

TOP.1091 TRAVELING WAVE TUBE

The TOP.1091 traveling wave tube is a broadband amplifier capable of providing a minimum saturated output power of 3 W from 3.0 to 6.0 GHz. The saturation gain is more than 40 dB. Integral periodic permanent magnet focusing reduces the stray magnetic field and saves weight.

The TOP.1091 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.

A TWTA is available including TOP.1091 with its integral power supply :

The BFA.1298 is a small, light weight, compact, adjustment free microwave amplifier fitted with the TOP.1091, intended for airborne and transportable equipments, radio links and space communications. (See Data Sheet TEH 4076)



GENERAL CHARACTERISTICS

Electrical (1)

	min.	max.	
Frequency	3	6	GHz
Heater voltage		4.9	V
Heater current	0.2	0.3	A
Output power	3	—	W
Gain	40	—	dB
Helix voltage	1.2	1.6	kV
Helix current	—	2.5	mA
Anode voltage	0.8	1.5	kV
Anode current	—	1.0	mA
Collector voltage	0.6	1.0	kV
Cathode current	—	25	mA

(1) - All voltages are referred to the cathode.



Mechanical

Operating position	any
Weight (approx.)	400 g
RF connections	coaxial plugs OSM.202 (omni spectra)
Supply connections	flexible leads
Cooling	natural convection and conduction

ABSOLUTE RATINGS

(non simultaneous values)

	Min.	Max.	
Heater voltage	4.3	5.5	V
Heater surge current	—	0.6	A
Warm-up time (1)	3	—	mn
Ambient temperature		100	°C
Vibrations		1 mm from 10 to 50 10 g from 50 to 2000	Hz
Shocks		100 g — 11	ms
Helix voltage (2) nominal voltage	−200	+200	V
Helix current	—	3.0	mA
Anode voltage (2) nominal voltage	—	+200	V
Anode current	—	2.0	mA
Collector voltage (2) nominal voltage	−200	+200	V
Cathode current	—	30	mA
Load VSWR	—	3 : 1	

(1) - Not necessary if the heater supply is turned off for less than cinq seconds.

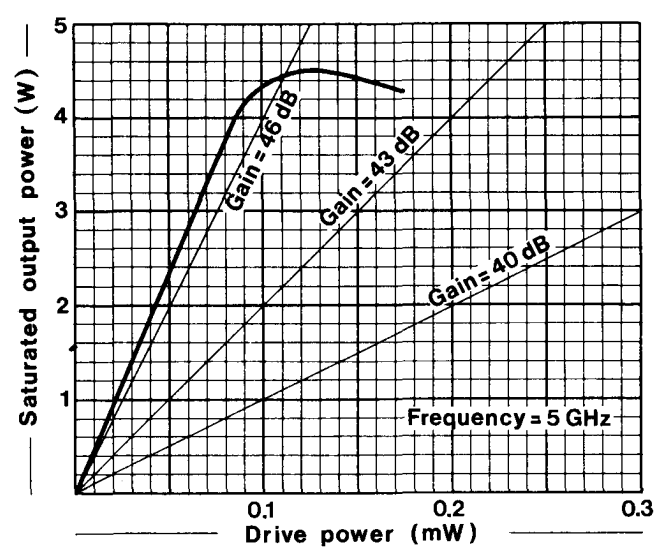
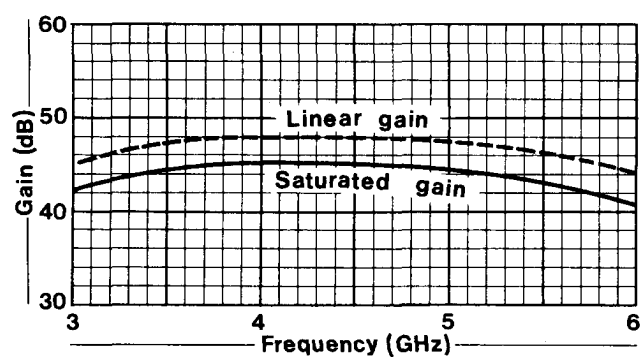
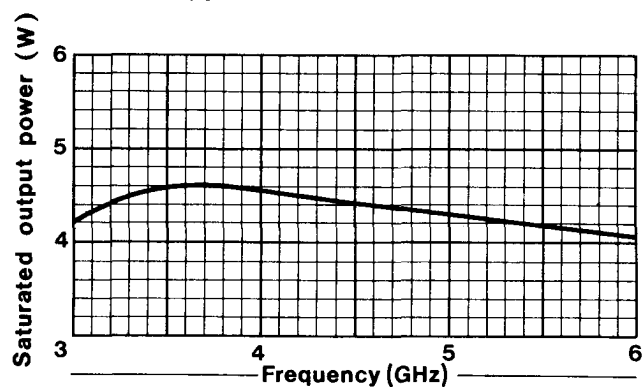
(2) - Nominal voltages are given on the label and on Test Data Sheet of each tube.

