



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

D-2009
TRAVELING
WAVE TUBE

TENTATIVE

DESCRIPTION:

The D-2009 is a pulse traveling wave amplifier tube mounted integral with a solenoid which provides the magnetic field required to define the path of the electron beam.

The tube is designed for use as a pulsed r-f amplifier in the frequency range of 3950 to 8000 megacycles per second and includes a control grid for pulsing the electron beam.

The D-2009 is of all-metal shell construction and is provided with input and output coaxial cables and connectors for r-f connections.

ELECTRICAL:

Heater for oxide-coated, unipotential cathode

Voltage	6.3 ±10%	volts
Current	2.5	amperes
Frequency	3950 to 8000	mc
Gain (Note 1)	33	db
Peak Power Output (Note 1)	2	watts
Inter-electrode Capacitance		
Grid to all other electrodes	25	μfd

MECHANICAL:

Mount	Special
Mounting Position	Any
Base	Moulded Rubber
R-F Circuit Connectors	Flexible Leads
Type of Cooling	TNC Male
	Air

MAXIMUM RATINGS:

Cathode Voltage with respect to ground (Note 2)	-2500	volts
Peak Cathode Current	65	ma
Grid Voltage with respect to cathode (Note 3)		
for cut-off (10 db loss minimum through tube)	0	volts, min.
for beam-on	+150	volts, max.
Helix Current (Note 4)	1	ma average
Beam on Duty Cycle	.04	
R-F Power Input	1.0	watt avg.

TYPICAL OPERATION:

Frequency	4500	mc
Cathode Voltage with respect to ground	2350	volts
Peak Cathode Current	55	ma
Grid Voltage with respect to cathode		
Beam cut-off	0	volts
Beam-on	+115	volts
Peak Helix-Current	6	ma
Peak Shell Current	53	ma
Beam on Duty Cycle	.03	
Peak Power Output	4	watts
Gain	35	db
Solenoid voltage	26	volts
Solenoid current	9	amps
Air flow	0.4	lbs/min.

Note 1: Minimum performance over the frequency band of 3950 to 5850 mc is 35 db gain; 25 db gain from 3950 to 8000 mc.

Note 2: Anode and collector are connected internally to the shell, and the outer coaxial 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 3: Positive voltage must not be applied to the grid in the absence of anode voltage.

Note 4: Initial adjustments of voltage and magnetic field may be made at low duty cycles. 1 ma average helix current must not be exceeded at maximum duty cycle (.04).

CAUTION: The solenoid must be in operation before the beam voltage is applied.

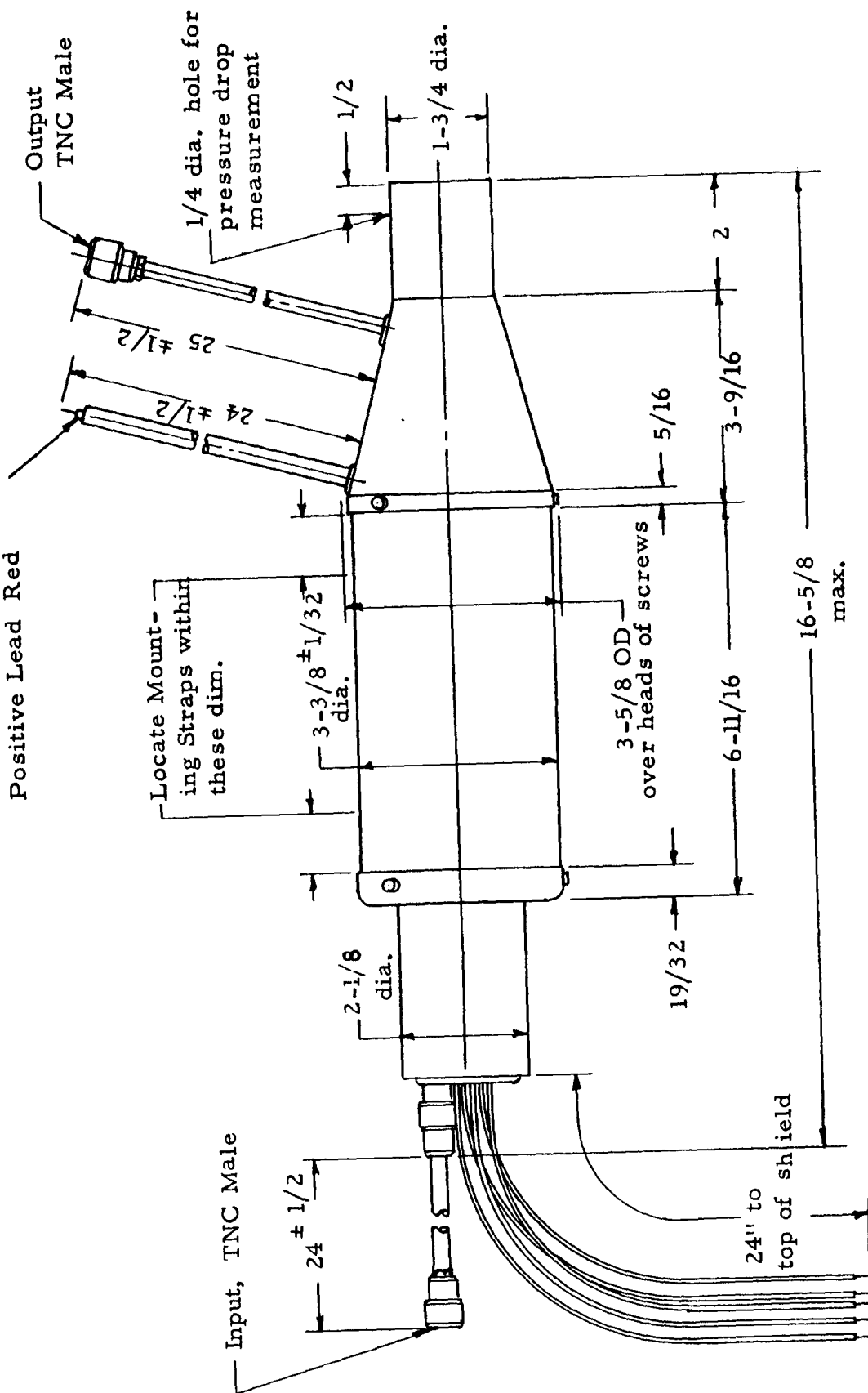
Additional information for specific applications can be obtained from the

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



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Solenoid Leads
Positive Lead Red



Color	Conn.	Center conductor of r-f output cable is conn. to the helix
Green	Grid	
Yellow	N. C.	
Brown	Cathode	
Brown	Heater	
Black	Heater	
	Anode, Capsule, Collector	

TRAVELING WAVE TUBE
TYPE D-2009