



**ELECTRONIC
INNOVATIONS**
IN ACTION

TUBES

PRELIMINARY TECHNICAL INFORMATION

These ratings represent those of current samples of this type. Refer to the Objective Technical Information sheet for design-objective ratings.

**DEVELOPMENTAL
TYPE**

ZP-1044
PTI-149B
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This technical information is proprietary and is furnished only as a service to customers.

ZP-1044

TETRODE

Internal Feedback for CW Oscillator Service
Grounded-Grid Operation

Forced-Air Cooled
Metal and Ceramic

The ZP-1044 is a forced-air cooled power tetrode especially designed for CW oscillator service through approximately 1250 megacycles. This tube is particularly well suited for use in special applications such as a high level RF power source operating over the range of 200 to 1000 megacycles.

The tube features internal feedback which eliminates the need for the complicated external circuit arrangements normally required in oscillator service. This special feature greatly simplifies cavity design, construction, and operation, particularly where very broad frequency coverage is required.

Other features include metal and ceramic construction, an integral radiator capable of dissipating 1500 watts and an indirectly heated thoriated tungsten cathode.

ELECTRICAL	Minimum	Bogey	Maximum	
Heater Voltage*	—	5.7	6.0	Volts
Heater Current at 5.7 Volts	22	24	26	Amperes
Heater Starting Current	—	—	36	Amperes
Heater Cold Resistance	—	0.02	—	Ohms
Cathode Heating Time	1	—	—	Minutes
Direct Interelectrode Capacitances				
Input, G ₂ tied to G ₁	—	17.0	—	μμf
Output, G ₂ tied to G ₁	—	5.5	—	μμf

MECHANICAL

Mounting Position	Any
Net Weight, approximate	3.6 Pounds

THERMAL

Air Flow†

Through Radiator, at Sea Level

Plate Dissipation	1.5	Kilowatts
Air Flow, 45 C Incoming Air Temperature, Minimum	60 Min	Cubic Feet per Minute
Static Pressure	1.5	Inches-Water
Heater-to-Cathode Seals	8 Min	Cubic Feet per Minute
Screen-Grid to Control-Grid Seals	4 Min	Cubic Feet per Minute
Anode to Screen-Grid Ceramic Insulator	6 Min	Cubic Feet per Minute
Radiator Hub Temperature at Fin Adjacent to Anode Seal	180 Max	C
Ceramic Temperature at Any Point	200 Max	C

CW RADIO-FREQUENCY OSCILLATOR - CLASS C

Maximum Ratings, Absolute Values

DC Plate Voltage	4000 Max	Volts
DC Grid-No 2 Voltage	600 Max	Volts
DC Grid-No. 1 Voltage	-150 Max	Volts

The specifications of this type are subject to change. This device is now under development and is made available for experimental purposes only. For the most recent information concerning the status of this development, please consult your local Power Tube Department Regional Sales Office, or current Preliminary Technical Information for the same catalog number.

CW RADIO-FREQUENCY OSCILLATOR - CLASS C (CONT'D)

Maximum Ratings, Absolute Values (Cont'd)

DC Plate Current	0.7 Max	Amperes
DC Grid-No. 1 Current	0.10 Max	Amperes
Plate Input	2.5 Max	Kilowatts
Grid-No. 2 Input	25 Max	Watts
Plate Dissipation	1.5 Max	Kilowatts

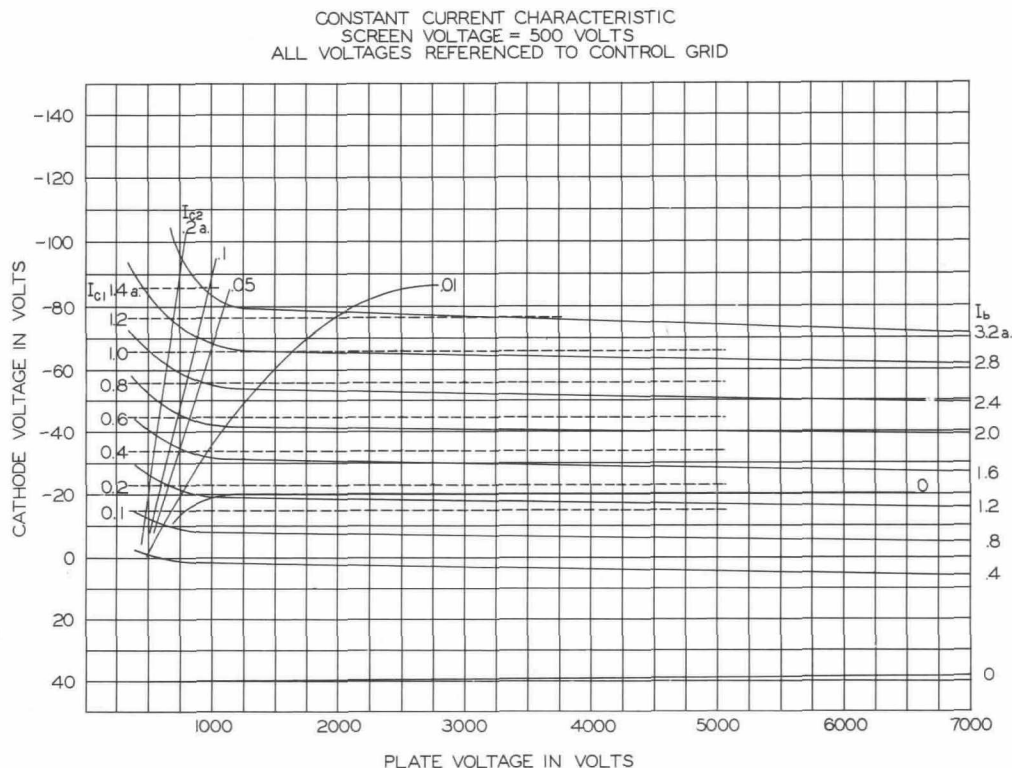
Typical Operation - Grounded-Grid Circuit up to 1000 Megacycles

