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

* F-7524 TRAVELING WAVE TUBE

TENTATIVE

DESCRIPTION:

The F-7524 is a 5 watt CW traveling wave amplifier tube having 20 db gain and 8.0 to 12.0 kmc frequency range. It is constructed in a rugged metal ceramic envelope with a helix type slow wave structure. The integral matching circuit is in 50 ohm coaxial line and is provided with female TNC 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 suitable for either CW or pulse service.

ELECTRICAL RATINGS, ABSOLUTE VALUES:

Heater Voltage	6.3 (±5%)	volts
Heater Current	1.7	amperes
Maximum Anode Voltage (Note 1)	4000	volts
Maximum Helix Current (Note 2)	2	ma
Maximum Collector Dissipation (beam power)	240	watts
Maximum Control Electrode Voltage (Note 3)	-500	volts

ELECTRICAL INFORMATION:

Maximum Frequency	12.0	kmc
Minimum Frequency	8.0	kmc
Minimum Cold Transmission Loss	50	db
Capacitance		
Control Electrode to All Elements	10	μμf, max.

MECHANICAL INFORMATION:

Type of Cathode	Oxide Coated Unipotential	
Gun Connections	Flying Leads	
R-F Connections	Female TNC Connectors	
Magnetic Field Strength (nominal)	1200	gauss
Mounting Position	Any	
Weight (Tube only)	1	pound
Type of Cooling	Dependent on package	

* FORMERLY D-2005

TYPICAL OPERATION:

Anode Voltage	3600	volts
Anode Current	50	ma
Helix Current	0.5	ma
Control Electrode Voltage (Note 4)	-30	volts
Power Output	5	watts nominal
Gain	20	db nominal
Duty Cycle (Note 4)		
R-F	Variable to 1.0	
Beam	1.0	

Note 1: All voltages shown are with respect to cathode. Anode and collector are connected internally to the shell, and the outer coax conductor of the r-f connections is also at shell potential. The helix is connected to the center conductor of the coax line and a d-c connection to the helix must be provided externally in the r-f circuitry.

Note 2: The helix current should, in general, be minimized and must be less than the maximum rating. The control electrode voltage and magnetic field (solenoid current) can be properly adjusted before connection of r-f cables by monitoring current to the center coax conductor. It is desirable, when possible, to monitor this current during operation and to provide overload protection. In pulsed beam operation, the peak helix current may exceed 2 ma but care should be taken to operate at reasonably low values and average current must not exceed 2 ma.

Note 3: The control electrode voltage is adjusted for best transmission for CW operation (normally about -30 volts). Beam gate off can be accomplished by applying voltage of -400 to -500 volts. Operation in the region of control electrode voltage between approximately -50 volts and -400 volts is not permitted.

Note 4: Gated beam operation can also be utilized by applying -400 to -500 volts to the control electrode for gate off and approximately -30 volts (this value adjusted for best transmission) for gate on. In this type of operation, the values of power output, anode current, and helix current become peak values.

Additional information for specific applications can be obtained from the

Electron Tube Applications Section
ITT Components Division
Box 412 - Clifton, New Jersey

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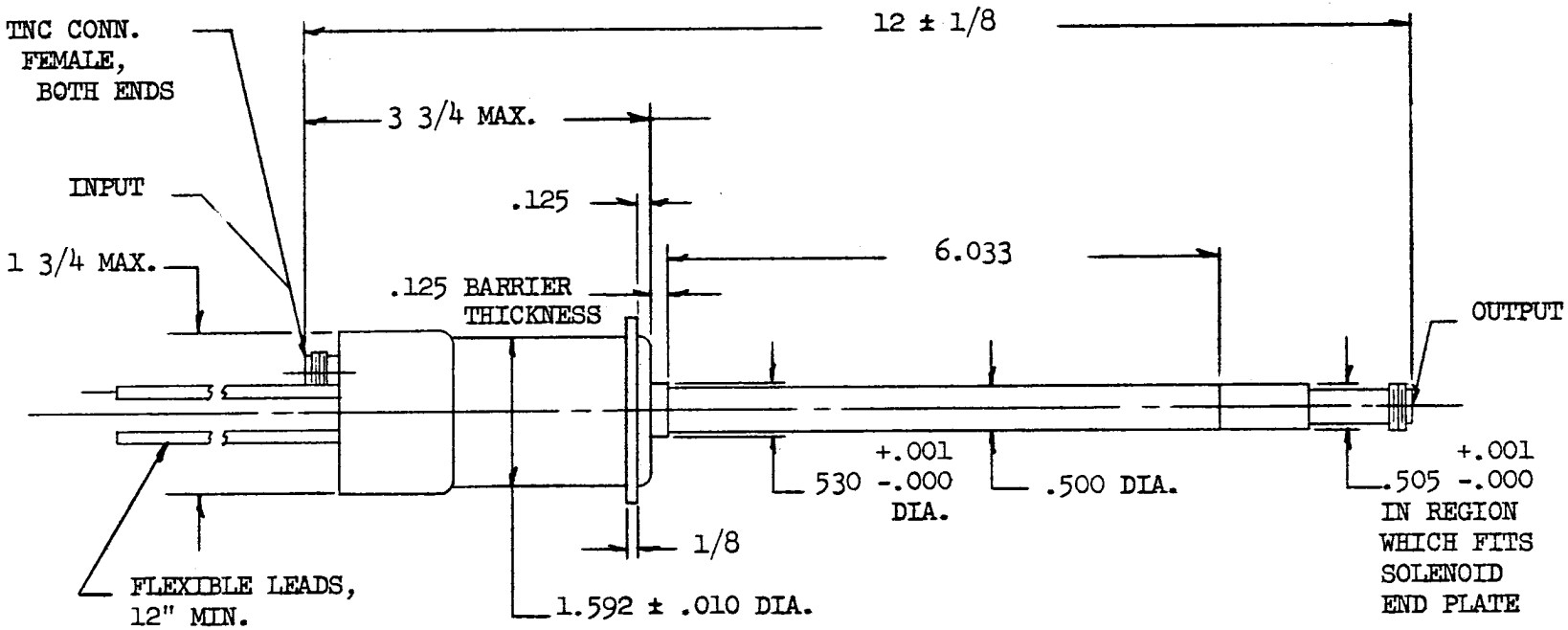

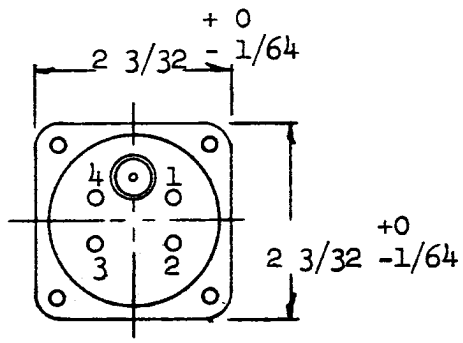

PIN	COLOR CODE	CONNECTIONS
2	GREEN	FOCUS
4	BROWN	HEATER
1	YELLOW	HEATER - CATHODE
3	BLACK	ANODE

OUTLINE F-7524 T.W.T.