

## 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<br>(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<br>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.

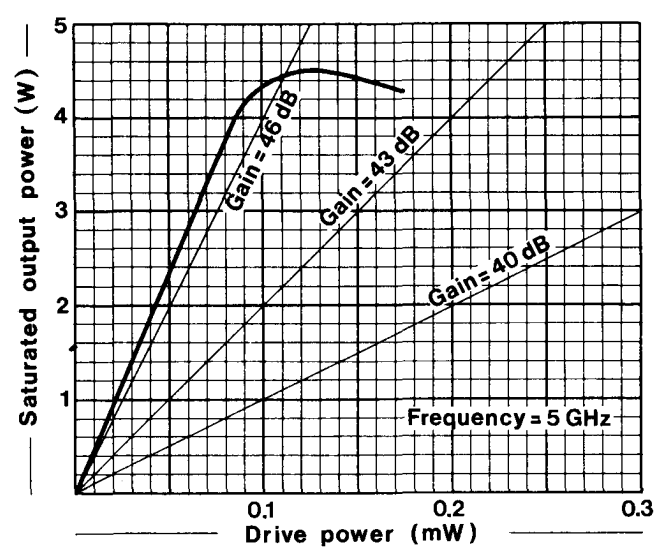
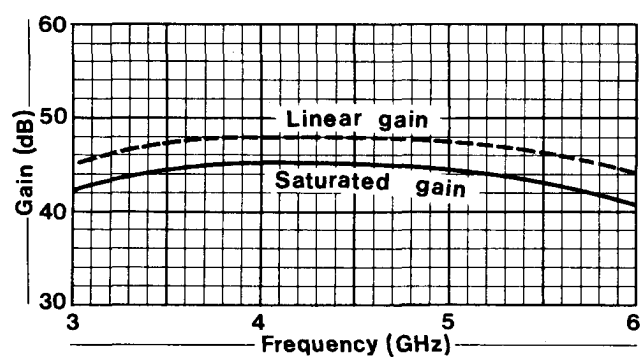
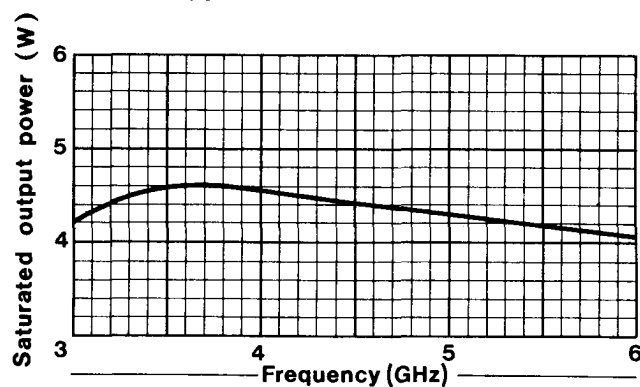
(2) - Nominal voltages are given on the label and on Test Data Sheet of each tube.

## 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  |



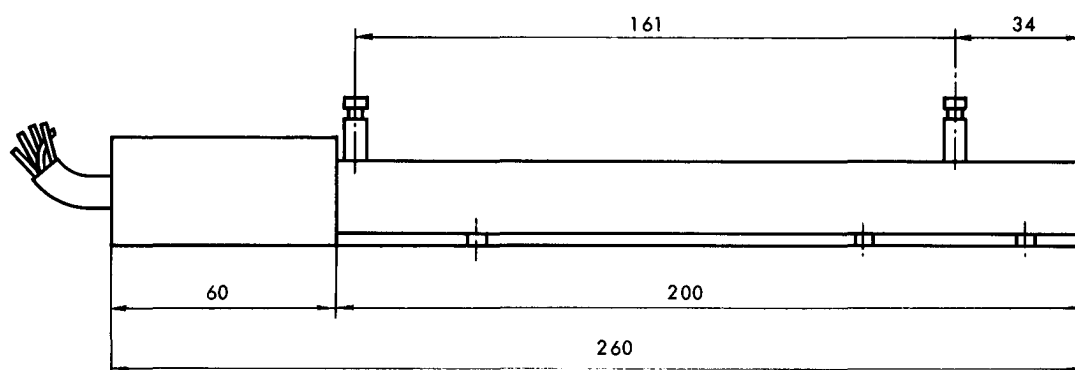
### Typical characteristics



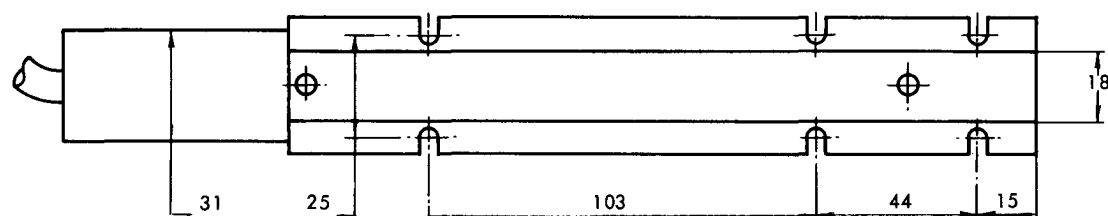


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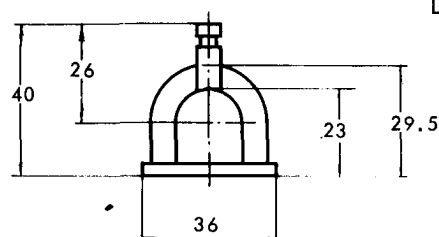
# OUTLINE DRAWING



Fixing slots width : 4.5



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



Dimensions in mm.

