



## F4185 TRAVELING WAVE TUBE

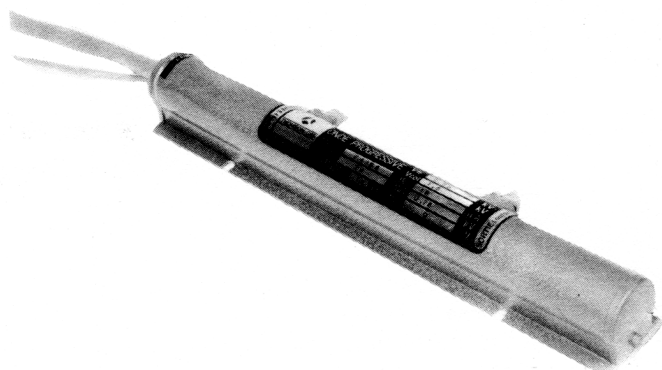
The F4185 traveling wave tube is a broadband amplifier capable of providing a minimum saturated output power of 4 W from 8.0 to 14.0 GHz. The saturation gain is more than 40 dB. Integral periodic permanent focusing reduces the stray magnetic field and saves weight.

The F4185 is cooled by natural convection and conduction. Because of its small size, light weight, and sturdy construction this tube is especially attractive for transportable and airborne equipments.

The AMP.2078A amplifier, fitted with the F4185 traveling wave tube is ideal for laboratory measurements, wideband amplification for radars and communications, antenna pattern measurements etc.. This amplifier incorporates a power supply, a F4185 traveling wave tube with its permanent magnet, a modulating circuit and security devices.

A TWTA is available including F4185 with its integral power supply :

The BFA.1209 is a small, light weight, compact, adjustment free microwave amplifier fitted with the F4185 intended for airborne and transportable equipments, radio links and space communications. (see Data Sheet TEH 4068)



### GENERAL CHARACTERISTICS

#### Electrical

Frequency .....		8.0 to 14.0	GHz
Heater voltage .....		6.3	V
Heater current .....		0.3 to 0.6	A
Output power .....		4	W
Gain for an output power of 4 W .....	min.	40	dB
Helix voltage .....		2.4 to 2.8	kV
Helix current .....	max.	2.0	mA
Anode voltage .....		0.5 to 1.0	kV
Anode current .....	max.	1.0	mA
Collector voltage .....		1.2 to 1.6	kV
Cathode current .....	max.	25	mA

(1) All voltages are referred to the cathode.



**Mechanical**

Operating position .....	any
Weight (approx.) .....	600 g
Rf connections .....	coaxial plugs OSM 202 (omni spectra)
Supply connections .....	flexible leads
Cooling .....	conduction

**Absolute ratings**  
(non simultaneous values)

	min.	max.	
Heater voltage .....	6.0	6.6	V
Heater surge current .....	—	1.2	A
Warm-up time .....	3	—	mm
Ambient temperature .....		100	°C
Vibrations .....		1 mm between 10 to 50 10 g between 50 to 2000	Hz Hz
Shocks .....		100 g -11 ms	
Helix voltage (1) .....	nominal voltage - 200	+ 200	V
Helix current .....	—	2.5	mA
Anode voltage(1) .....	nominal voltage	+ 200	V
Anode current .....		2.0	mA
Collector voltage(1) .....	nominal voltage - 200	+ 200	V
Cathode current .....		28	mA
Load VSWR .....	—	3 :1	

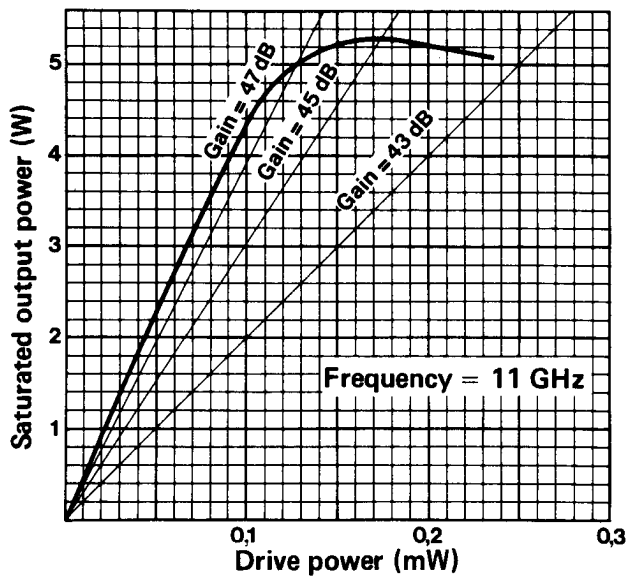
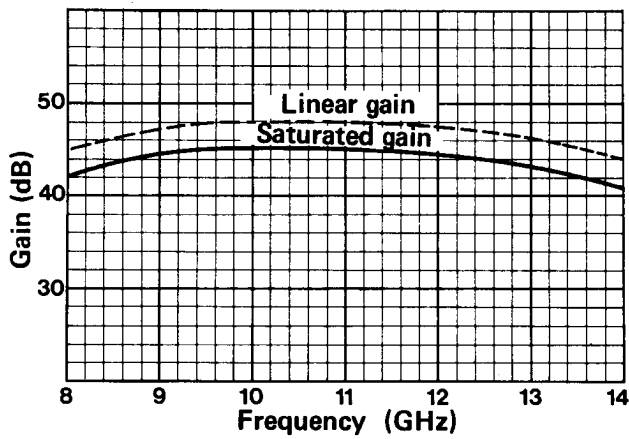
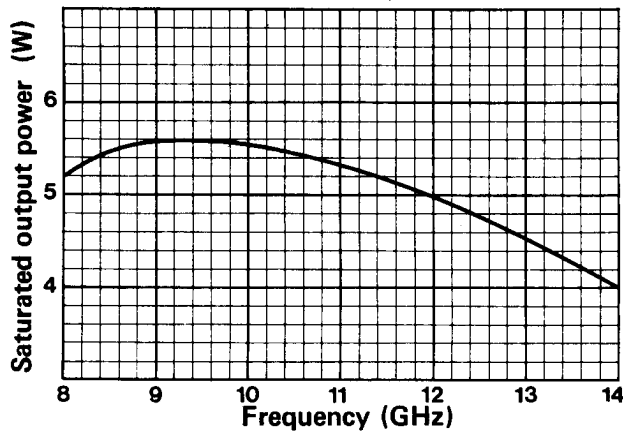
**Typical operation**

