

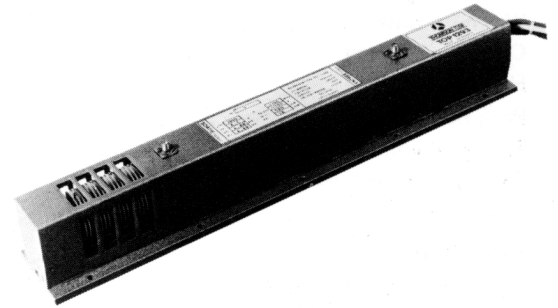


## TOP 1293 TRAVELING WAVE TUBE

The TOP 1293 is a pulsed traveling wave tube operating in the frequency range from 2.9 to 3.1 GHz, delivering a peak power output of more than 300 watts, with a duty cycle of 0.04.

This broadband amplifier features a saturated output gain of at least 43 dB.

The TOP 1293 uses periodic permanent magnet focusing and forced air cooling ; an internal thermal switch "Vigitherme" removes the supply voltages if the operating temperature exceeds 150 °C.



### GENERAL CHARACTERISTICS

#### Electrical

	min.	avg.	max.	
Heater voltage (1)	—	6.3	—	V
Heater current	1.0	—	1.5	A
Frequency	2.9	—	3.1	GHz
Collector voltage (1)	4.75	—	5.25	kV
Helix voltage (1)	4.75	—	5.25	kV
Peak cathode current	—	—	650	mA
Peak helix current	—	—	150	mA
Peak grid voltage	—	—	+175	V
Cut-off grid voltage	-110	—	-90	V
Peak power output	260	—	—	W
Input power	—	—	15	mW
Pulse duration	—	75	—	μs
Repetition frequency	—	500	—	Hz

#### Mechanical

Operating position	any
Dimensions	see drawing
RF input	OSM 206/1 coaxial connector
RF output	OSM 206/1 coaxial connector
Power supply connection	flying leads
Approximate weight	2.5 kg
Cooling	forced air

(1) The exact value is given for each tube.



**ABSOLUTE RATINGS**

	min.	max.	
Heater voltage	5.9	6.7	V
Heater surge current	—	2.6	A
Warm-up time	3	—	mn
Collector voltage	—	6	kV
Helix voltage	—	6	kV
Peak helix current	—	180	mA
Peak grid voltage	- 300	+ 200	V
Peak power output	—	400	W
Input power	—	30	mW
Pulse duration	—	100	μs
Operating temperature (1)	—	150	°C
Duty cycle	—	0.04	
Altitude	—	3000	m
		10000	feet

(1) Measured at the hottest point of the housing.

**TYPICAL OPERATION**

Heater voltage	6.3	V
Peak power output	320	W
Average power output	12	W
Pulse duration	25	μs
Repetition frequency	1 500	Hz
Load VSWR	1.2 : 1	
Saturated output gain	43	dB
Noise factor, max.	35	dB
Phase sensitivity, max.	1.5	°/V

**REMARKS**

The TOP 1293 should be kept away from any magnetic or ferromagnetic materials.

When starting operation, voltages should be applied in the following order :

- heater (with a minimum warm-up time of three minutes), grid voltage (negative), helix voltage and collector voltage, positive grid voltage.

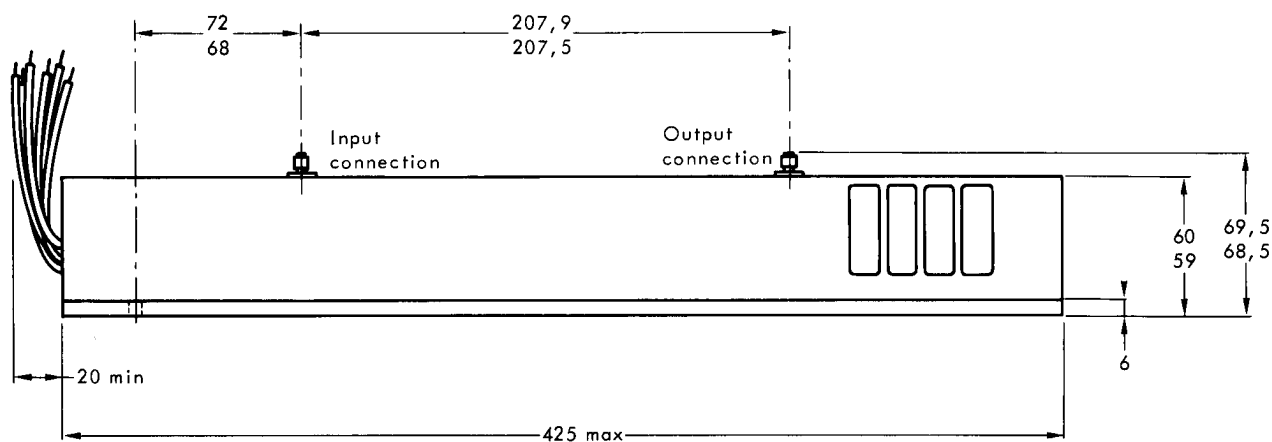
Voltages should be removed simultaneously by a relay or in the following order : positive grid voltage, helix and collector voltage.

If the peak cathode current or the peak helix current exceeds the maximum rating, voltages should be automatically removed according to the above procedure.

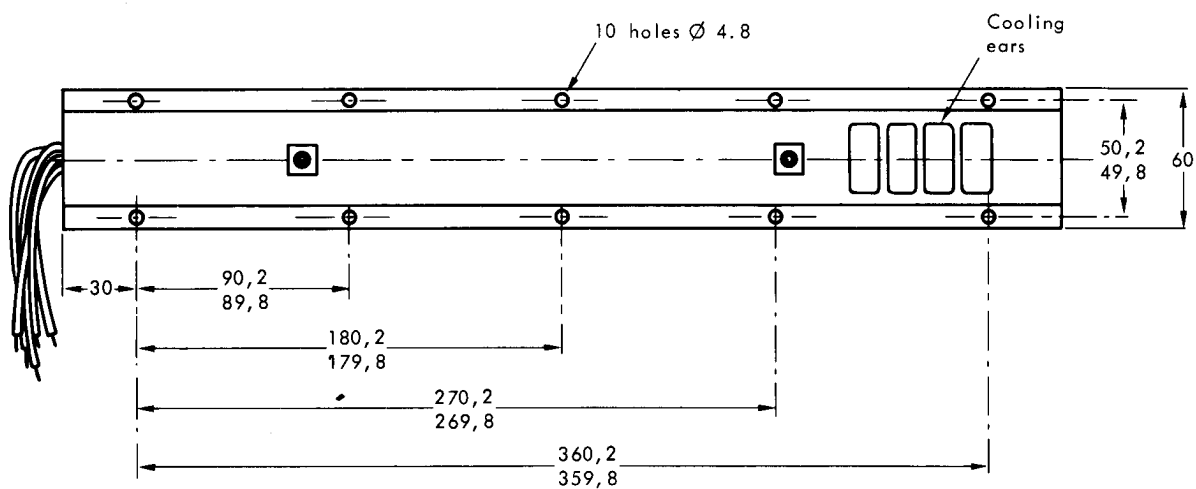


**OUTLINE DRAWING**

Front view



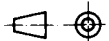
Top view



Nota : Minimum lead length for the Vigitherme and supply of the tube = 300 mm

CONNECTIONS	
Brown	Filament
Yellow	Cathode
Green	Grid
Orange	Ground-helix
Grey	Vigitherme
White	Vigitherme (isolated lead)

Dimensions in mm.



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