CLAMPER THYRATRON

DESCRIPTION—The 8080 is a zero bias, short ionization time hydrogen thyratron specially designed for clamper service.

A hydrogen reservoir, with a separate external base connection, promotes long life and permits optimum pressure adjustments for various operating conditions. The tube employs ring-disk type construction to achieve small size and to reduce lead inductance.
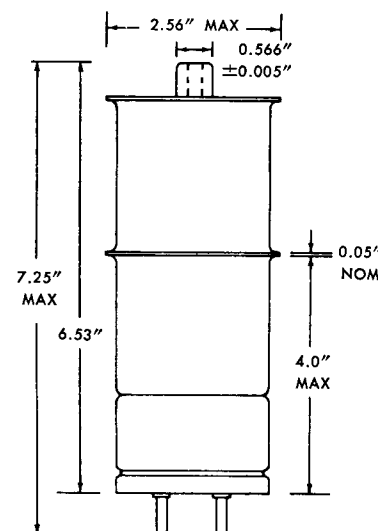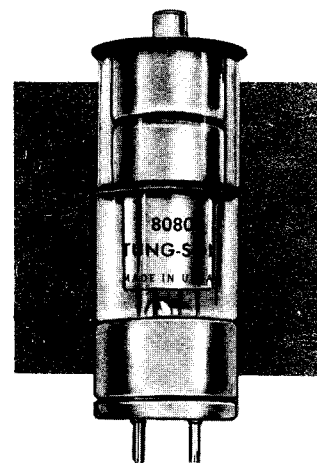

ELECTRICAL DATA

	Min	Bogey	Max	
Heater Voltage	4.75	5.0	5.25	Volts
Heater Current — Ef = 5.0 volts	7.0	—	10.5	Amperes
Cathode Heating Time	3	—	—	Minutes
Reservoir Voltage	3.5	—	5.0	Volts
Reservoir Current	3.0	—	5.0	Amperes
Reservoir Heating Time	3	—	—	Minutes
Altitude	—	—	10,000	Feet
Ambient Temperature	—55	—	+75	Degrees Centigrade

MECHANICAL DATA

Type of Cooling	Convection
Mounting Position	Vertical — base down or horizontal
Net Weight	14 ounces
Base	JEDEC A4-18, super-jumbo bayonet 4 pin

MAXIMUM RATINGS — ABSOLUTE VALUES

	Min	Max	
D-C Anode Voltage, Inverse — Note 1	—	25	Kilovolts
D-C Anode Voltage, Critical — Note 2	600	—	Volts
Cathode Current — Note 3			
RMS — Continuous	—	6.5	Amperes
RMS — Fault — Averaging time 3 seconds	—	8.0	Amperes
Peak — Continuous	—	325	Amperes
Peak — Fault	—	1,200	Amperes
Operating Frequency — Note 4	—	10,000	Pulses—per second
Grid Voltage — Peak Forward	500	3,000	Volts
Grid Voltage — Peak Inverse	—	1,500	Volts
Peak Grid Trigger Current	5	12	Amperes
Trigger Pulse Width — Note 5	0.5	—	Microsecond
Anode Breakdown Time	See Graph		
Fault Averaging Time	—	3	Seconds

OUTLINE DRAWING

2.56" MAX
0.566"
±0.005"
7.25" MAX
6.53"
0.05" NOM
4.0" MAX

CAP
A
RES — 4
K — 1
G RING
H — 3
H K RES — 2
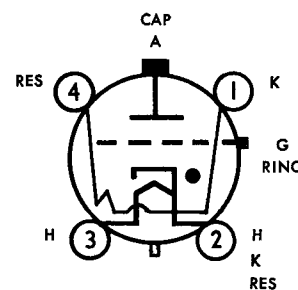
**BASING DIAGRAM
BOTTOM VIEW**

1. Inverse anode voltage in a clamper tube is defined as the peak voltage than can be impressed between anode and cathode with a polarity opposite to that producing current flow in the tube. Generally, it has the same magnitude as the maximum network voltage.

2. Critical anode voltage in the clamper tube is defined as the minimum anode voltage at which anode conduction occurs. The actual rating allows sufficient safety factor to enable minimum delay of anode conduction.

3. Cathode Current

   a. RMS cathode current is defined as the maximum effective current flowing through the clamper tube under any condition of operation for a period not exceeding the average time. The interval over which the averaging time is applied must include the period in which the maximum rms fault current is encountered.

   b. Peak fault current is defined as the maximum value of instantaneous current flowing in a clamper tube when a fault occurs in the load circuit.

   c. In determining circuit parameters, care must be observed to insure that the nominal rms current (without load faulting) is of such a value as to prevent the rms current (with load faulting) from exceeding the rating during the specified average time.

4. The maximum operating frequency does not necessarily represent the upper limit, but is the highest frequency at which tests have been conducted.

5. The trigger pulse width should not exceed the load pulse width plus the trigger pulse lead time.

Anode breakdown time is the time interval between the start of the grid pulse and the point where anode conduction takes place.