Frequency .....	11	GHz
Heater voltage .....	6.3	V
Heater current .....	0.48	mA
Drive power .....	0.15	mW
Output power .....	5.2	W
Gain .....	45	dB
Helix voltage .....	2.55	kV
Helix current .....	0.30	mA
Anode voltage .....	0.8	kV
Anode current .....	0	
Cathode current .....	23	mA
Collector voltage .....	1.5	kV

(1) The nominal operating value is indicated on the label and on the test Data Sheet of each tube.

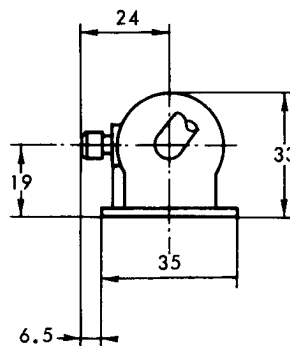
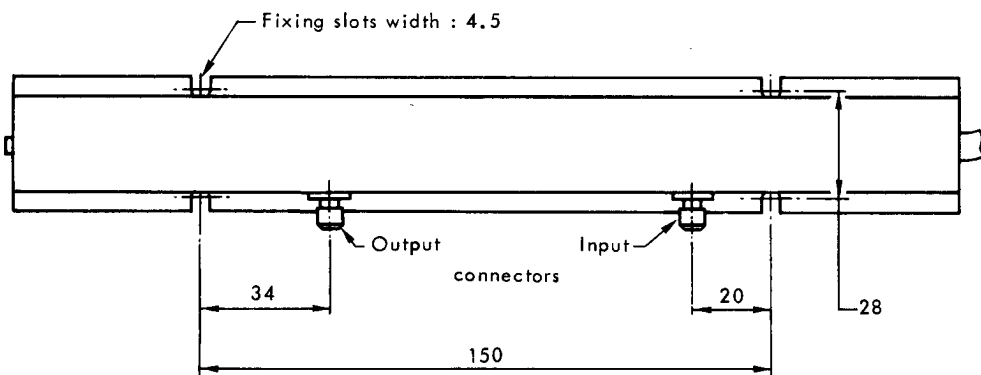
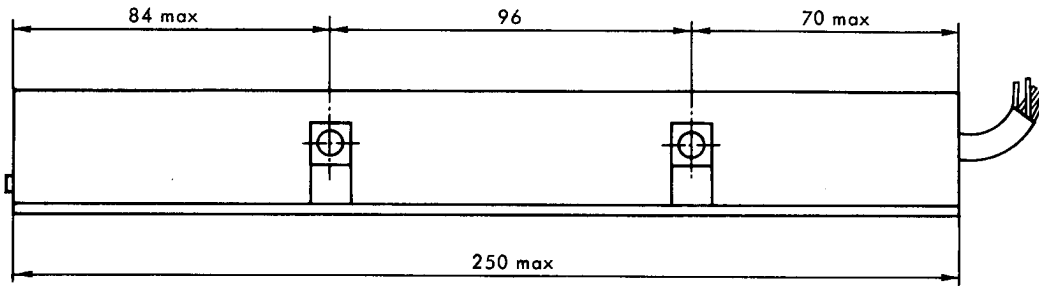


Typical characteristics





**OUTLINE DRAWING**



Connections	
Brown	Heater-cathode
Yellow	Cathode
Green	Wehnelt
Blue	Anode
Red	Collector
Orange	Ground-helix

Dimensions in mm.

