



**ELECTRONIC
INNOVATIONS**
IN ACTION

TUBES

— **PRODUCT INFORMATION** —

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GL-8866

Tetrode



**GRID-PULSED SERVICE
GROUNDED-GRID OPERATION**

**HEAT-SINK AND FORCED-AIR COOLED
METAL AND CERAMIC**

The GL-8866 is a reduced-size heat-sink-cooled version of the GL-6283 especially designed for pulsed-amplifier or oscillator service at L-band frequencies. This tetrode is particularly well suited for use in airborne radar equipment such as IFF transponders.

The tube is capable of providing useful output at frequencies up to approximately 1500 megacycles.

Features of the 8866 include long life and reliability, long pulse width and high gain.

Electrical

	Mini- mum	Bogey	Maxi- mum	
Heater Voltage (See Note 1)	—	6.3	—	Volts
Heater Current	—	3.8	—	Amperes
Cathode Heating Time	1	—	—	Minute
Direct Interelectrode Capacitances*				
Cathode to Plate†	—	0.006	—	μμf
Input	—	20	—	μμf
Output	—	8.9	—	μμf

Mechanical

Mounting Position—Any	9	Ounces
Net weight, approximate	9	Ounces

Thermal

Cooling—Heat-sink and Forced-Air‡	
Anode Temperature§, maximum	250 C
Seals	
Screen and Control Grid, approximate	1 Cubic Foot per Minute
Heater and Cathode, approximate	1 Cubic Foot per Minute
Ceramic Temperature at Any Point, maximum	200 C

RADIO-FREQUENCY POWER AMPLIFIER—CLASS C

Maximum Ratings

Pulsed Drive, 1250 Megacycles	
DC Plate Voltage	3.5 Kilovolts
DC Plate Current, during pulse	5 Amperes
DC Grid-No. 2 Voltage	750 Volts
DC Grid-No. 2 Input	5 Watts
DC Grid-No. 1 Voltage	—200 Volts
Plate Dissipation	150 Watts
Pulse Width♥♦	15 Microseconds
Duty Factor♥φ	.02

Typical Operation

Grounded-Grid Service at 1100 Megacycles, 1/4λ Output Circuit	
DC Plate Voltage	2.5 Kilovolts
DC Plate Current, during pulse	1.4 Amperes
DC Grid-No. 2 Voltage	600 Volts
DC Grid-No. 2 Current, during pulse	50 Milliampers
DC Grid-No. 1 Voltage	—70 Volts
DC Grid-No. 1 Current, during pulse	90 Milliampers
Driving Power at the Tube, during pulse	165 Watts
Power Output, during pulse (useful)	1.6 Kilowatts
Pulse Width	6 Microseconds
Duty Factor	.02

Note 1: Under the typical operating conditions shown the heater voltage should be reduced to approximately 6.0 volts because of back-heating resulting from transit-time effects.

* Control grid connected directly to screen grid.

† Complete external shielding between cathode and plate.

‡ Forced air cooling should be applied during the application of any voltages.

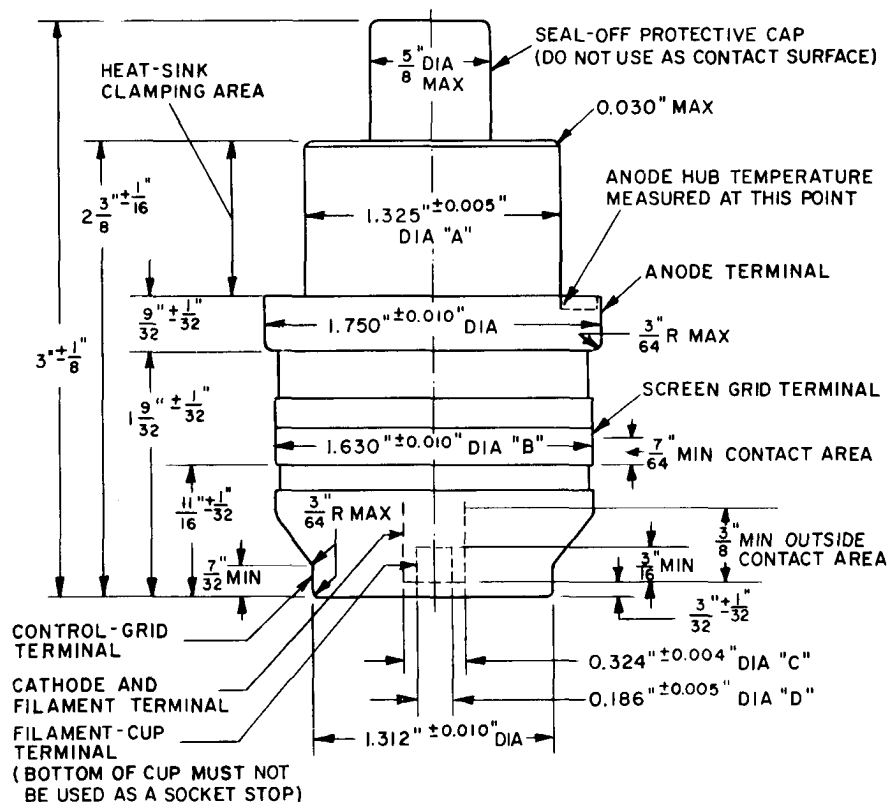
§ A suitable heat-sink clamping arrangement must be provided to limit the anode hub temperature to the value specified; the temperature is measured at the point indicated on the outline drawing.

♥ For applications that require longer pulses or higher duty refer to the tube manufacturer for recommendations.

♦ Pulse duration measured between points at 70 percent of peak value. The peak value is defined as the maximum value of a smooth curve through the average of the fluctuations over the top portion of the pulse.

φ Maximum ratio of on-time to elapsed time during any 7.5-millisecond period.

GENERAL ELECTRIC



CONCENTRICITIES :

THE FOLLOWING TOTAL INDICATOR READINGS ARE MEASURED WITH RESPECT
TO A CENTERLINE DETERMINED BY THE CENTERS OF THE ANODE TERMINAL
AND CONTROL-GRID TERMINAL.

DIAMETER "A" - 0.030 INCH
DIAMETER "B" - 0.016 INCH
DIAMETER "C" - 0.036 INCH
DIAMETER "D" - 0.042 INCH

TOTAL INDICATOR READING OF FILAMENT CUP-TERMINAL DIAMETER (D)
MEASURED WITH RESPECT TO CENTER OF CATHODE AND FILAMENT-
TERMINAL DIAMETER (C) 0.016 INCH.

TUBE DEPARTMENT

GENERAL  ELECTRIC

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