ADVANCE DATA

MECHANICAL DATA

Mounting Position	Any	
Overall Dimensions	7 11/16 x 6 5/8 x 4 21/64	Inches
Net Weight	13	Lbs. approx.
Cooling [1]	Forced Air	
Pressurization	40-45	psi abs.
Output Coupling	Standard Choke Flange UG-52/U	
Vibration (non-operating)	50 cycles - 10 G	
Tuner Drive Torque	24 in. - oz. (Max.) at room temp.	
Backlash	10 Mc/sec. (Max.)	
Tuning Rate	Nominal Rate = 5.1 Mc/turn of worm shaft	

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage - Preheat [2]	13.75	V
Heater Current at 13.75 V	3.00 - 3.75	Amps
Minimum preheat time	3	Minutes

RATINGS (Absolute Maximum) [3]

Heater Voltage [2]			
Heater Current (Surge)		12	Amps
Peak Current		30	Amps
Average Power Input		690	Watts
Anode Temperature [1]		150°	C
Cathode Terminal Temperature [1]		165°	C
Pulse Duration		3.3	μs
Duty Cycle		.0013	
Rate-of-rise of Voltage [4]	Osc. 1:	135	KV/μs
	Osc. 2:	110	KV/μs
VSWR		1.5:1	

TYPICAL OPERATION [1, 2, 5]

	Oscillation 1	Oscillation 2		
Pulse Recurrence Frequency	1000	333	pps	
Pulse Duration [4]	1.0	3.0	μs	
Peak Anode Voltage	21.0	20.5	kv	
Peak Anode Current	27.5	23.5	Amps	
Average Anode Current	27.5	23.5	Ma	
Useful range of average current	18-27.5	18-23.5	Ma	
Average Power Output	180	140	Watts	Min. [6]
Pulling Factor	16	16	Mc	Max.

from JETEC release #1845, Feb. 11, 1957

QUICK REFERENCE DATA

Sylvania Type 6874, selected bandwidth M561, is a high power, pulsed, tunable magnetron with frequency range between 8800 - 9400 Mc. The 6874 is similar to 4J50 with the tube supplied with magnet in place.

SYLVANIA ELECTRIC PRODUCTS INC.

ELECTRONICS DIVISION
WOBURN, MASS.

Prepared and Released By The TECHNICAL PUBLICATIONS SECTION EMPORIUM, PENNSYLVANIA

December 26, 1956

NOTES:

1. Cooling should be provided to keep anode temperature below 125° C and cathode terminal below 165° C at "BH" on outline drawing.

2. During high voltage pulse operation, reduce heater voltage according to the following formula:

Power Input $\leqq$ 100 watts	Ef = 13.75 V
Power Input $>$ 100 watts	Ef = 14 (1-Pi/1120)

