

# engineering TUBE DATA

KUTHE  
\*\* 7782

from JEDEC release #3993,  
Nov. 26, 1962



*Components Division*

## CERAMIC HYDROGEN THYRATRON

### DESCRIPTION:

THE 7782/KU-71 IS A UNIPOTENTIAL CATHODE THREE ELEMENT HYDROGEN THYRATRON OF CERAMIC METAL CONSTRUCTION DESIGNED FOR USE IN COMPACT MODULATORS FOR HIGH PERFORMANCE RADARS AND FOR MISSILE APPLICATIONS.

### 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)    | 5.5         | 3.5         | 7.0         | AMPERES    |
| * RESERVOIR VOLTAGE                | 6.3         | 5.8         | 6.8         | VOLTS A.C. |
| * RESERVOIR CURRENT (AT 6.3 VOLTS) | 1.5         | 1.0         | 2.5         | AMPERES    |
| * MINIMUM HEATING TIME             |             | 3           |             | MINUTES    |

### MECHANICAL DATA, GENERAL:

|                   |             |
|-------------------|-------------|
| MOUNTING POSITION | ANY         |
| DIMENSIONS        | PER OUTLINE |

### RATINGS:

|                                             |                   |                |
|---------------------------------------------|-------------------|----------------|
| * MAX. PEAK ANODE VOLTAGE, FORWARD          | 12.0              | KILOVOLTS      |
| * MAX. PEAK ANODE VOLTAGE, INVERSE (NOTE 1) | 12.0              | KILOVOLTS      |
| MIN. ANODE SUPPLY VOLTAGE                   | 0.3               | KILOVOLTS D.C. |
| MAX. PEAK ANODE CURRENT                     | 200.0             | AMPERES        |
| MAX. AVERAGE ANODE CURRENT                  | 200.0             | MILLIAMPERES   |
| MAX. RMS ANODE CURRENT (NOTE 2)             | 5.0               | AMPERES A.C.   |
| MAX. EBY X IBX X PRR (PB)                   | $4.0 \times 10^9$ |                |
| MAX. ANODE CURRENT, RATE OF RISE            | 2000              | AMPS./U SEC.   |
| PEAK TRIGGER VOLTAGE (NOTE 3)               |                   |                |
| MAX. PEAK INVERSE TRIGGER VOLTAGE           | 200               | VOLTS          |
| MAX. ANODE DELAY TIME (NOTE 4)              | 0.50              | U SECOND       |
| MAX. ANODE DELAY TIME DRIFT                 | 0.10              | U SECOND       |
| MAX. TIME JITTER (NOTE 5)                   | .005              | U SECOND       |
| AMBIENT TEMPERATURE                         | -50° TO 150°      | C              |
| SHOCK RATING                                | 500               | G.             |
| VIBRATION                                   | 30                | G.             |

\* INDICATES CHANGES FROM DATA SHEET DATED 10-60

\*\* THIS TUBE WAS PREVIOUSLY DESIGNATED BY THE TYPE NUMBER KU-71.

7-62



ELECTRON TUBE DEPARTMENT  
**COMPONENTS DIVISION**

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

P. O. BOX 412, CLIFTON, NEW JERSEY

NOTE 1:

THE PEAK INVERSE VOLTAGE SHOULD NOT EXCEED 2.5 KV DURING THE FIRST 25 MICRO-SECONDS AFTER THE PULSE.

NOTE 2:

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 3:

THE DRIVER PULSE, MEASURED AT THE TUBE SOCKET WITH THE THYRATRON GRID DISCONNECTED SHOULD HAVE THE FOLLOWING CHARACTERISTICS:

- |                 |                                       |
|-----------------|---------------------------------------|
| A. VOLTAGE      | 175 VOLTS (MIN.)                      |
| B. DURATION     | 2 MICROSECONDS (AT 70 PERCENT POINTS) |
| C. IMPEDANCE    | 1500 OHMS (MAX.)                      |
| D. TIME OF RISE | 0.5 MICROSECOND (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 4:

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.