TYPICAL OPERATION

Frequency	5	GHz
Heater voltage	4.9	V
Heater current	0.23	A
Drive power	0.1	mW
Output power	4.2	W
Gain	45	dB
Helix voltage	1.4	kV
Helix current	300	μA
Anode voltage	1.4	kV
Anode current	0	
Cathode current	22	mA
Collector voltage	0.6	kV



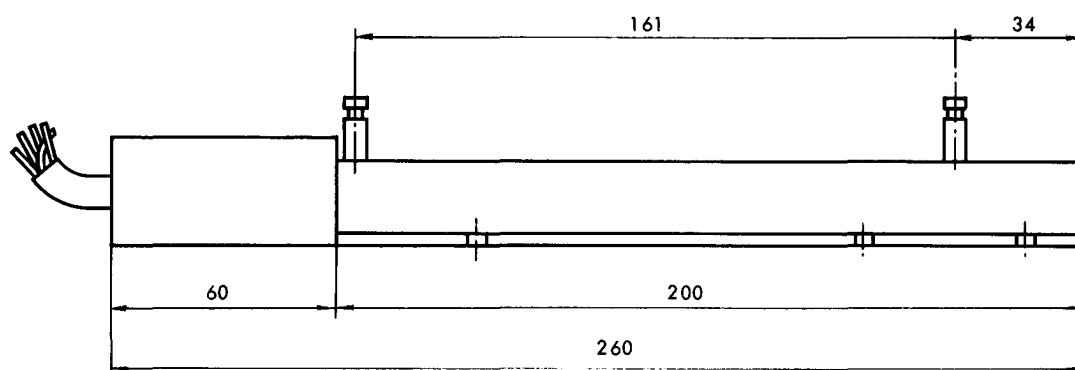
Typical characteristics



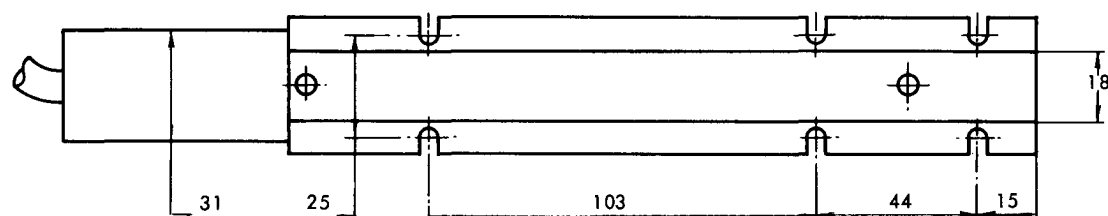


THOMSON-CSF
GROUPEMENT TUBES ELECTRONIQUES

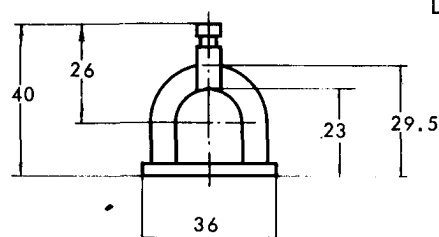
OUTLINE DRAWING



Fixing slots width : 4.5



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



Dimensions in mm.

