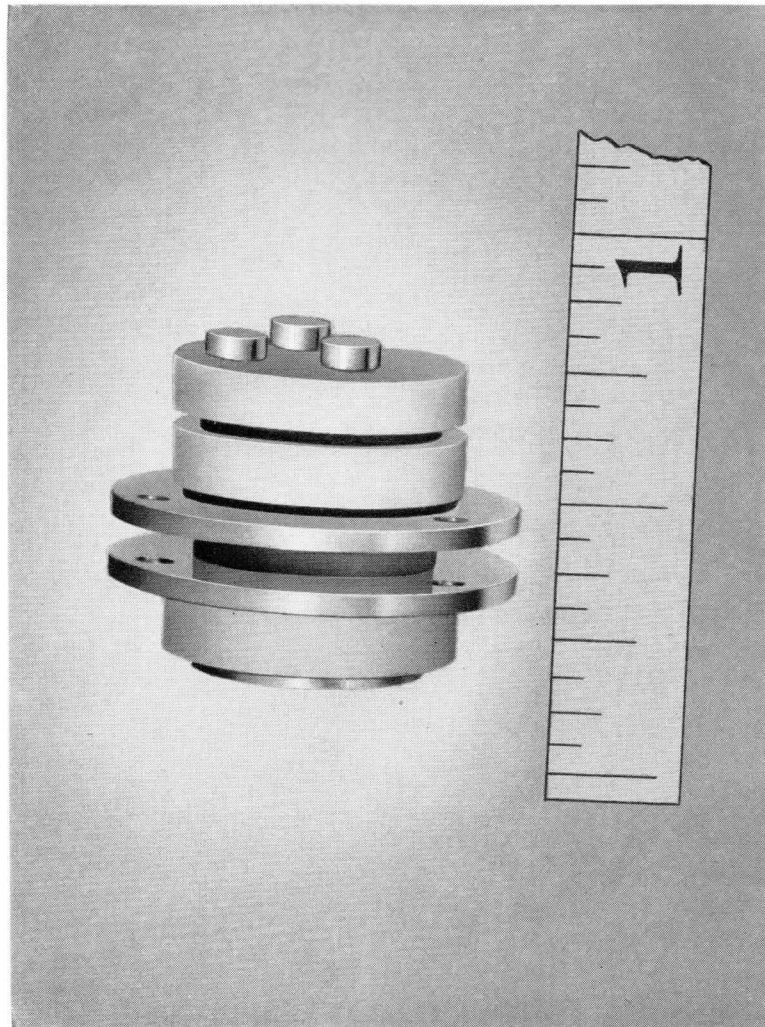




VOLTAGE-TUNABLE MAGNETRON

METAL AND CERAMIC

POWER OUTPUT—10 WATTS

2000-4000 MEGACYCLES

VOLTAGE-TUNED OVER FREQUENCY RANGE

The GL-6917 is a CW interdigital voltage-tunable magnetron for operation in the 2000-to-4000-megacycle range. In a narrow-band circuit, this tube has a power output up to 10 watts. In a circuit covering 2000 to 4000 megacycles, it has a power output up to 1.0 watt.

A novel ceramic-to-metal seal construction results in a tube extremely small in size—less than $\frac{5}{8}$ inch long and less than $\frac{3}{4}$ inch in diameter—

and one which is especially designed for operation at microwave frequencies.

The GL-6917, in an external r-f circuit, may be voltage-tuned over a portion or all of the frequency range for which it is designed. The frequency of the generated signal is a linear function of the anode voltage. The r-f power output at any frequency is a function of the impedance of the external r-f circuit.

GENERAL  ELECTRIC

GENERAL

Electrical

	Minimum	Bogey	Maximum	
Cathode—Directly Heated				
Filament Voltage*	2.0	2.25	2.5	Volts
Filament Current*	...	3.0	...	Amperes
Direct Interelectrode Capacitances				
Anode to Anode, approximate	...	4.9	...	$\mu\mu\text{f}$
Both Anodes to Filament, approximate	...	1.3	...	$\mu\mu\text{f}$
Both Anodes to Injection Electrode, approximate	...	2.9	...	$\mu\mu\text{f}$
Both Anodes to Cold Cathode, approximate	...	3.3	...	$\mu\mu\text{f}$

Mechanical

Mounting Position—Any

Thermal

Type of Cooling—Forced Air

Envelope Temperature, maximum.....150 C

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Maximum Ratings, Absolute Values

Anode Voltage	2500	Volts
Anode Current	.40	Milliamperes
Power Input, with forced-air cooling	.60	Watts
Injection Electrode Voltage	.500	Volts
Injection Electrode Current	1.0	Milliamperes
Filament Current	3.2	Amperes
Voltage Standing Wave Ratio	1.5	

