ELECTRON TUBE DEPARTMENT ■ COMPONENTS DIVISION
INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION, CLIFTON, NEW JERSEY

KUTHE KU-25 HYDROGEN THYRATRON

DESCRIPTION:

THE KU-25 IS A UNIPOTENTIAL CATHODE, 3 ELEMENT HYDROGEN FILLED THYRATRON DESIGNED FOR NETWORK DISCHARGE SERVICE. IN SUCH SERVICE, IT IS SUITABLE FOR PRODUCING PULSE OUTPUTS OF MORE THAN 1.5 MEGAWATTS AT AN AVERAGE POWER LEVEL OF MORE THAN 1.2 KW.

THE KU-25 IS EQUIPPED WITH RESERVOIR FOR LONG STABLE LIFE AND IS ESPECIALLY ADAPTED TO OPERATION AT HIGH PULSE REPETITION RATES.

ELECTRICAL DATA, GENERAL:

	Nom.	Min.	Max.	
Heater Voltage	6.3	5.9	6.7	Volts a.c.
Heater Current (At 6.3 Volts)		9.6	11.6	Amperes
Minimum Heating Time			5	Minutes

MECHANICAL DATA, GENERAL:

Mounting Position	Any
Base	Super Jumbo 4-Pin with Bayonet A4-18 with Ceramic Insert
Anode Cap	C1-43, Medium, with Corona Shield
Cooling (Note 1)	
Net Weight	12 Ounces
Dimensions	See Outline

RATINGS:

Max. Peak Anode Voltage, Forward	12.0	Kilovolts
Max. Peak Anode Voltage, Inverse (Note 2)	12.0	Kilovolts
Min. Anode Supply Voltage	3.5	Kilovolts d.c.
Max. Peak Anode Current	300	Amperes
Max. Average Anode Current	200	Milliamperes
Max. RMS Anode Current (Note 3)	7.75	Amperes a.c.
Max. epy x ib x prr	3.8×10^9	
Max. Anode Current Rate of Rise	1250	Amperes/μSecond
Peak Trigger Voltage (Note 4)		
Max. Peak Inverse Trigger Voltage	200	Volts
Max. Anode Delay Time (Note 5)	1.0	Microsecond
Max. Anode Delay Time Drift	0.15	Microsecond
Max. Time Jitter (Note 6)	0.05	Microsecond
Ambient Temperature	-50° to +90°	Cent.
Shock Rating	13°	Navy (Flyweight) Shock Machine

TYPICAL OPERATION AS PULSE MODULATOR, DC RESONANT CHARGING:

Peak Network Voltage	12.0	Kilovolts
Pulse Repetition Rate	2500	Pulses/Second
Pulse Length	0.4	Microsecond
Pulse Forming Network Impedance	48	Ohms
Trigger Voltage	200	Volts
Peak Power Output (Resistive Load 92% Zn)	736	Kilowatts
Peak Anode Current	130	Amperes
Average Anode Current	0.13	Amperes d.c.

Note 1:

Cooling permitted. However, there shall be no air blast directly on the bulb.

Note 2:

During the first 25 microseconds after conduction, the peak inverse anode voltage shall not exceed 5.0 KV.

Note 3:

The root mean square anode current shall be computed as the square root of the product of the peak current and the average current.

NOTE 4:

THE PULSE PRODUCED BY THE DRIVER CIRCUIT SHALL HAVE THE FOLLOWING CHARACTERISTICS WHEN VIEWED AT THE KU-25 SOCKET WITH THE GRID OF THE TUBE DISCONNECTED:

A.	VOLTAGE	200-300 VOLTS
B.	DURATION	2 MICROSECONDS (AT 70% POINTS)
C.	RATE OF RISE	200 VOLT/MICROSECOND (MIN.)
D.	IMPEDANCE	50-500 OHMS (MAX.)

THE LIMITS OF ANODE TIME DELAY AND ANODE TIME JITTER ARE BASED ON THE MINIMUM TRIGGER. USING THE HIGHEST PERMISSIBLE TRIGGER VOLTAGE AND LOWEST TRIGGER SOURCE IMPEDANCE MATERIALLY REDUCES THESE VALUES BELOW THE LIMITS SPECIFIED.

