



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

* F-7341
TRAVELING
WAVE TUBE

TENTATIVE

DESCRIPTION:

The F-7341 is a 5 watt pulse traveling wave amplifier tube having 25 db gain and 8000 to 9600 mc frequency range. It is constructed in a rugged metal envelope with a helix type slow wave structure. The integral matching circuit is in 50 ohm coaxial line and is provided with type "N" connectors. The tube is self-aligning in the external solenoid which is required to provide a uniform magnetic field. A convergent beam gun and oxide impregnated cathode are used.

The tube is mechanically and electrically similar to type F-6996 except that a mesh type grid, suitable for grid pulsing, is provided in place of the focus element used in F-6996. Operation is limited by this grid to pulse service, at a maximum duty cycle of .04.

ELECTRICAL RATINGS, ABSOLUTE VALUES

Heater Voltage	6.3 ($\pm 10\%$)	volts
Heater Current	2.3	amperes
Maximum Anode Voltage (Note 1)	3400	volts
Maximum Shell Current (Note 2)	20	ma peak
Maximum Collector Voltage (Note 3)	3500	volts
Maximum Collector Dissipation (Note 4)	10	watts
Maximum Duty Cycle	.04	
Maximum Grid Voltage (Note 5)		
Negative	-100	volts
Positive	+150	volts peak
Maximum Grid Current	6	ma peak

ELECTRICAL INFORMATION:

Minimum Frequency	8000	mc
Maximum Frequency	9600	mc
Minimum Cold Insertion Loss (Note 7)	50	db
Capacitance - Grid to all other elements	15	μmf max.

MECHANICAL INFORMATION:

Type of Cathode	Oxide Impregnated Unipotential
Base, Small Shell Duodecal, 6 Pin (Note 6)	JETEC B6-63
Type of Envelope	Metal
Magnetic Field Strength	1000 gauss
Length of Magnetic Field	6.75 inches uniform
Mounting Position	Any
Weight (not including magnet)	1 lb. 7 oz.
R-F Input and Output Impedance	50 ohm coax.
Type Connector	Type "N" Jack UG-23 B/U
Type of Cooling	See Note 4
Glass Temperature	160 °C max.

TYPICAL OPERATION AS POWER AMPLIFIER:

Anode Voltage	3200 volts
Shell Current	10 ma peak
Collector Voltage	3200 volts
Collector Current	50 ma peak
Grid Voltage	
Bias	0 volts
Applied Voltage Pulse	120 volts peak
Grid Current	3 ma peak
Power Output	5 watts nominal
Gain	25 db nominal
Duty Cycle	.03

- Note 1: All voltages shown are with respect to cathode. The shell is normally operated at approximately ground potential and the d-c connection is made to the shell of the solenoid. Anode and helix are connected internally to the shell.
- Note 2: Initial adjustments of voltage and magnetic field may be made at low duty cycles. 20 ma shell current must not be exceeded at maximum duty cycle (.04).
- Note 3: The collector is normally connected to the shell. A viewing resistor (recommended not to exceed 200 ohms) can be conveniently inserted in this connection.
- Note 4: Convection cooling of the tube is adequate at sea level and ambients below 30°C when air circulation is not restricted. Under more severe environments, 10 cfm (or equivalent at altitudes) should be provided through the collector radiator. Cooling provisions for the solenoid are separate from the tube requirement.
- Note 5: Positive voltage must not be applied to the grid in the absence of anode voltage.
- Note 6: A molded silicone rubber base, with flying leads, can be provided where altitude conditions must be met.
- Note 7: The minimum cold insertion loss applies for grid voltage of -10 volts or more negative.

