

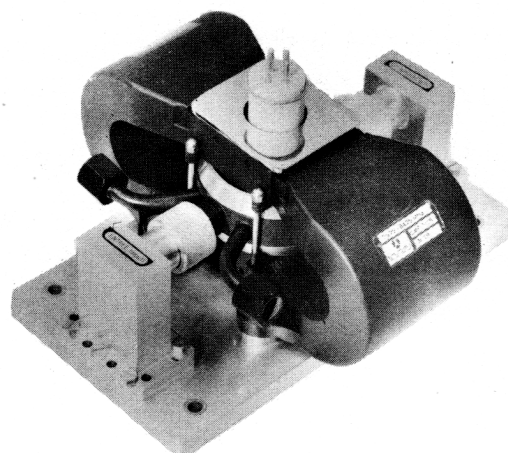
CMP.1115 CARPITRON

The CMP.1115 CARPITRON, a crossed field tube with built-in magnet, delivers a 500 W minimum CW output power over an instantaneous bandwidth of some tens of MHz (according to the input level). Electronically tunable in the tele-communications frequency range 5925 to 6425 MHz., the tube is liquid cooled.

This tube meets the COMSAT requirements concerning transmission of telephony and television for Intelsat III and Intelsat IV satellites.

The principal features of the CMP.1115 are :

- Low size
- Low weight
- High efficiency
- High CW power level.



GENERAL CHARACTERISTICS

ELECTRICAL (1) :

Cathode	Impregnated, indirectly heated
Heater voltage (a - c)	6.3 ± 2 % V
Heater current	2.5 to 3.5 A
Sole voltage	-600 to -1800 V
Grid 1 voltage	-100 to -800 V
Anode 1 voltage	500 to 1800 V
Anode 2 voltage	2.5 to 3.7 kV
Sole current	- 35 to + 3 mA
Grid 1 current	- 3 to + 3 mA
Anode 1 current	- 3 to + 3 mA
Anode 2 current	600 mA

(1) - The voltages are specified with respect to the cathode.

MECHANICAL

Weight	5.7 kg
Mounting position	any
Ambient temperature	- 40 to + 110 °C
Connections :	
- RF connections :	waveguide RG 50/U
- DC connections :	mates with CMR. 137 flange
	refer to drawing



Cooling

Liquid cooling		
Water flow (2)	4	l/mn
Outlet temperature, maximum	80	° C

(2) - Please, consult us for other coolants.

Typical operation (3)

Frequency	6064	MHz	Grid 1 voltage	-600	V
Instantaneous bandwidth	40	MHz	Anode 1 voltage	1500	V
Output power	600	W	Anode 2 voltage	3300	V
Gain	17	dB	Sole voltage	-900	V
			Anode 2 current	475	mA

Absolute ratings (3)

(non simultaneous)

Heater voltage	6.3 ± 5%	V	Sole voltage	min.	-600	V
Heater current	4	A		max.	-1800	V
Grid 1 voltage (4)	± 100	V	Anode 2 current (4)	max.	+ 50	mA
Anode 1 voltage (4) ... max.	+ 200	V	Temperature of the coolant at			
Anode 2 voltage max.	3800	V	the output of the cooling circuit	80	° C	

(3) - The voltages are specified with respect to the cathode.

(4) - Operating voltages and currents are given for each tube in particular data sheets. The above-mentioned values are tolerances on these voltages.

Operating instructions

The CARPITRON is a locked backward wave oscillator.

For a given adjustment of the supply voltages and a given input power level, the locking can be achieved if the driver frequency is in a so-called "locking bandwidth".

It must be noticed that :

- a - Control of the anode 2 current and therefore RF power is achieved by the anode 1 voltage.
- b - The operating frequency is fixed by the line to sole voltage ; the frequency adjustment is achieved by varying the sole to cathode voltage and does not need any power consumption.

APPLICATION OF VOLTAGES

Apply voltages in the following order : Heater, grid 1, sole, anode 2, anode 1.

