SPECIFICATION

48 KILOWATT KU-BAND PULSED MAGNETRON TUNEABLE INTEGRAL MAGNET.

RELMAG, INC.
1240 HIGHWAY 1, WATSONVILLE, CALIFORNIA 95076

SPECIFICATION

RM. ~~175~~ 172

DB 8/8/74

8-8-74

1.0 DESCRIPTION

Ku-Band Pulsed Magnetron, Integral Magnet. 40 Kw. minimum power output Tuneable 16,000 to 16,200 MHz.

2.0 ABSOLUTE RATINGS

Parameter	If Surge	Tk	VSWR	T Ambient	T Anode	Altitude
Units	A	Sec	Ratio	°C	°C	ft
Maximum	6.0	-	1.5:1	+85	+125	50,000
Minimum	-	120	-	-	-	-

3.0 DEPENDENT RATINGS

Parameter	Ef	If	ib	Pi avg.	Pi peak	Duty	Tpc
Units	Vac	A	A	Watts	Kilowatts	Ratio	/usec
Maximum	13.8	2.0	9.5	~~42~~ 266	~~33~~ 133	.00~~25~~2	2.~~0~~5
Minimum	11.4	2.4	-	-	-	-	0.20

4.0 PHYSICAL CHARACTERISTICS

4.1 Dimensions - See RM.172-1

4.2 Mounting Position - Any.

4.3 Support - Mounting Plate.

4.4 Coupling Waveguide UG541/U

4.5 Weight 6 lbs. Max.

4.6 Spec. References Mil.Std. 1311A.

4.7 Cooling - Conduction.

5.0 PUISE CHARACTERISTICS

Spec.Ref.	Conditions.	
4304 4305	Oscillation 1.	
	Pulse width	1.0 /usec.
	Repetition rated	2000 pps
	Duty cycle	.002
	Average Current	14.0 ma.
	Notes 1, 3, 5.	

6.0 OPERATING CONDITIONS

Spec.Ref.	Test	Conditions	Symbol	Limits Min.	Limits Max.	Units
	Holding Period	Non-operate	-	168		Hrs.
	Dimensions	Outline RM.172	-	-	-	-
1301	Heater Current	Ef=12.6 Vac Tk= 120 secs.	If	2.0	2.4	Amps.
1369	Heater Warm-Up Time.	Ef= 6.3 Vac.	Tk		120	Secs.
4306	Pulse Voltage	Osc.1	eb	13500	14500	Volts.
4218	Frequency	Osc.1	f	16000	17200	MHz.
4307	Power Output	Osc.1	Po	40		Kw.
	SIDE LOBES			10		dB
	STABILITY			~~1~~	0.1	%
	PULLING	1.5:1 VSWR.			8	MHz.

RATING AND TEST NOTES

1. Prior to the application of high voltage the cathode shall be heated to the required initial operation temperature. This may be done by applying 12.6 volts ± 5 percent for 120 seconds.

2. The time of steepest rise of voltage (TSRV) shall be expressed as the time between the 20 and 85 percent points on a line defining the steepest tangent to the leading edge of the voltage pulse above 50 percent amplitude. Any capacitance in the viewing circuit shall not exceed 6.0 pF.

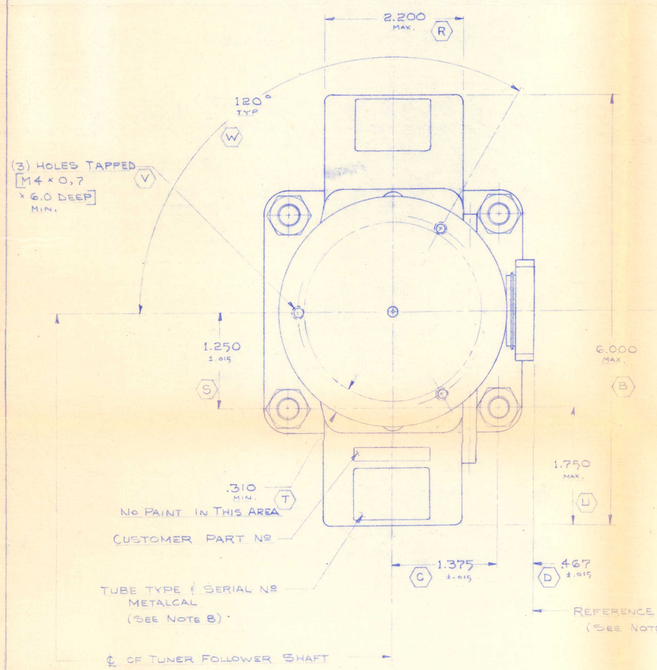
3. Since pulse width and duty cycle are inter-related, care must be exercised that the duty cycle is correct if other than nominal pulse width is used.