Additional information for specific applications can be obtained from the

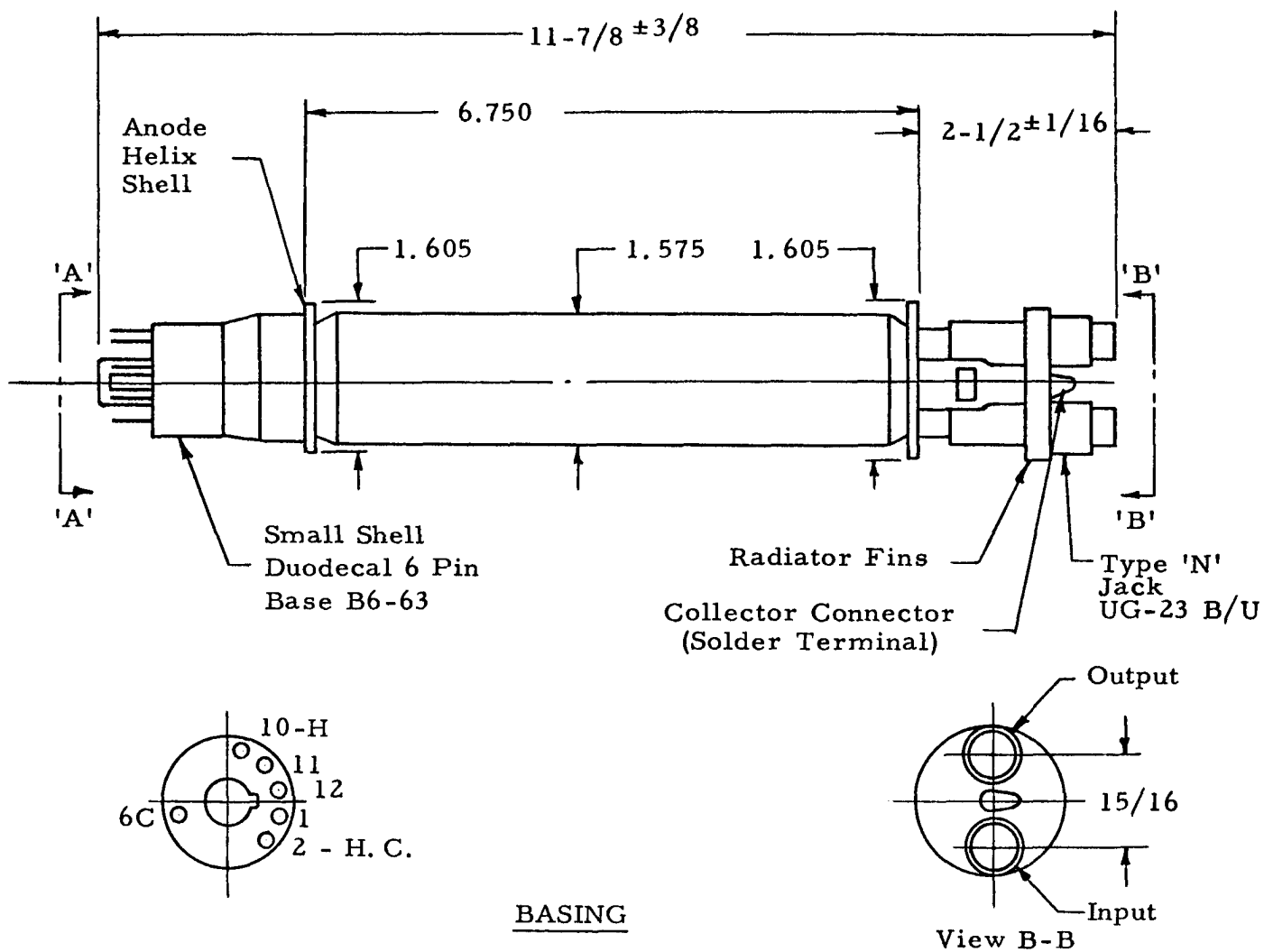
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- 4 -



BASING

<u>PIN</u>	<u>ELEMENT</u>
1	No Conn.
2	Heater-Cathode
6	Grid
10	Heater
11	No conn.
12	No conn.

OUTLINE