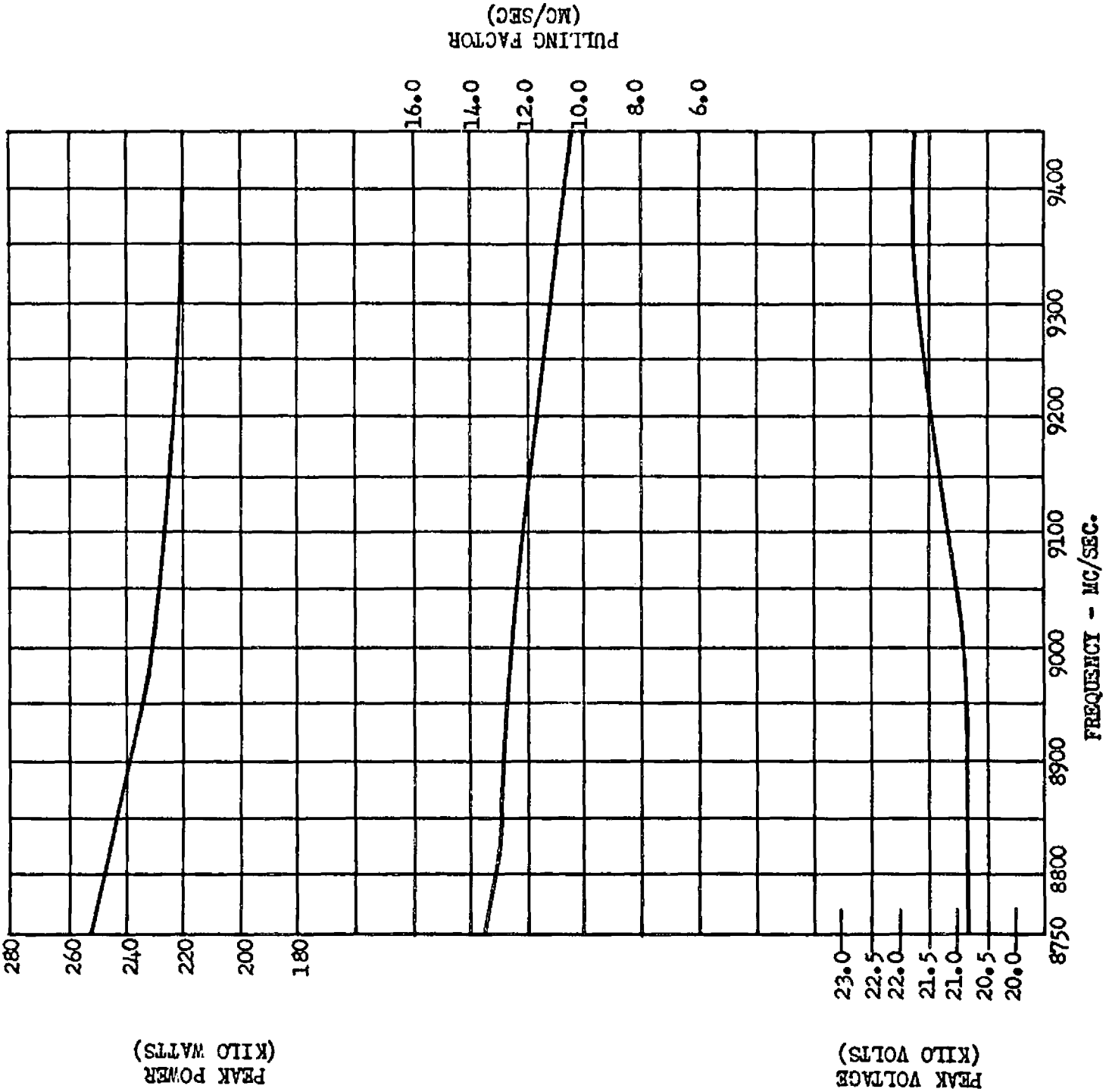
3. The values specified are based on the "absolute system" and are not to be exceeded under any service conditions. The ratings are limiting values above which serviceability of any individual tube may be impaired. It does not necessarily follow that combinations of absolute maximum ratings can be attained simultaneously.

4. The rrv shall be expressed in kilovolts per microsecond defined by the steepest tangent to the leading edge of the voltage pulse above 80% amplitude. Any capacitance used in viewing system shall not exceed 6 $\mu\mu$f.

