



# ELECTRON TUBE DIVISION

CLIFTON, NEW JERSEY

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

**7640  
TRAVELING  
WAVE TUBE**

## TENTATIVE

### GENERAL DESCRIPTION:

The 7640 is a 1000 watt pulse traveling wave amplifier tube having 30db gain and designed primarily for use in the 2000 to 4000 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 UG 19 B/U Type connectors. The tube is focused by a periodic permanent magnet which is integral with the tube. A convergent beam gun and oxide impregnated cathode are used. Duty cycles up to .01 and pulse widths up to 100 microseconds can be used.

### ELECTRICAL RATINGS, ABSOLUTE VALUES

Heater Voltage	6.3 (+10%)	volts	Maximum R-F Input Power	2	watts average
Heater Current	3.0	amperes	Maximum R-F Output Power	30	watts average
Maximum Anode Voltage (Note 1)	8000	volts	Maximum Duty Cycle	.01	
Maximum Shell Current	0.8	ampere peak	Maximum Pulse Width (beam)	100	microseconds
Maximum Collector Voltage	8000	volts	Maximum Cathode Current	2.0	ampere peak
Maximum Collector Dissipation	160	watts average			

### ELECTRICAL INFORMATION

Maximum Frequency (Note 2)	4000	mc	Minimum Cold Transmission Loss	50	db
Minimum Frequency (Note 2)	2000	mc			

### MECHANICAL INFORMATION

Type of Cathode Base	Oxide Impregnated Unipotential	Weight	10 pounds	maximum
Type of Envelope	JETEC Designation B12-43	R-F Connections	UG-19 B/U	
Mounting Position	Metal	Cooling Data	2 cfm of air	
	Any			

### TYPICAL OPERATION AS POWER AMPLIFIER

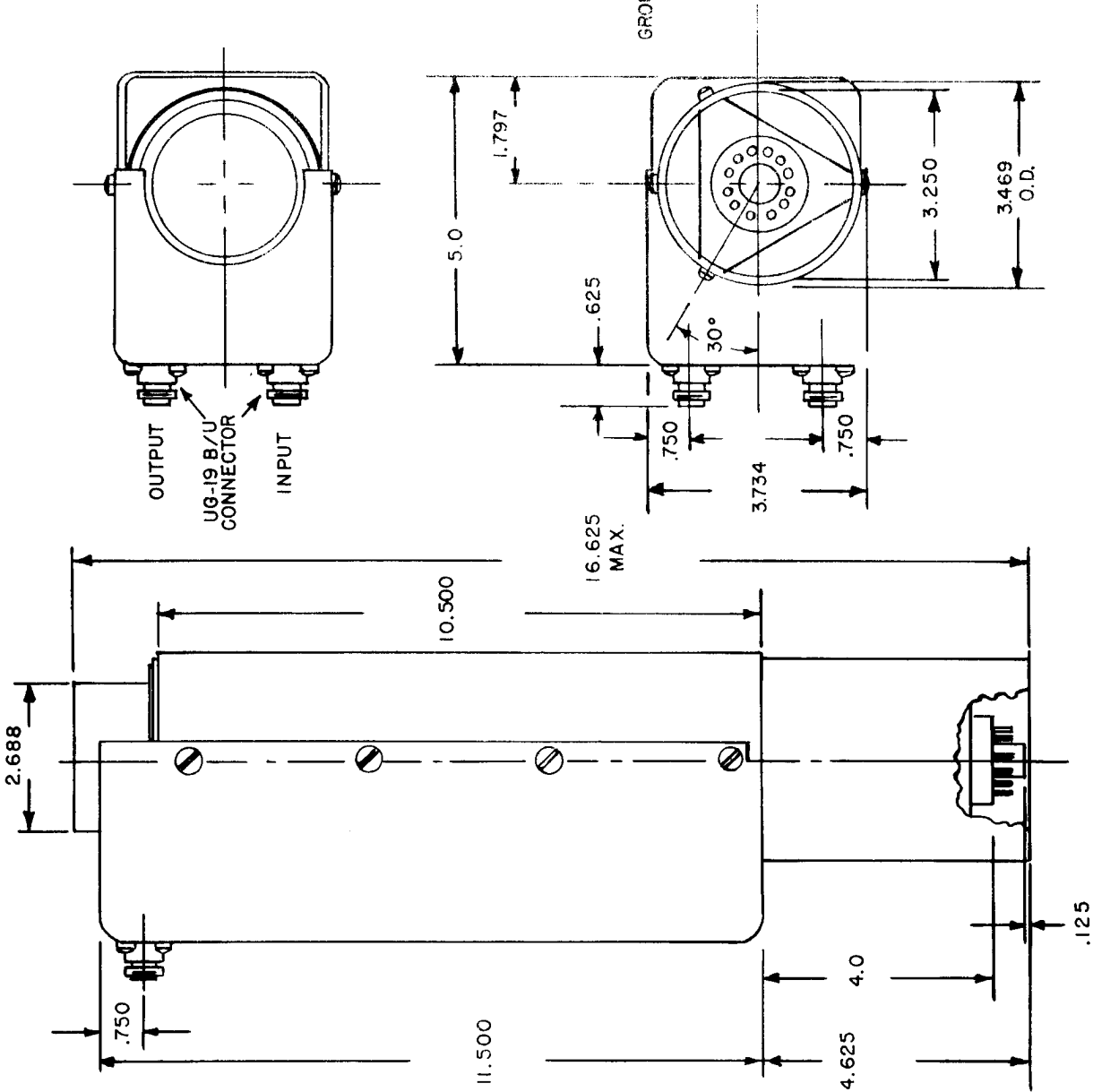
Frequency	2000 to 4000	mc	Power Output (Minimum)	1000	watts peak
Anode Voltage (Note 1)	7300	volts	Gain	30	db
Cathode Current	1.4	amperes peak	Duty	.01	
Collector Voltage (tied to shell)	7300	volts	Pulse Width	5	microseconds
Collector Current	0.9	amperes peak			

NOTE 1: All voltages shown are with respect to cathode. The shell is normally operated at ground potential and the anode connection is made to the shell of the package.

NOTE 2: Useful gain and power output exists below 2000 mc and above 4000 mc and can be utilized by adjusting anode voltage to optimize the frequency range desired. However, bandwidth cannot be extended both upward and downward simultaneously and maximum gain and power output outside the normal bandwidth will be lower than rated values.

NOTE 3: Heater warmup of two minutes before applying high voltage is recommended.

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NOTE = PINS 5 & 6 ARE CONNECTED INTERNALLY.