NOTE 5:

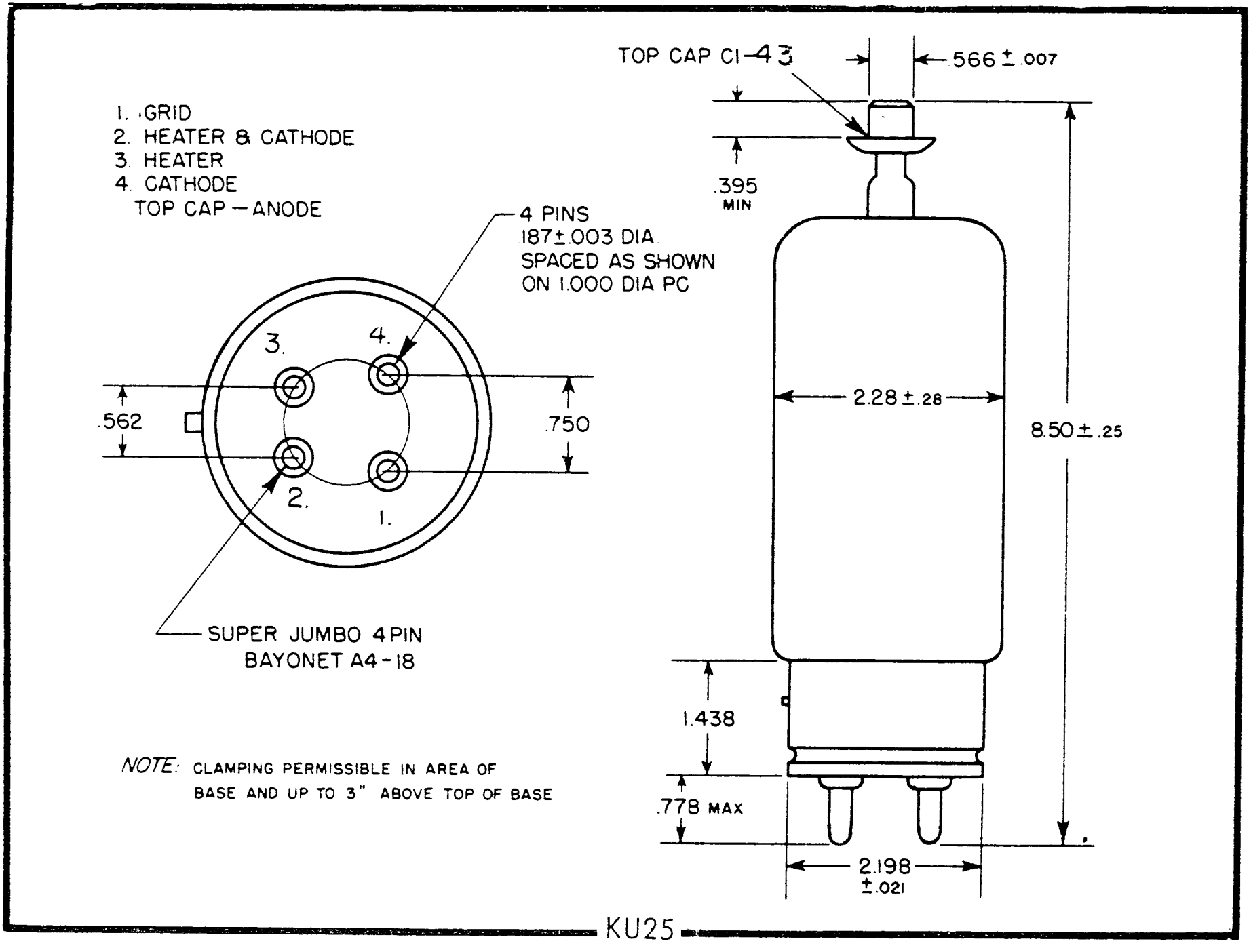
THE TIME OF ANODE DELAY IS MEASURED BETWEEN THE 26 PERCENT POINT ON THE RISING PORTION OF THE UNLOADED GRID VOLTAGE PULSE AND THE POINT AT WHICH EVIDENCE OF ANODE CONDUCTION FIRST APPEARS ON THE LOADED GRID PULSE.

NOTE 6:

TIME JITTER IS MEASURED AT THE 50 PERCENT POINT ON THE ANODE CURRENT PULSE.

ADDITIONAL INFORMATION FOR SPECIFIC APPLICATIONS CAN BE OBTAINED FROM THE

ELECTRON TUBE APPLICATIONS SECTION
ITT COMPONENTS DIVISION
POST OFFICE BOX 412
CLIFTON, NEW JERSEY


1. GRID
2. HEATER & CATHODE
3. HEATER
4. CATHODE
TOP CAP — ANODE
4 PINS
.187±.003 DIA.
SPACED AS SHOWN
ON 1.000 DIA PC
3.
4.
2.
1.
.562
.750
SUPER JUMBO 4 PIN
BAYONET A4-18
NOTE: CLAMPING PERMISSIBLE IN AREA OF
BASE AND UP TO 3" ABOVE TOP OF BASE
TOP CAP C1-43
.566±.007
.395
MIN
2.28±.28
8.50±.25
1.438
.778 MAX
2.198
±.021

KU25