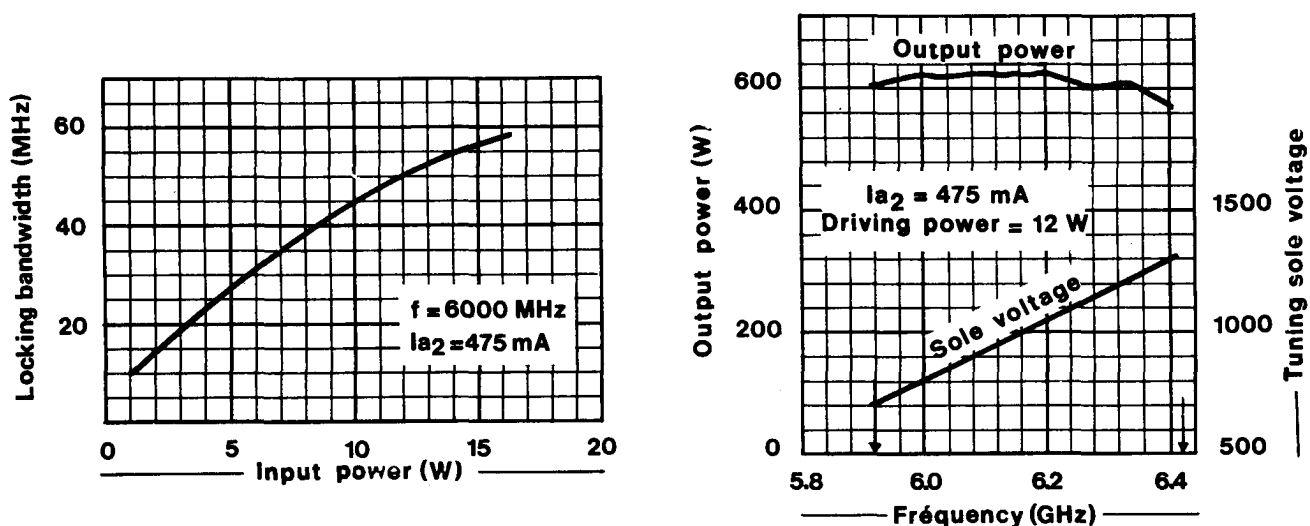
The grid 1 voltage must never be positive.

The anode 2 voltage must always be greater than anode 1 voltage.

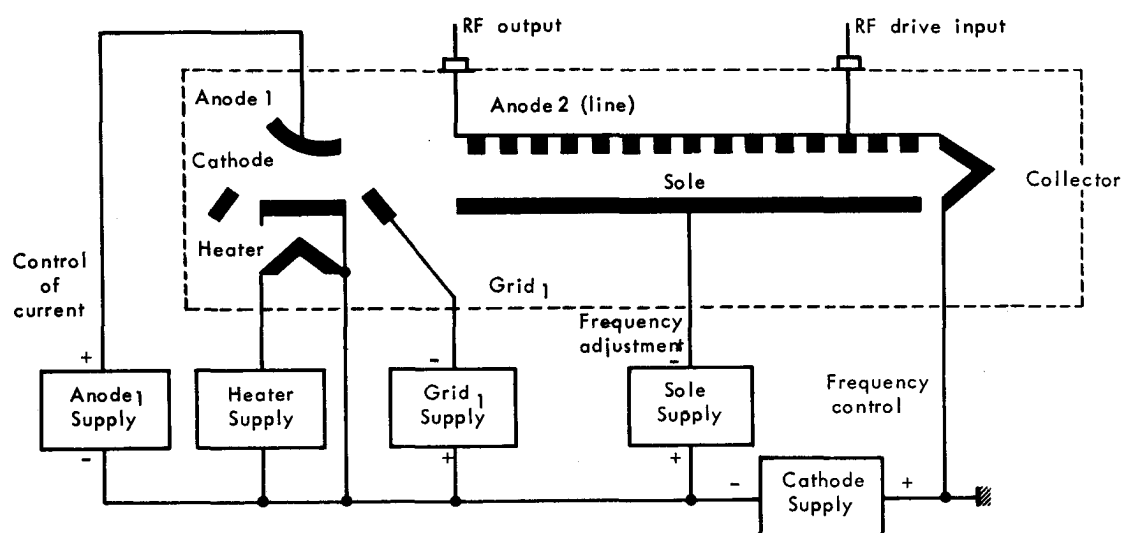
The grid 1 must not be used for modulation.