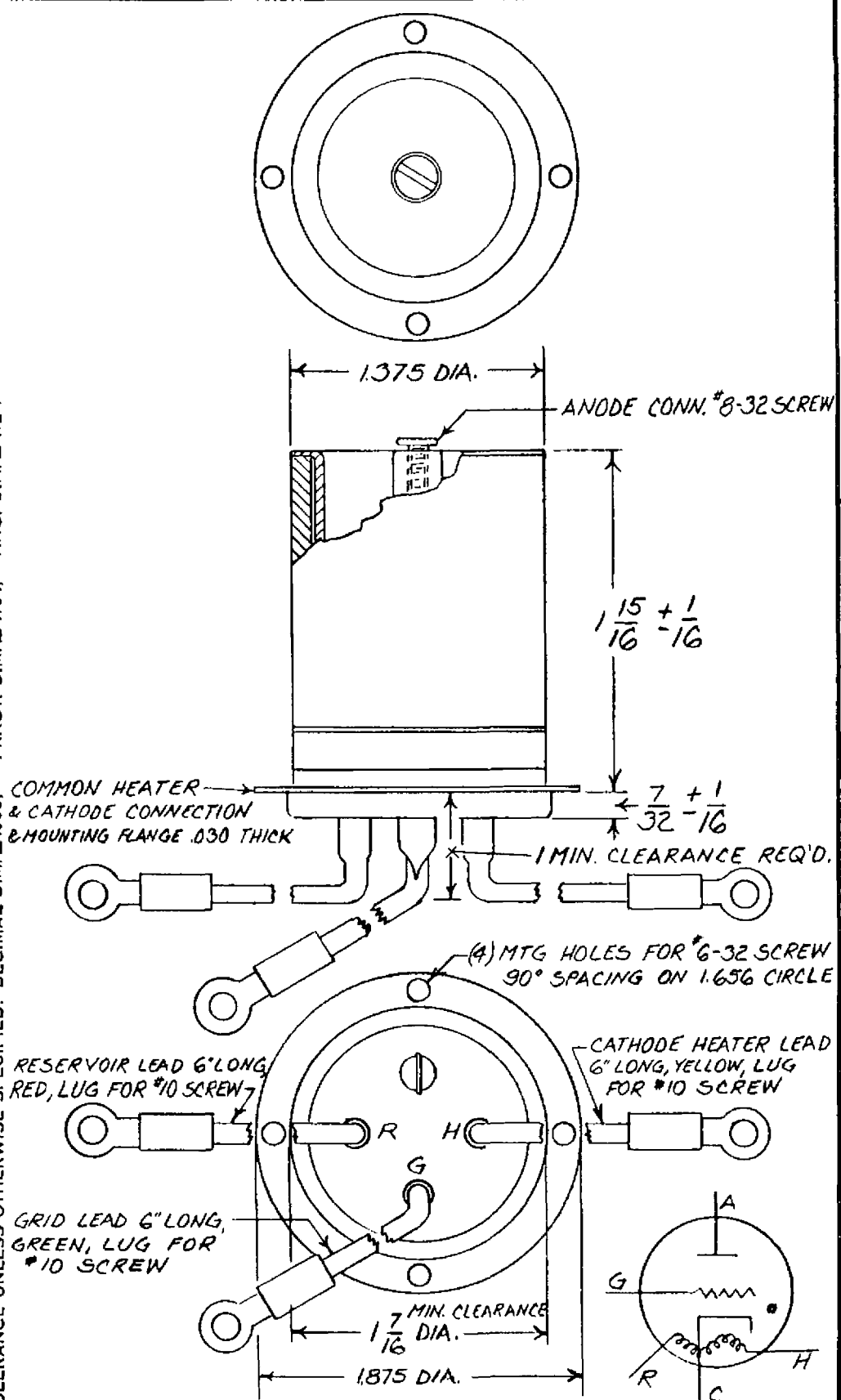
NOTE 5:

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

TOLERANCE UNLESS OTHERWISE SPECIFIED: DECIMAL DIM.  $\pm .005$ ; FRACT. DIM.  $\pm 1/64$ ; ANG. DIM.  $\pm 1/2^\circ$ .



OUTLINE 7782