5. Pressurize waveguide to 600 mm Hg for peak input power greater than 635 KW.

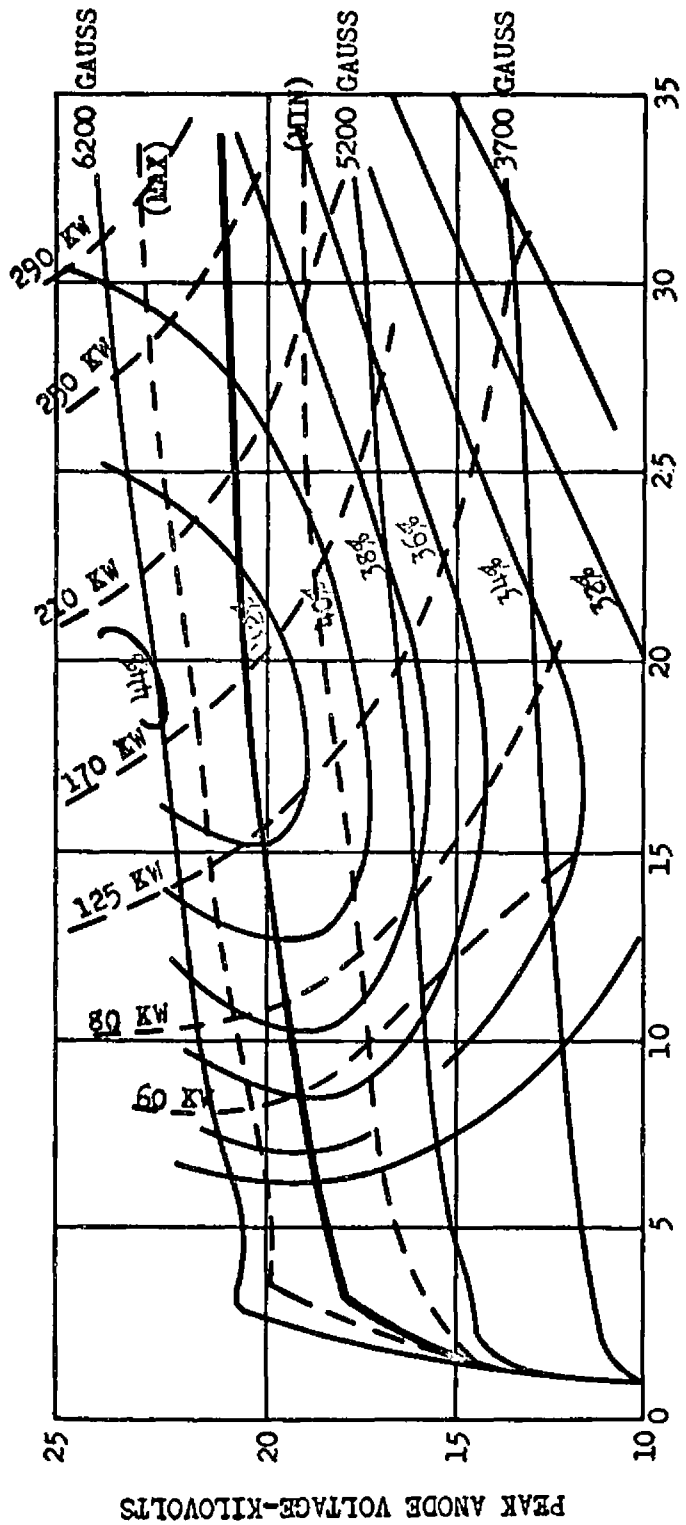
6. The minimum power requirement must be satisfied over the specified frequency band. This test is also to determine that there are not serious defaults of performance over the tuning range.

