



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

KUTHE
** 7666

CERAMIC HYDROGEN THYRATRON

DESCRIPTION:

THE 7666 IS A 12.5 MEGAWATT, LARGE CERAMIC HYDROGEN THYRATRON. THE CERAMIC EXTERNAL ANODE DESIGN PERMITS OPERATION AT UNUSUALLY HIGH POWER LEVELS. THE SPECIAL FEATURES OF THE 7666 INCLUDE A HYDROGEN RESERVOIR TO MAINTAIN OPTIMUM PRESSURE AND TO INSURE LONG LIFE.

ELECTRICAL DATA, GENERAL:

	<u>NOM.</u>	<u>MIN.</u>	<u>MAX.</u>	
HEATER VOLTAGE	6.3	5.8	6.8	VOLTS A.C.
HEATER CURRENT (AT 6.3 VOLTS)		14.0	22.0	AMPERES
HEATER (NOTE 1)				
RESERVOIR VOLTAGE (NOTE 2)		2.5	6.0	VOLTS
RESERVOIR CURRENT AT 4.5 VOLT		4.0	6.0	AMPERES
MINIMUM HEATING TIME				5 MINUTES

MECHANICAL DATA, GENERAL:

MOUNTING POSITION	VERTICAL ONLY, BASE DOWN
BASE	PER OUTLINE
COOLING (NOTE 3)	
NET WEIGHT	3.0 POUNDS
DIMENSIONS (SEE OUTLINE DRAWING)	

RATINGS:

MAX. PEAK ANODE VOLTAGE, FORWARD	25	KILOVOLTS
MAX. PEAK ANODE VOLTAGE, INVERSE (NOTE 4)	25	KILOVOLTS
MIN. ANODE SUPPLY VOLTAGE	5.0	KILOVOLTS D.C.
* MAX. PEAK ANODE CURRENT	1500	AMPERES
MAX. AVERAGE ANODE CURRENT	1.5	AMPERES
MAX. RMS ANODE CURRENT (NOTE 5)	40.0	AMPERES A.C.
MAX. EPY X IB X PRR	20.0 x 10 ⁹	
MAX. ANODE CURRENT RATE OF RISE	5000	AMPS./U SEC.
PEAK TRIGGER VOLTAGE (NOTE 6)		
MAX. PEAK INVERSE TRIGGER VOLTAGE	650	VOLTS
MAX. ANODE DELAY TIME (NOTE 7)	0.4	MICROSECOND
MAX. ANODE DELAY TIME DRIFT	0.25	MICROSECOND
MAX. TIME JITTER (NOTE 8)	0.005	MICROSECOND
AMBIENT TEMPERATURE	-55° to 125°	C

* INDICATES CHANGE FROM DATA SHEET DATED 7-62

** THIS TUBE WAS PREVIOUSLY DESIGNATED BY THE TYPE NUMBER KU-73.

12-62

NOTE 1:

SEE OUTLINE DRAWING.

NOTE 2:

THE OPTIMUM RESERVOIR VOLTAGE FOR OPERATION IN ACCORDANCE WITH OPERATION (1) CONDITIONS IS INSCRIBED ON THE BASE OF THE TUBE AND MUST BE HELD TO WITHIN $\pm 7.5\%$. APPLICATIONS INVOLVING OTHER OPERATING CONDITIONS WILL NECESSITATE THE REDETERMINATION OF THE OPTIMUM RESERVOIR VOLTAGE. OPERATION (1) CONDITIONS (25 KV - 1000 A - 2.5 US - 300 PPS).

NOTE 3:

IT MAY BE DESIRABLE TO EMPLOY FORCED AIR COOLING UNDER CONDITIONS OF HIGH PB NUMBER OPERATIONS. A COOLING AIR BLAST OF 10 CFM MAY BE DIRECTED INTO THE ANODE CUP.

NOTE 4:

IN PULSED OPERATION, THE PEAK INVERSE VOLTAGE, EXCLUSIVE OF A SPIKE OF .05 US MAXIMUM DURATION, SHALL NOT EXCEED 5.0 KV DURING THE FIRST 25 US FOLLOWING THE ANODE PULSE.

NOTE 5:

THE ROOT MEAN SQUARE ANODE CURRENT SHALL BE COMPUTED AS THE SQUARE ROOT OF THE PRODUCT OF PEAK CURRENT AND THE AVERAGE CURRENT.

NOTE 6:

THE DRIVER PULSE, MEASURED AT TUBE SOCKET WITH THYRATRON GRID DISCONNECTED: 550 VOLTS MINIMUM, 1000 VOLTS MAXIMUM; TR = 0.35 US MAXIMUM; GRID PULSE DURATION 2.0 US MINIMUM. IMPEDANCE OF DRIVE CIRCUIT 50 TO 200 OHMS.

NOTE 7:

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 ANODE CONDUCTION FIRST EVIDENCES ITSELF ON THE LOADED GRID PULSE.

NOTE 8:

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

ADDITIONAL INFORMATION FOR SPECIFIC APPLICATIONS CAN BE OBTAINED FROM THE

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