Typical Operating Conditions

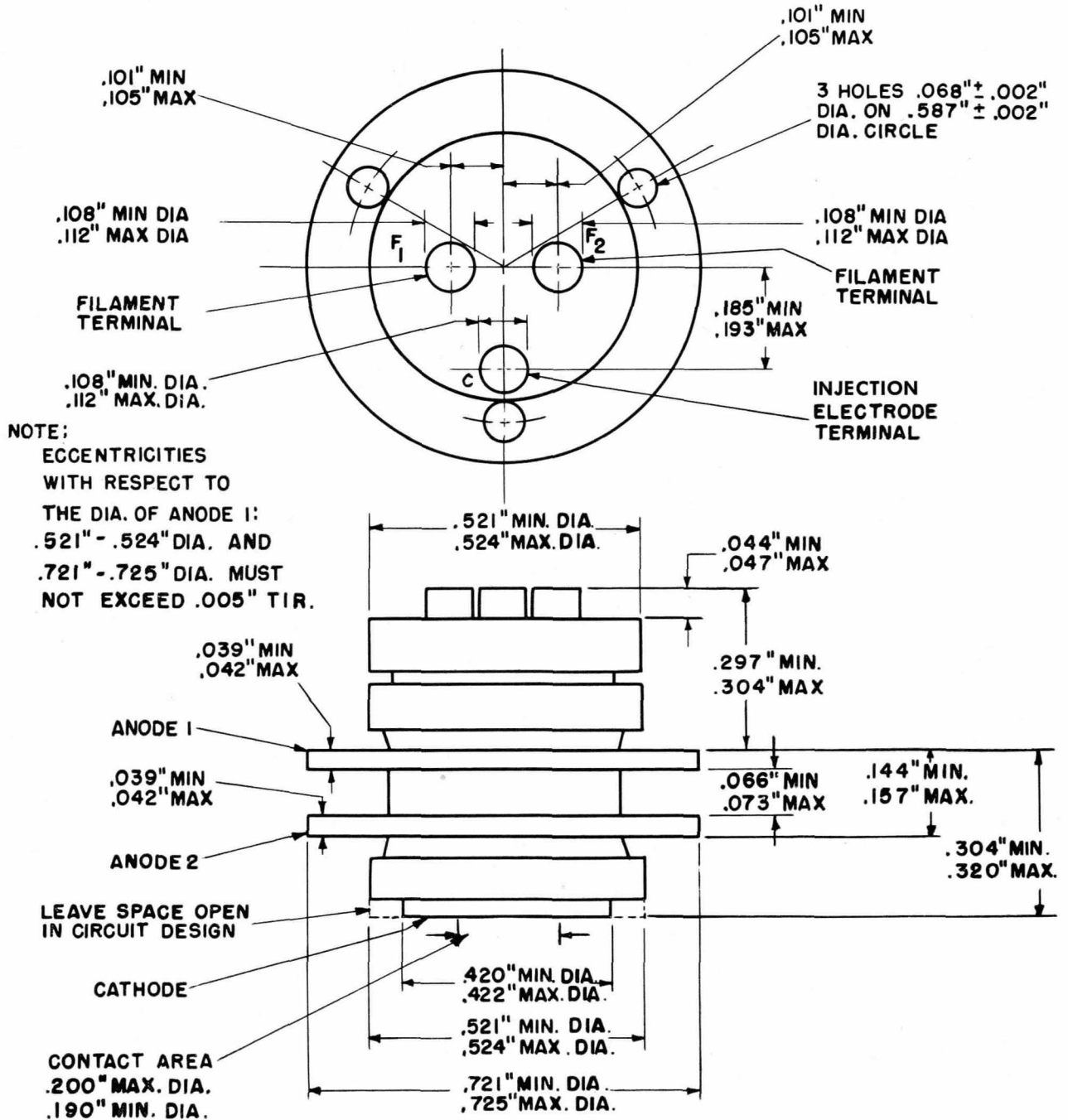
Operation with 60-Cycle Sweep Voltage in a Wide-Band Circuit

Tunable Range†	2000 to 4000	Megacycles
Magnetic Field Strength‡	2500 $\pm$ 50	Gausses
Tuning Rate, approximate	3.0	Megacycles per Volt
Filament Voltage, approximate*	2.25	Volts
Filament Current*	3.0	Amperes
Anode Voltage at 3 Kilomegacycles, 2500 gaussses	1150	Volts
Anode Current, average	10 to 20	Milliamperes
Injection Electrode Voltage, positive with respect to cathode	300 to 500	Volts
Injection Electrode Current	0.1	Milliamperes
Voltage Standing Wave Ratio	1.3	
Power Output, average	0.5 to 1.0	Watts

* Filament current should be adjusted to 3.0 amperes.

† Frequency controlled by anode voltage.

‡ An "E" shaped, nylon-coated magnet is available from the tube manufacturer. Other magnets can be used, provided they can supply a uniform field of 2500 gaussses across an air gap at least $\frac{1}{8}$ inch long and $\frac{1}{32}$ inch in diameter. The tube will operate satisfactorily between 2000 and 3000 gaussses with some change of characteristics. In general, increasing the magnetic field will increase the power-output, efficiency, and the anode voltage for constant frequency and decrease the tuning rate.



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