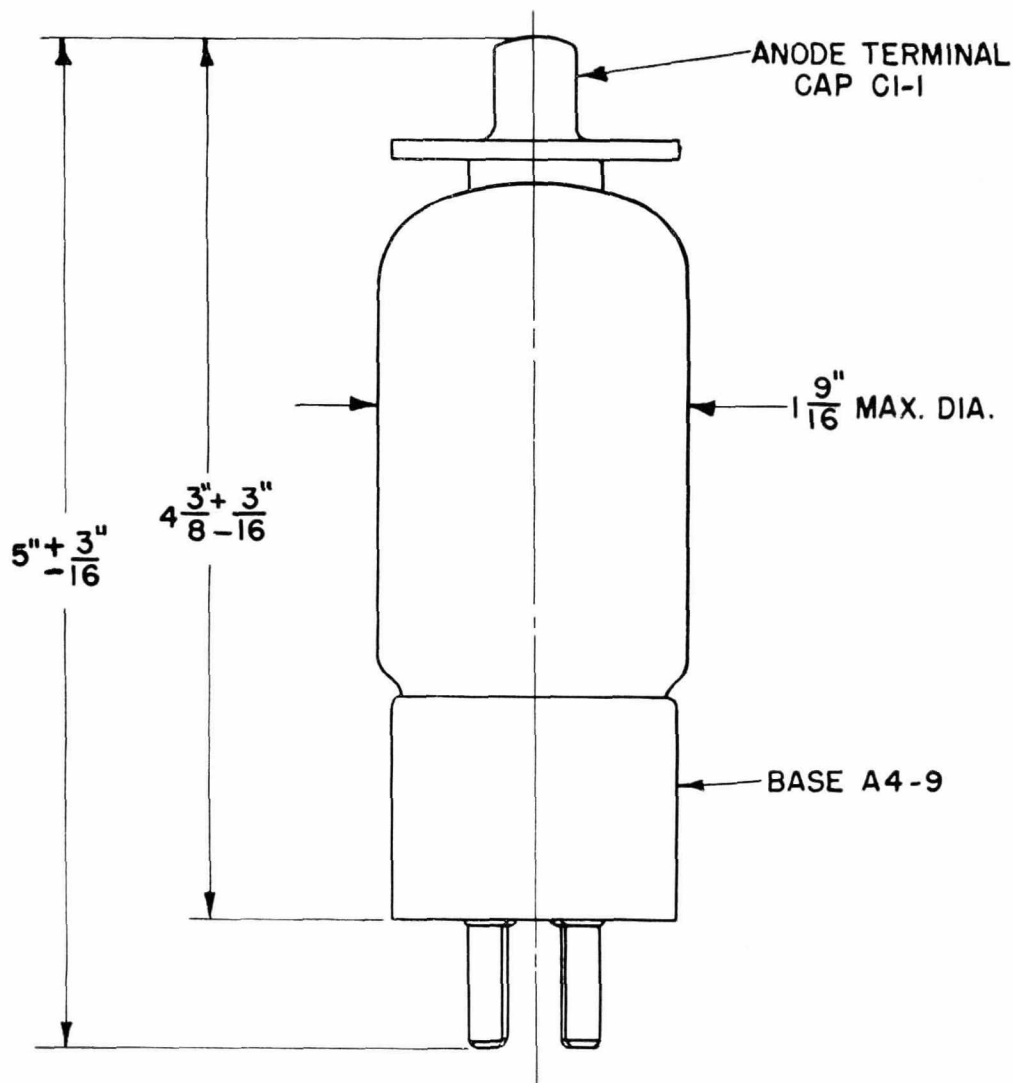
† Driver pulse measured at tube socket with thyatron grid disconnected; amplitude = 175 volts minimum, time of rise = 0.5 microsecond maximum, grid pulse duration = 2 microseconds minimum, impedance of drive circuit = 1500 ohms maximum.

‡ Clamping is permissible by the base and/or bulb only in the area up to 2 inches above the top of the base.

§ The minimum inverse anode voltage permissible is 5 percent of the peak forward voltage and the maximum is 1500 volts during the first 25 microseconds following the anode pulse.

π In applications where the anode voltage is applied instantaneously, the power-supply filter should be designed to limit the rate of application of this voltage to 75,000 volts per second.

Δ The peak forward anode voltage x pulse repetition rate (pps) x peak anode current.



TUBE DEPARTMENT
GENERAL ELECTRIC
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