



ELECTRON TUBE DIVISION

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

BOX 100 EASTON, PA. 18043

**7665
HYDROGEN
THYRATRON

CERAMIC HYDROGEN THYRATRON

DESCRIPTION:

The 7665 is a unipotential cathode three element hydrogen thyatron equipped with a ceramic envelope. This electron tube features a hydrogen reservoir which may be connected directly across the cathode heater supply.

The ruggedness and small size possible with ceramic construction suits this thyatron to the compact modulators of high performance radars.

<u>ELECTRICAL DATA, GENERAL</u>	<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) Heater (Note 1)	6.0	5.5	6.5	Amperes
*Reservoir Voltage (Note 2)	6.3	5.8	6.8	Volts a.c.
*Reservoir Current at 6.3 Volt	1.5	1.0	2.0	Amperes
*Minimum Heating Time		3		Minutes

MECHANICAL DATA, GENERAL

Mounting Position	Any
Base	Per Outline Dwg.
Cooling (Note 3)	
Net Weight	0.5 Pounds
Dimensions	Per Outline

RATINGS:

Max. Peak Anode Voltage, forward	20.0	Kilovolts
Max. Peak Anode Voltage, inverse (Note 4)	20.0	Kilovolts
*Min. Anode supply voltage	1.0	Kilovolts d.c.
Max. Peak anode current	350	Amperes
Max. Average anode current	500	Milliamperes
Max. RMS anode current (Note 5)	6.5	Amperes a.c.
Max. epy x ib x prr	7.0×10^9	
Max. Anode current rate of rise	2000	Amps./u sec.
Peak trigger voltage (Note 6)		
Max. Anode delay time (Note 7)	0.4	Microsecond
Max. Anode delay time drift	0.1	Microsecond
Max. Time jitter (Note 8)	.005	Microsecond
Ambient Temperature	-55° to + 150°	C

*Indicates changes from data sheet dated 8-61

**This tube was previously designated by the Type Number KU-72

NOTE: Change in outline drawing from that of 7/62

KUTHE
7665

Note 1:

See outline drawing.

Note 2:

Reservoir connected externally to cathode heater when tube installation is made in equipment.

Note 3:

Cooling of the anode is permissible.

Note 4:

During the first 25 microseconds after conduction, the peak inverse anode voltage shall not exceed 5 kv.

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 pulse produced by the driver circuit shall have the following characteristics when viewed at the 7665 socket with the tube grid disconnected.

A. Amplitude	200-500 Volts
B. Duration	2 Microseconds (at 70% points)
C. Rate of Rise	1800 Volts/Microsecond (min.)
D. Impedance	50-500 Ohms

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 7:

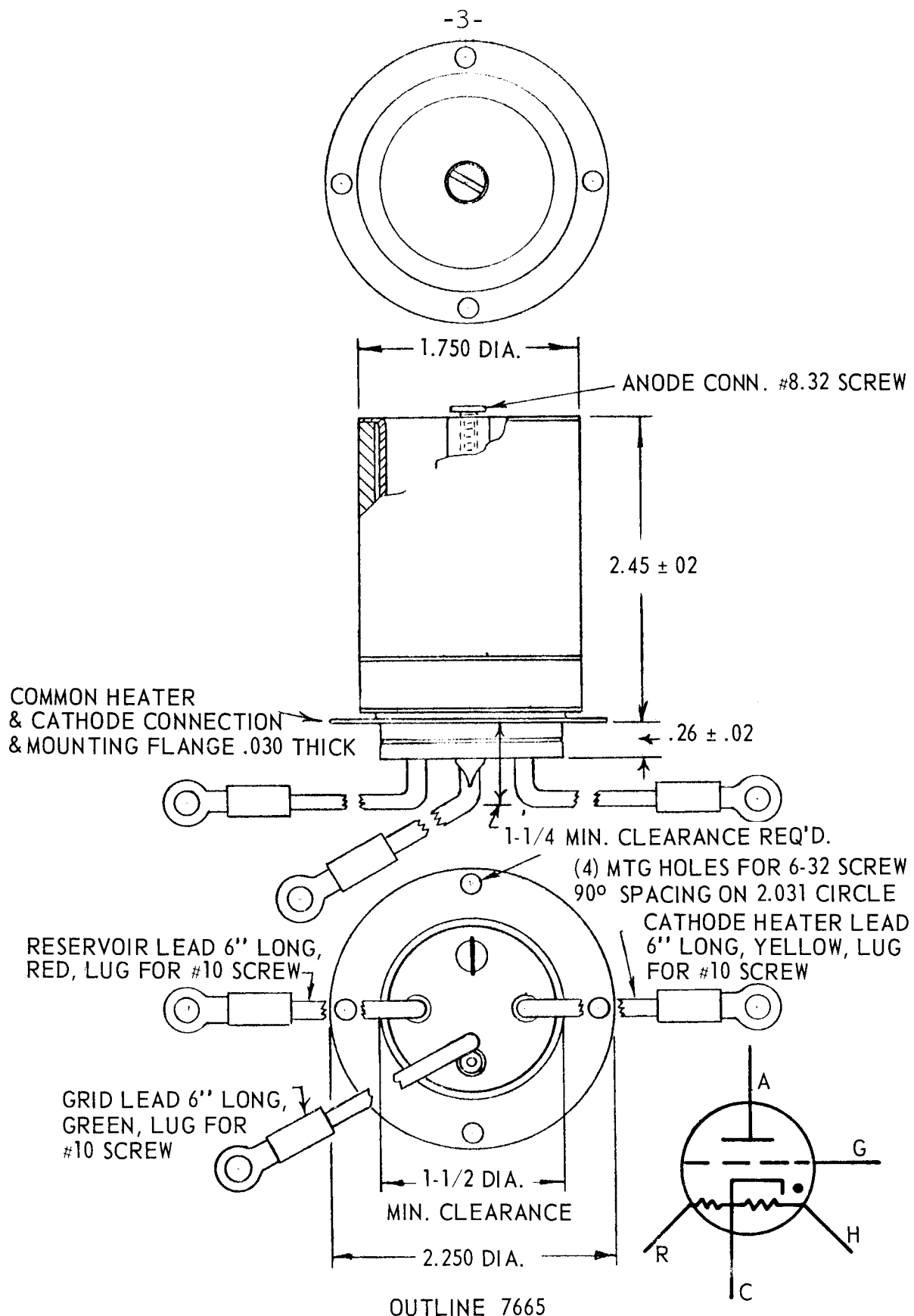
The time of anode delay is measured between the 26 percent point on the rising portion of the unloaded grid voltage pulse and the point at which anode conduction first evidences itself on the loaded grid pulse.

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

Electron Tube Applications Section
ITT Electron Tube Division
Post Office Box 100
Easton, Pennsylvania 18043



2-64