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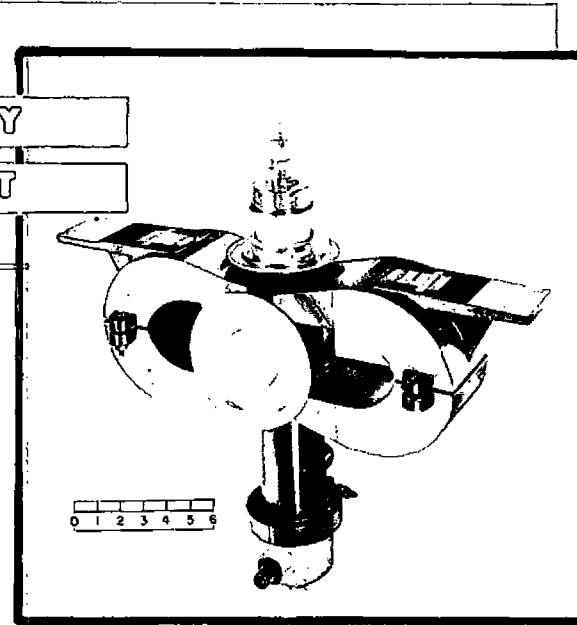
RK 7529

PRELIMINARY

DATA SHEET



Excellence in Electronics



RK 7529

GENERAL DESCRIPTION

The RK7529 magnetron is a mechanically tunable, high power, pulsed-type oscillator which is capable of delivering a minimum of 3.5 megawatts peak power and 2520 watts average power. The RK7529 may be rapid hand or motor tuned to any desired frequency in the 2700 to 2850 megacycle region. It is an integral magnet, unipotential cathode type tube requiring liquid cooling, with an output designed to couple directly into a 1 1/2" x 3" waveguide.

This tube was designed to be interchangeable with the RK6410A/QK338A and at the present time is the highest power tunable S-band magnetron available.

Mechanical Data

Mounting Position	Cathode Vertical
Net Weight	66 lbs.
Cooling	Forced Liquid
Input Bushing	Oil Immersed
Pressurization (Output)	45 p.s.i.a. Min.

Typical Electrical Data

Heater Current (Preheat - 300 Sec.)	78 Amperes
Heater Voltage @ 78 Amperes	8.2 Volts
Pulse Duration (tpc)	2.0 usec
Peak Anode Voltage	62 Kilovolts
Peak Anode Current	115 Amperes
Average Power Output	2800 Watts
Voltage Rise Time	0.3 usec. Min.
Maximum VSWR	1.5
RF Bandwidth (@ 6.0 db)	3.0/tpc Max.
Life (1.5 VSWR, Cycled)	150 Hrs. Min.
	1000 Hrs. Min. Objective

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 to serve as an introduction only and should not be used as an absolute guide to users. Detailed tube specifications are available on request, specific problems and applications should be directed to the Applications Engineering Department, Microwave and Power Tube Division, Raytheon Company, Waltham, Massachusetts.

The specifications for this tube have not been finalized. The tube is being manufactured in limited quantities and is available for engineering analysis purposes only. This engineering information and/or delivery of sample tubes do not imply availability of tubes with the same electrical and/or mechanical characteristics. Changes in ratings and/or dimensions may be made at our discretion as deemed advisable by manufacturing experience or other considerations. For current information concerning this tube contact the nearest Microwave and Power Tube Regional Sales Representative.



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**preliminary
data
sheet**

**OUTLINE DRAWING
RK7529
ELECTRON TUBE**

NOTES :

1. REF. PLANE "A" IS DEFINED AS A PLANE PASSING ALONG THE FACE OF THE MOUNTING BRACKET.
2. REF. PLANE "B" IS DEFINED AS A PLANE PERPENDICULAR TO PLANE "A", PASSING THRU THE CENTER OF SLOTS AT PLANE "A" AS SHOWN.
3. REF. PLANE "C" IS DEFINED AS A PLANE MUTUALLY PERPENDICULAR TO PLANES "A" & "B", PASSING THRU THE CENTER OF THE SLOT AT PLANE "A" AS SHOWN.
4. THIS DIMENSION APPLIES TO 4.912 MIN. DIA.
5. INCLUDES ANGULAR AS WELL AS LATERAL DEVIATIONS.
6. REFERS TO Q. OF WAVEGUIDE.
7. PARTS ON THIS Q. MAY VARY FROM TRUE LOCATION BY .149.
8. HANSEN B-7-D COUPLING PLUG.
9. COMMON CATHODE CONNECTION.
10. GASKETED SURFACE. ALL SOLDER JOINTS ON OUTPUT SECTION SHALL BE SOLDERED TO PROVIDE A HERMETIC SEAL.
11. THE FOLLOWING SHALL BE FREE FROM PAINT: FRONT & BACK FACES OF OIL SEALING FLANGE, PARTS ABOVE FLANGE, FRONT & BACK FACES OF OUTPUT FLANGE, MOUNTING SURFACE ON MAGNETS, COOLANT PLUG, CONNECTORS & THREAD ON TUNER HEAD.
12. CATHODE STEM TEMPERATURE MEASURED AT THIS POINT.
13. ANODE TEMPERATURE MEASURED AT THIS POINT.
14. EQUIPMENT FLANGES MATING TO OIL SEALING FLANGE AND TO OUTPUT FLANGE SHOULD PROVIDE COMPLIANCE AS BY MEANS OF A RELEASER OR OTHER FLEXIBLE UNION. THESE FLANGES MAY NOT BE USED IN SUPPORTING THE TUBE. ENTIRE WEIGHT IS TO BE HELD BY MAGNET BRACKETS.
15. THESE SURFACES TO BE COPLANAR WITHIN .032.
16. WARNING: MAINTAIN 3 INCHES MIN. CLEARANCE BETWEEN MAGNETS AND FERROMAGNETIC MATERIALS EXCEPT AT BRACKET ENDS WHERE MIN. CLEARANCE MAY BE 1 INCHES. MAINTAIN 12 INCHES CLEARANCE TO OTHER CHARGED MAGNETS.
17. PAINT WITH BLACK, HEAT RESISTANT, NONCORROSIVE PAINT.
18. SPLINE SPECIFICATIONS - 141/2° PRESSURE ANGLE, 18 PITCH, 12 TEETH, +.000 PITCH DIA.
19. 3/16 - 24 NFP.
20. TORQUE REQUIRED TO MOVE THE TUNER DRIVE COUPLING SHALL NOT EXCEED 35 INCH OUNCES.
21. THE TOTAL NUMBER OF TUNER SMALL BEVEL GEAR TURNS IN REVOLUTIONS BETWEEN LIMIT STOPS SHALL NOT BE LESS THAN XXX. RATIO OF BEVEL GEARS IS 3 TO 1.
22. TUNER TEMPERATURE MEASURED AT THIS POINT. POINT TO BE AS CLOSE TO CORNER OF PART AS PRACTICAL.
23. WIGGINS #1704 COUPLING PLUG.
24. PROTECTIVE COVERINGS FOR SHIPPING PURPOSES ONLY.