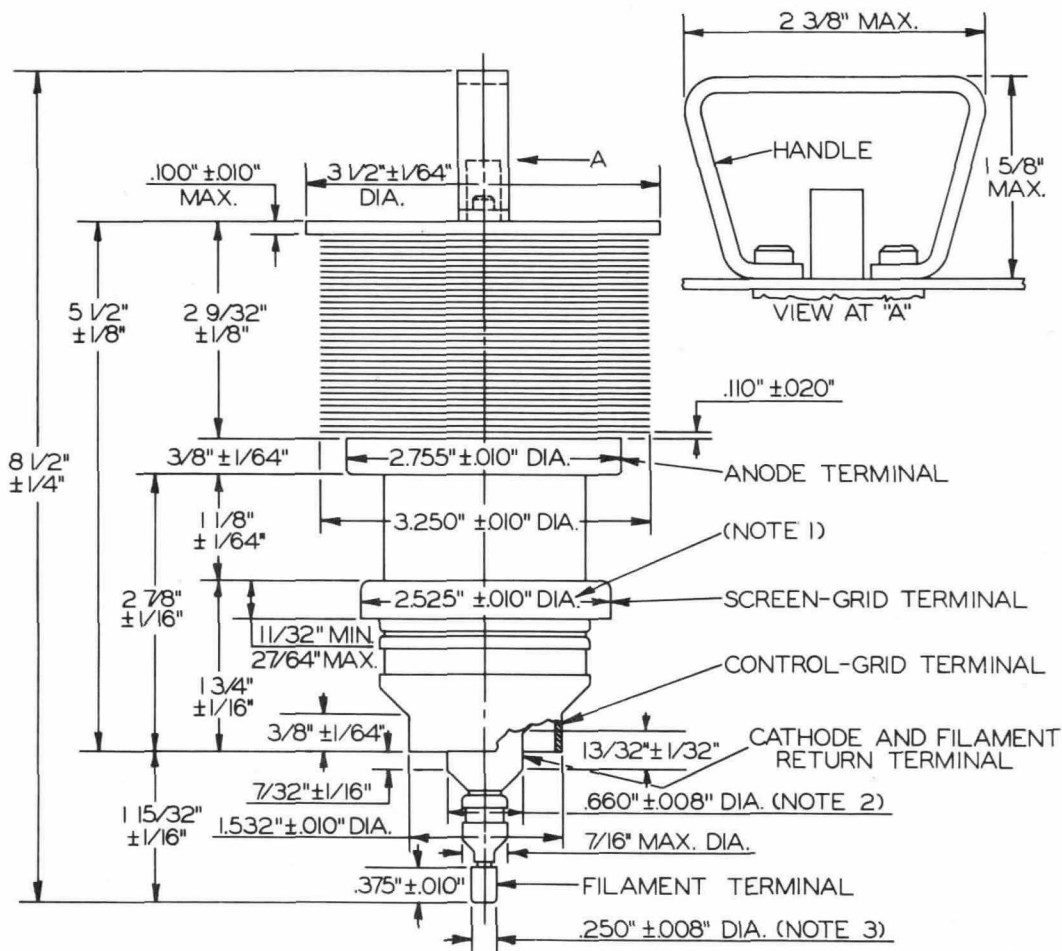
DC Plate Voltage	3800	Volts
DC Grid-No. 2 Voltage	500	Volts
DC Grid-No. 1 Voltage	-120	Volts
DC Plate Current	0.500	Amperes
DC Grid-No. 2 Current	0.022	Amperes
DC Grid-No. 1 Current, approximate	0.075	Amperes
Power Output, approximate (useful)	1100	Watts

* Because the temperature of the cathode is increased by back bombardment of electrons at UHF, required heater voltage for optimum life decreases with increasing frequency. The amount of heater voltage reduction is dependent on operating conditions.

§ Output capacitance measured between anode and screen grid. Control grid connected directly to screen grid.

¶ The volume of cooling air indicated for the various seals is approximate only. Distribution of cooling air will vary with the cavity configuration about the tube. For most satisfactory operation the maximum temperature of any point on the tube should be below 200 C. Cooling is to be provided before and during the application of any voltages.





Total Indicator Readings

Note 1: 0.020 in.

Note 2: 0.030 in.

Note 3: 0.060 in.

The above readings are measured with respect to a centerline determined by the centers of the anode terminal and control-grid terminal.

TUBE DEPARTMENT

GENERAL  ELECTRIC

Schenectady, N. Y. 12305

