



T E N T A T I V E

GENERAL CHARACTERISTICS

The X-397 is a C-band backward wave amplifier tube with a helical wave propagation structure employing continuous beam operation. The tube is designed for use as a narrow band medium noise r-f amplifier with a pass band that can be electronically tuned over the frequency range of 3850 to 6000 megacycles.

The X-397 is a glass envelope tube mounted in an aluminum capsule and requires a solenoid to focus the electron beam. Type "TNC" female r-f connectors are included as an integral part of the capsule.

ELECTRICAL DATA

Frequency Range	3850-6000 megacycles
Pass Band (3 db)	8 to 33 megacycles
Small Signal Gain	20 db minimum
Noise Figure	15 db maximum

MECHANICAL DATA

Mounting Position	Any
Capsule Length	20 inches
Capsule Diameter	1-1/8 inches
Net Weight	2 pounds
R-F Connectors	Type "TNC", female
D. C. Connections	Color Coded Flying Leads
Cooling	Not Required

*This number identifies a particular experimental tube design, such number and identification data being subject to change without notice. This tube is for experimental purposes only, carries no obligation for future manufacture and should not be used for design purposes without prior arrangement.

MAXIMUM RATINGS

Heater Voltage	6.5	Volts dc maximum
Heater Current	2	Amperes maximum
Cathode Voltage	-250 to -1200	Volts maximum
Cathode Current	4	ma maximum
Focus Voltage	-10 to +10	Volts maximum)
Anode No. 1 Voltage	+5 to +80	Volts maximum)
Anode No. 2 Voltage	+5 to +100	Volts maximum)
Anode No. 3 Voltage	+20 to +300	Volts maximum) with respect to
Anode No. 4 Voltage	+70 to +800	Volts maximum) cathode
Anode No. 5 Voltage)		
Helix No. 1 Voltage)		
Helix No. 2 Voltage)		Zero Volts (Ground)
Capsule Voltage)		
Collector Voltage	250	Volts maximum
Focus Current	.2	ma maximum
Anode No. 1 Current	.2	ma maximum
Anode No. 2 Current	.2	ma maximum
Anode No. 3 Current	.2	ma maximum
Anode No. 4 Current	.2	ma maximum
Anode No. 5 Current	.2	ma maximum
Helix No. 1 Current)		
Helix No. 2 Current)	.3	ma maximum
Capsule Current)		
Collector Current	4	ma maximum
Solenoid Magnetic Field	800	Gauss maximum

TYPICAL OPERATION

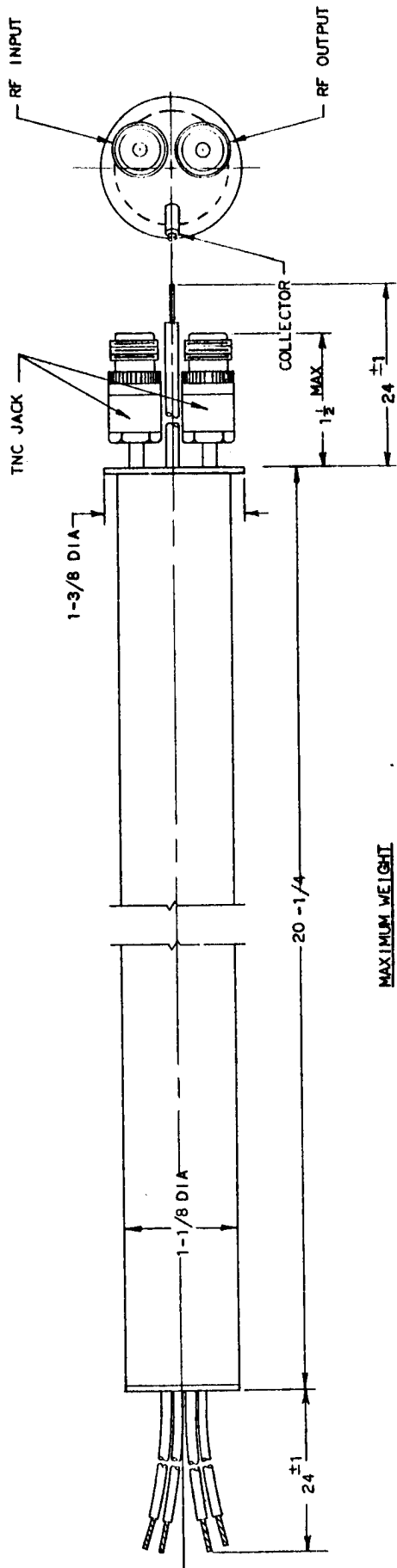
Frequency (Center of Pass Band)	5000	megacycles
Pass Band (3 db)	20	megacycles
Small Signal Gain	23	db
Noise Figure	12	db
Heater Voltage	6.3	Vdc
Heater Current	1.9	Adc
Cathode Voltage	-610	Vdc with respect to ground
Cathode Current	2.0	ma
Focus Voltage	-5	Vdc)
Anode No. 1 Voltage	+15	Vdc)
Anode No. 2 Voltage	+12	Vdc) with respect to cathode
Anode No. 3 Voltage	+80	Vdc)
Anode No. 4 Voltage	+200	Vdc)
Anode No. 5 Voltage)		
Helix No. 1 Voltage)		
Helix No. 2 Voltage)		Zero Volts (Ground)
Capsule Voltage)		
Collector Voltage	200	Volts with respect to ground
Focus Current	0	ma

Anode No. 1 Current	.10	ma
Anode No. 2 Current	.05	ma
Anode No. 3 Current	.03	ma
Anode No. 4 Current	.02	ma
Anode No. 5 Current	.03	ma
Helix No. 1 Current)		
Helix No. 2 Current)	.05	ma
Capsule Current)		
Collector Current	1.7	ma
Magnetic Field	700	gauss

Additional information for specific applications can be obtained from the:

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





MAXIMUM WEIGHT
1 1/2 POUNDS

BACKWARD WAVE AMPLIFIER
TYPE X-397

LEADS

- BROWN
 - YELLOW
 - GREEN
 - BLUE
 - GREY
 - PURPLE
 - WHITE
 - GROUND-BLACK
- HEATERS
CATHODE
FOCUS
ANODE NO. 1
ANODE NO. 2
ANODE NO. 3
ANODE NO. 4
ANODE NO. 5
- AMPL. HELIX NO. 1
AMPL. HELIX NO. 2
COLLECTOR