

ET 2142 HIGH SPEED TUNED COAXIAL MAGNETRON OSCILLATOR

The ET 2142 Coaxial Magnetron is a pulsed oscillator, integral magnet type, with forced air and conduction cooled.

It is dither mode tunable, operating in the 16 to 17 GHz region, with a minimum peak power of 70 kw.

This magnetron presents all the coaxial magnetron typical advantages i.e. best frequency stability, minimum pulse loss, low pulling, low pushing, long life.

The output is designed for coupling to standard waveguide IEC-R 140 through a UG 1666/U flange.

These technical data should be used as a guide for equipment designers. For any operating condition other than those recommended in this data sheet, the manufacturer should be consulted.



▲ AGILE COAXIAL MAGNETRON OSCILLATOR ET 2142

Electrical data

HEATER CHARACTERISTICS:

Indirectly heated, dispenser type, unipotential cathode.

| | |
|------------------------------|--------|
| Heater voltage preheat | 12.6 V |
| Heater current | 2.5 A |
| Minimum preheat time | 120 s |
| Maximum heater surge current | 13 A |

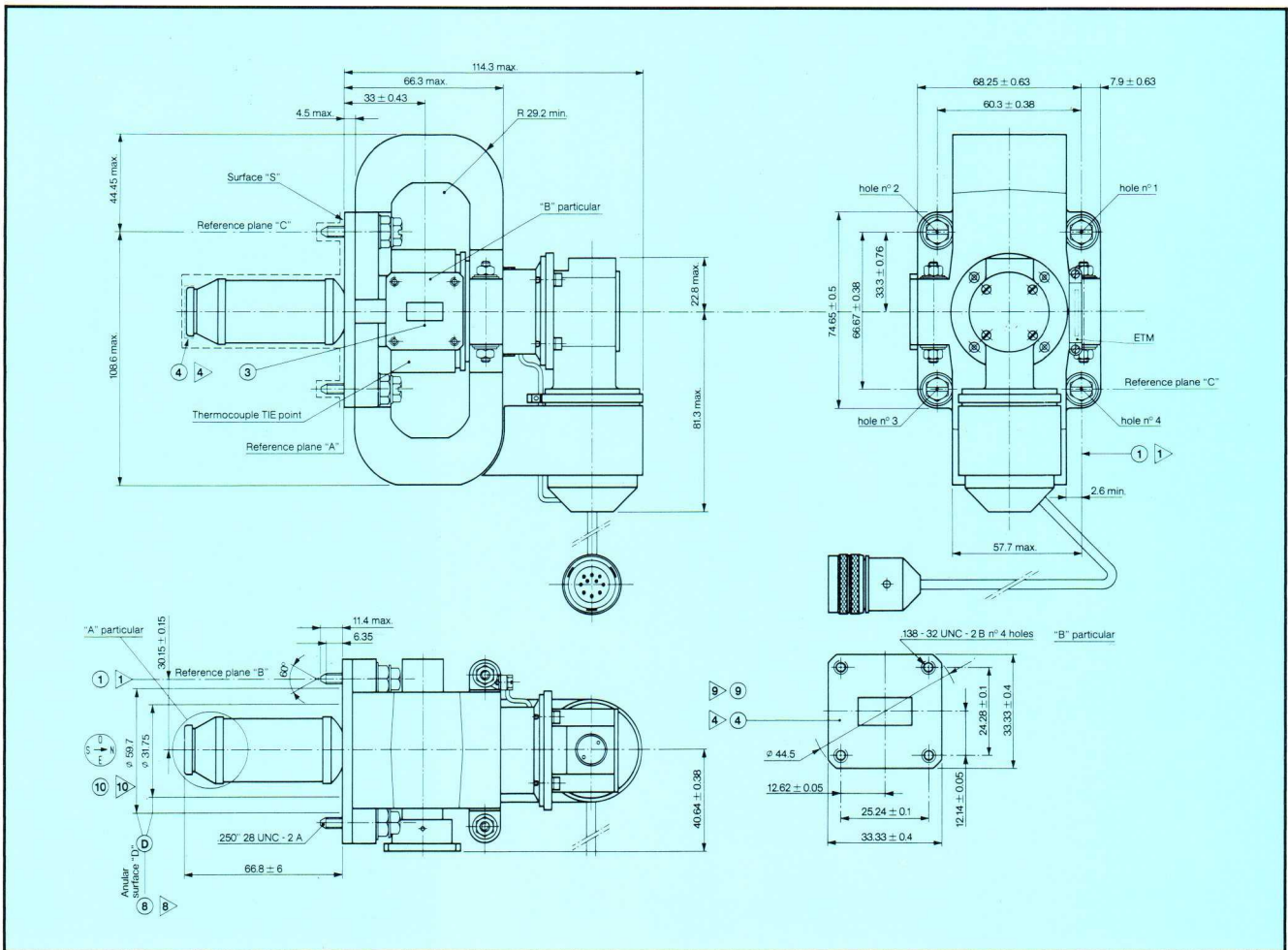
TUNER CHARACTERISTICS;

| | |
|--|---------|
| Frequency excursion | 300 MHz |
| Motor input line voltage (three phase) | 200 V |
| Read out voltage | 6.5 V |
| Tuner input power | 30 W |

TYPICAL OPERATIONS:

| | |
|--------------------------------|-----------------|
| Heater voltage preheat | 12.6 V |
| Heater voltage operate | 7.8 V |
| Pulse duration | 0.4 μ s |
| Duty cycle | 0.001 |
| Rate of rise of voltage | 130 kv/ μ s |
| Peak anode voltage | 14.5 kv |
| Peak anode current | 16 a |
| Peak power output | 80 kw |
| VSWR | 1.3/1 |
| Operation frequency range | 16 to 17 GHz |
| Frequency pulling (VSWR 1.5/1) | 5 MHz |
| Side lobes | -12 dB |
| Bandwidth | < 2/tpc |

(Dimensions in mm)



Mechanical data

| | |
|------------------------|--------------------------|
| Mounting position | any |
| Weight | 3.5 kg approx. |
| Cooling | forced air or conduction |
| Mating mounting flange | UG 1666/U |
| Tuner connector | MS 27484 T12898 P |

General information

Satisfactory operation of the tube will depend largely on the waveform characteristics of the input voltage pulse which should fulfill the following conditions:

Rate of rise of voltage 100 to 160 kv/ μ s
Current time of fall less than 0.3 μ s

A poor pulse shape may cause excessive frequency modulation and general instability.

Before application of high voltage, the cathode should be heated to the required initial operating temperature by applying 12.6 volt for 2 minutes minimum. On the application of anode power, the heater voltage must be reduced according to the following formula:

$$E_f = 12.6 \sqrt{1 - P_i/320} \text{ V} \pm 5\%$$