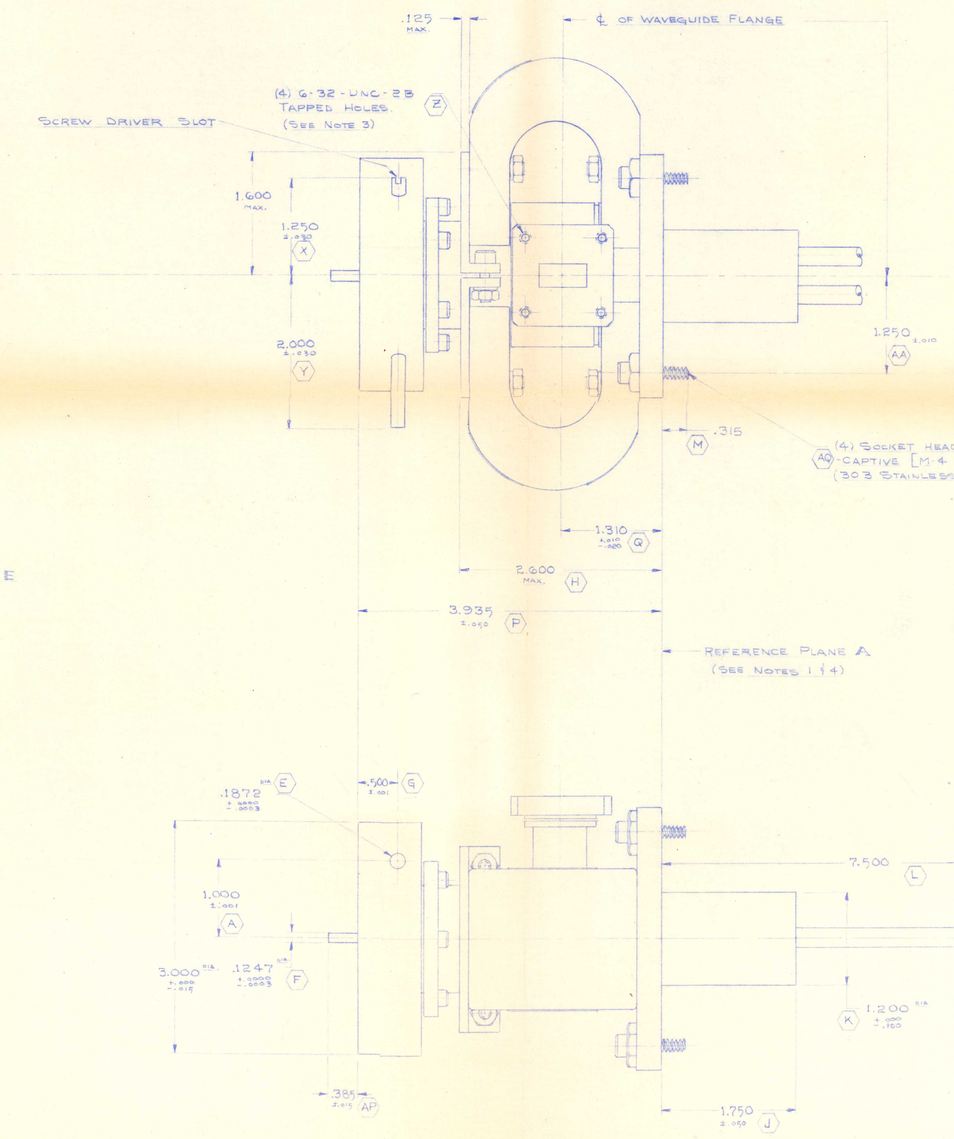
4. The load termination of the magnetron shall be a waveguide line with a VSWR less than 1.1:1 except where specifically noted.

