GENERAL DESCRIPTION

The RK7449 magnetron is a rugged, pulsed-type oscillator operating in the frequency region of 23,700 to 24,300 megacycles, with a minimum power output of 45.0 kilowatts. It is an integral magnet, unipotential cathode, waveguide output type tube requiring forced air cooling.

The RK7449 is designed to operate while being subjected to vibration frequencies of 20 to 2000 C.P.S. at a constant acceleration of 30.0 G's, (below 54 C.P.S. the maximum total excursion is 0.2 inches). It will also withstand 50 G's shock acceleration on three mutually perpendicular axes.

Mechanical Data

- Mounting Position ........................................... Any
- Net Weight ................................................. 7.5 Lbs.
- Cooling ..................................................... Forced Air
- Pressurization (Input) ...................................... Required below 10 P.S.I.A.
- Pressurization (Output) .................................... Required (40 P.S.I.A. Min.)

Electrical Data

- Heater Voltage-Preheat/90 sec ......................... 5.0 Volts
- Heater Current at 5.0 volts ............................ 2.6-3.2 Amps
- Voltage Rise Time ........................................ 0.02 usec Min.
- R.F. Bandwidth ............................................ 1.96/tpc
- Maximum V.S.W.R. ........................................ 1.5

Typical Operation

- Pulse Duration .............................................. 0.02 to 0.09 usec
- Duty Cycle .................................................. 0.0003
- Peak Anode Current ...................................... 15 Amps
- Peak Power Output ....................................... 55 kilowatts
- Peak Anode Voltage ...................................... 14 kilovolts.

Reliable operation and maximum magnetron life can be achieved only if the overall radar transmitter is designed with the magnetron characteristics and peculiarities clearly in mind. This preliminary Data Sheet is intended only as an introduction to this type magnetron and not as an absolute guide to users. Specific problems and applications should be directed to the Applications Engineering Department at Raytheon Waltham, Massachusetts.
RK7449 ELECTRON TUBE OUTLINE DRAWING

NOTES

1. REFERENCE PLANE "A" IS DEFINED AS A PLANE PASSING ALONG THE SURFACE OF THE MAGNET AS SHOWN.
2. REFERENCE PLANE "B" IS DEFINED AS A PLANE PERPENDICULAR TO PLANE "A".
3. REFERENCE PLANE "C" IS DEFINED AS A PLANE MUTUALLY PERPENDICULAR TO PLANES "A" & "B" PASSING ALONG THE FACE OF THE OUTPUT FLANGE.
4. THE FACE OF THE OUTPUT FLANGE MUST BE PARALLEL TO REFERENCE PLANE "C" SUCH THAT A .010 THICKNESS GAGE .125 WIDE SHALL NOT ENTER.
6. INCLUDES ANGULAR AS WELL AS LATERAL DEVIATION.
7. THIS DIMENSION APPLIES TO LOCATION OF MOUNTING BOLTS WITH RESPECT TO REFERENCE PLANE "C".
8. NOT TO BE PUNCH OR UNDERPUNCH WITH SURFACE "K".
9. STORAGE TEMPERATURE TAKEN AT THIS POINT.
10. ALL SOLDER JOINTS ON OUTPUT SECTION SHALL PROVIDE A HERMETIC SEAL.
11. PITCH DIAMETER MUST ACCEPT CLARE 200 GAUGE ONLY.
12. MAJOR DIAMETER MUST NOT BE LESS THAN .220
13. MINOR DIAMETER MUST NOT BE GREATER THAN .214
14. HERMETIC SEAL BETWEEN MAGNET AND CATHODE POLE.
15. THIS DIMENSION APPLIES TO THE AXES OF CATHODE AT SURFACE OF MAGNET.
16. HERMETIC SEALING AREA 5.756 x 5.756 ON FACE OF MAGNET AS SHOWN.
17. M3 MICRO SIZE FINISH DOES NOT APPLY TO MOUNTING HOLES OUTSIDE HERMETIC SEAL AREA.
18. PERPENDICULARITY OF THE BOLT TO THE MAGNET SURFACE TO BE SPECIFIED.
19. THIS SURFACE MUST BE PARALLEL TO REFERENCE PLANE "A" WITHIN .003