6874
AVERAGE PERFORMANCE DATA

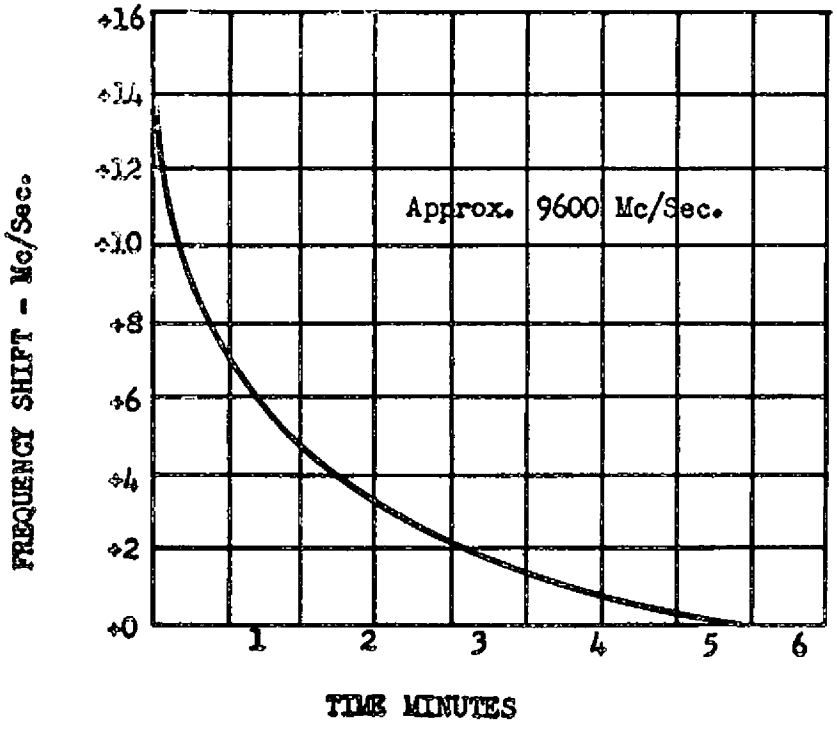


AVERAGE PERFORMANCE CHART

For Type 6874 (Refer to heavy line)
Eo, 9075; TP = 1 μsec; Duty Cycle = .001

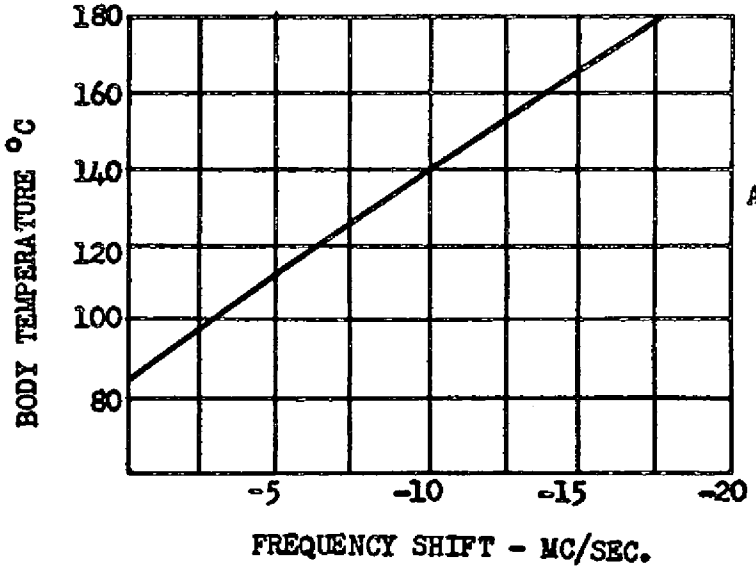


FREQUENCY SHIFT DATA - 6874

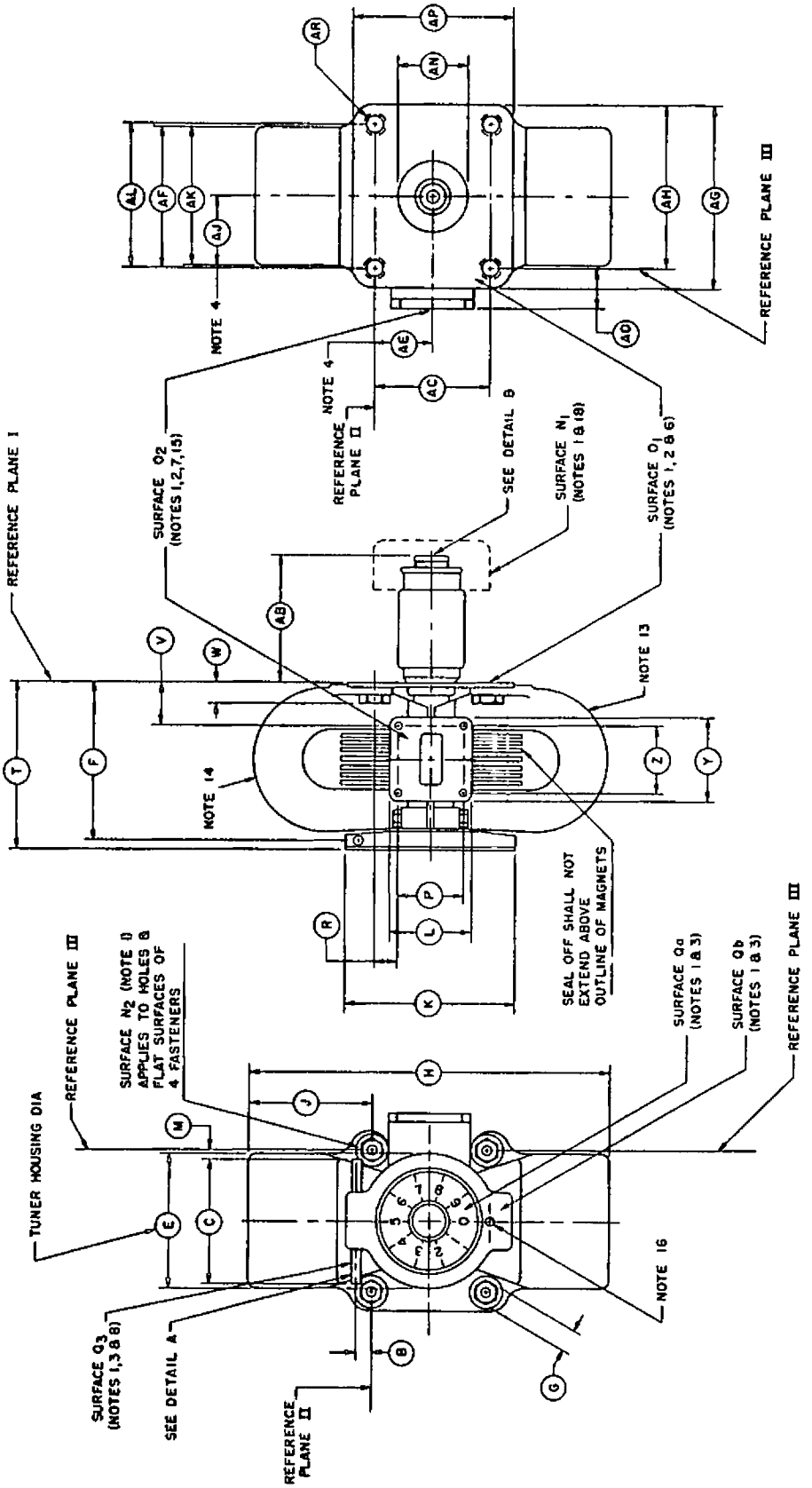


FREQUENCY DRIFT VS. TIME FROM APPLICATION OF ANODE POWER

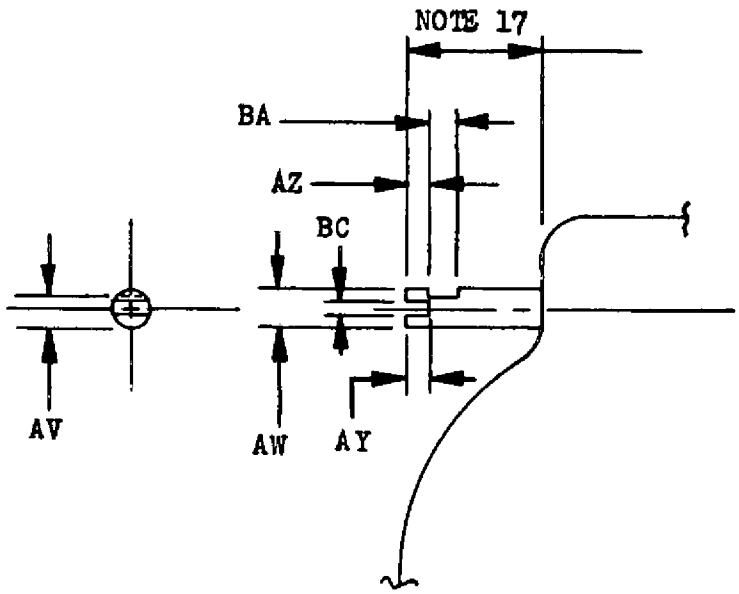
FREQUENCY VS. BODY TEMPERATURE



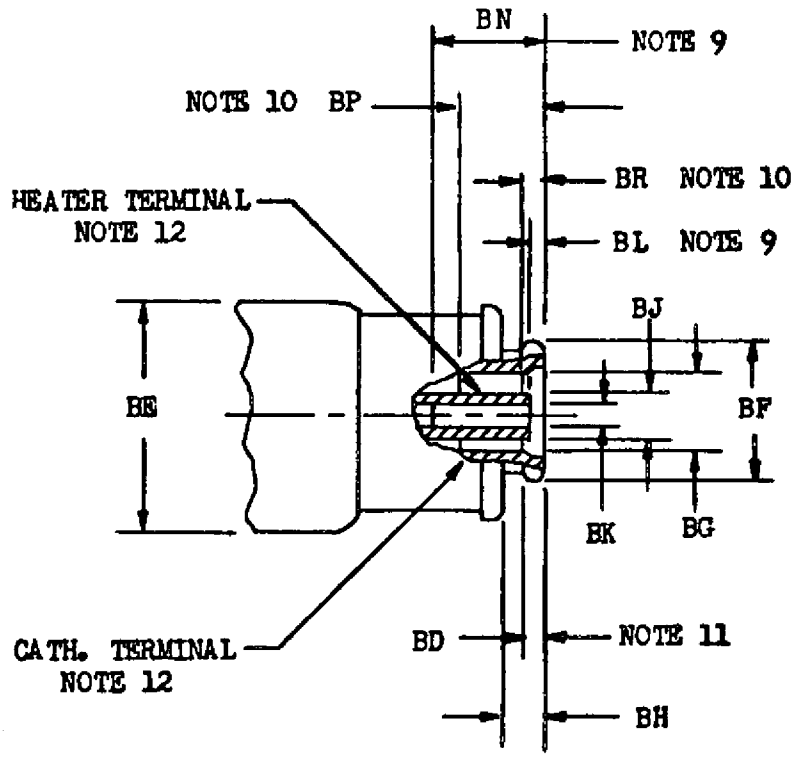
APPROX. 9300 Mc/sec



Refer to Pages 8 & 9 for Outline Dimensions and Outline Notes



DETAIL "A"



DETAIL "B"

Refer to Pages 8 & 9 For Outline Dimensions and Outline Notes

	REF.	DIMENSIONS
**	B	.221 ± .035
**	C	2 3/4
**	E	2 15/16 Max.
*	F	3 31/64 ± 3/64
**	G	1/2
**	H	7 11/16
**	J	2 19/32
**	K	3 7/8 Max.
**	L	1.830
*	M	1/8 ± 1/16
	P	1.474 ± .004
	R	1.513 ± .045
*	T	3 15/16 Max.
	V	.977 ± .032
*	W	5/8 ± 1/32
**	Y	1.830
	Z	1.352 ± .004
	AB	2 11/16 ± 1/16
	AC	2.500
	AD	.907 ± .025
*	AE	1.250 Note 4
*	AF	3" Max.
**	AG	3 7/8 Max.
*	AH	3 27/64 Max.

	REF.	DIMENSIONS
*	AJ	1.500 Note 4
**	AK	2 7/8 Max.
	AL	3.000
**	AN	1 1/2 Max.
**	AP	3 15/32 Max.
*	AR	.281 ± .005
*	AV	5/32