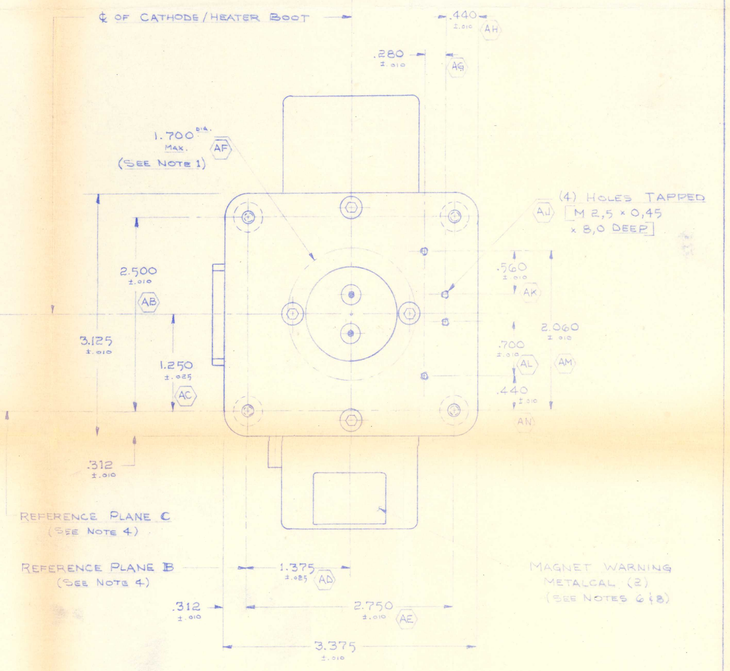
5. The characteristics of the applied pulse must be those which result in proper starting and oscillation. The time of pulse voltage rise, the percentage of pulse voltage ripple, and the rate of pulse voltage fall are among the more important considerations.

NOTE:

1) THE PORTION OF REFERENCE PLANE A (MOUNTING PLANE BEYOND 1.700 DIA. REF. TO BE FLAT WITHIN .002
2) HEATER & CATHODE LEADS TO BE "AMP-LGH-3" OR EQUIVALENT.
3) THE OUTPUT FLANGE MATES WITH WAVEGUIDE FLANGE UG-541/U OR EQUIVALENT MODIFIED WITH CLEARANCE MOUNTING HOLES. — UG-541A/U is brass choke flange for RG-91 (0.622 x 0.311)
4) THE INTERSECTION LINE OF REFERENCE PLANES A & C IS DEFINED AS THE "X" AXIS, THAT OF A & B AS THE "Y" AXIS AND THAT OF B & C AS THE "Z" AXIS.
5) DIMENSIONS IN BRACKETS, [ ], ARE MM, SEE TABLE BELOW.
6) METALCALS SHALL NOT LIFT OR LOOSEN WHEN SUBJECTED TO PROLONGED PERIODS AT A TEMPERATURE OF 200° F.
7) SURFACE OF WAVEGUIDE FLANGE (REF. PLANE E) TO BE FLAT WITHIN .005 T.I.R., 32 FINISH.
8) WARNING: MAINTAIN MINIMUM 2 INCHES BETWEEN THIS MAGNET AND MAGNETIC MATERIALS (MAGNETS, STEEL TOOLS, PLATES, ETC.)







METRIC EQUIVALENTS [MM]

CODE	DIMENSION	CODE	DIMENSION
A	25,4	X	31,75
B	152,4	Y	50,8
C	34,93	AA	31,75
D	11,86	AB	63,5
E	4,755	AC	31,75
F	31,67	AD	34,93
G	12,7	AE	69,85
H	66	AF	43,18
J	44,45	AG	7,11
M	8	AH	11,18
N		AK	14,22
P	99,95	AL	17,78
Q	33,27	AM	52,32
R	55,88	AN	11,18
S	31,75	AP	9,78
T	7,87	K	34,8
U	44,45	L	190,5

RM-172-1

G — UPDATED / REDRAWN-ECN-805

MAT'L

OUTLINE DRAWING (TENTATIVE)

DR Shields 4-26-77
CH [illegible] 5-2-77
APP [illegible] 5-2-77

SCALE: FULL

SEE ASSEMBLY 129

RM-172-1

EEV. Inc;
Relmag Division
1240 Highway 1
Watsonville, California 95076