Characteristics curves

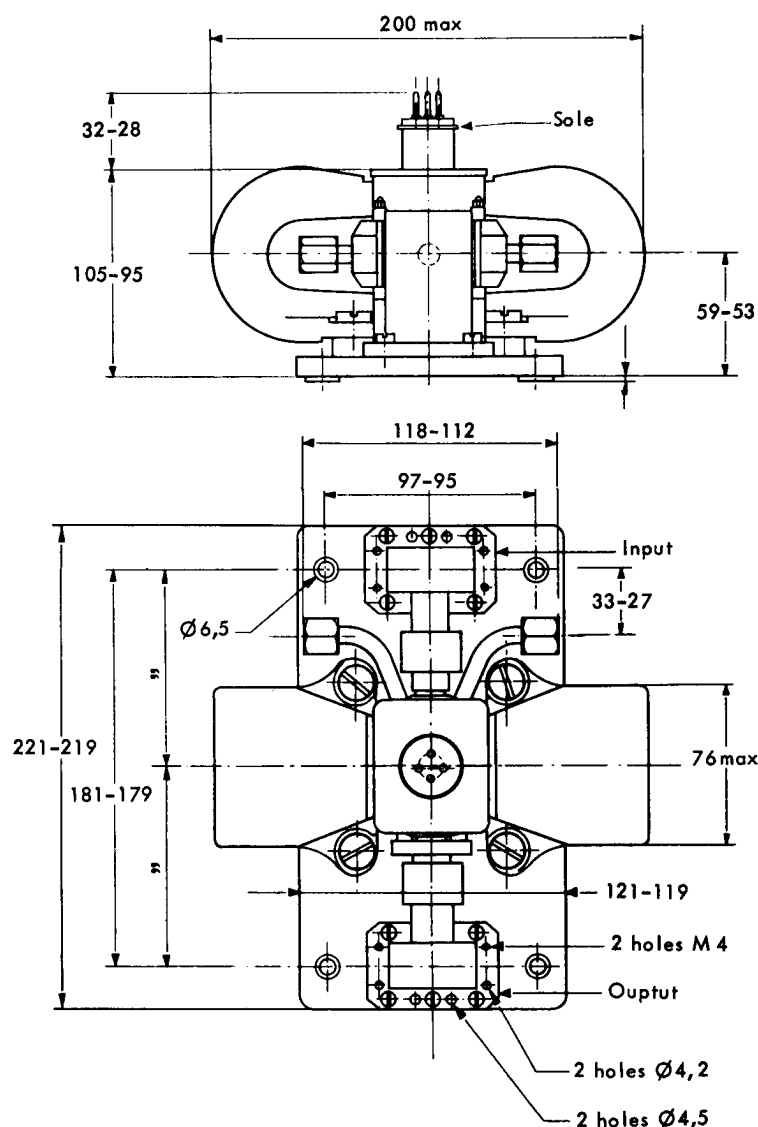


Supply diagram

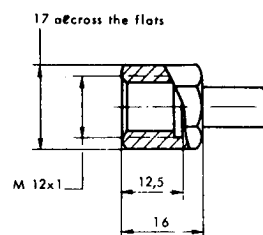




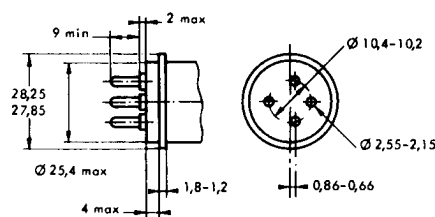
OUTLINE DRAWING



Water outlet hexagonal nut



Pin arrangement



The pin position with respect to the tube axes is determined within 10°

Maximum base eccentricity with respect to the sole connection : 0,3 mm.

Dimensions in mm.