*	AW	.187
*	AY	1/8
*	AZ	1/8
*	BA	8/16
	BC	.052
**	BD	1/8
**	BE	1 1/2 Max.
	BF	$.830\ ^{+\ .000}_{-\ .005}$
	BG	$.540\ ^{-\ .000}_{+\ .005}$
	BH	1/4 ± 1/32
*	BJ	1/4
	BK	.169 ± .005
	BL	5/32 ± 1/32
	BN	3/4 Min.
	BP	.316 Min.
	BR	.156 Max.

** Qualification Approval Measurements

* Design Test Measurements

NOTES:

** 1. All metal surfaces, covered by black finish except those marked N, O, or Q. Surfaces marked N or O shall be silver, nickel plated or brass surfaces.

2. Hermetic connections can be made to surfaces O_1 & O_2.

3. Surfaces marked Q are tuner parts and shall have the following markings:

(a) Black line running between index hole & tuner dial on an aluminum, silver, nickel plated or brass surface.

(b) Decimal dial face numbered from 0 to 9 with 1/10 division marks applied to a black surface.

* 4. The axis of the cathode terminal shall be within a radius of 3/64 of the specified location, Note 5 applies.

5. The limits include angular as well as lateral deviations.

6. All points on the mounting surface shall be within .015" of Ref. Plane I.

7. With the flange on a plane surface a .005 thickness gauge 1/8 wide shall not enter.

8. Clockwise rotation of the indicated end of the worm shaft, will result in the increased frequency, 138 turns of the worm shaft is required to traverse the frequency range in one direction.

9. These dimensions define the extremities of the cylindrical section given by the (BK) dimension

10. These dimensions define the extremities of the cylindrical sections given by the (BG) dimension the step with Max. depth of .156 is optional.

**11. No clamping means to bear beyond the dimension.

12. The heater terminal shall be concentric with the cathode terminal within 0.010.

13. Marking-warning maintain minimum clearance 2" between the magnet & magnetic material

14. Marking-type No. & Commercial or Mil Stamp.

**15. The opening in the waveguide shall be enclosed by a dust cover when tube is not in not in use.

16. Number appearing here indicates number of complete revolutions of gear from 0 to 6.

17. It shall be possible for a sleeve .195 I.D. x .406" O.D. to pass over ends of shaft to within 1/4" of face of worm bracket.

18. Silver plate or nickel plate over full extent of plug connection as defined in Notes 9 & 10.