



**ELECTRONIC  
INNOVATIONS**  
IN ACTION

**TUBES**

**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
<b>Direct Interelectrode Capacitances*</b>				
Cathode to Plate† . . . . .	—	0.006	—	μμf
Input . . . . .	—	20	—	μμf
Output . . . . .	—	8.9	—	μμf

**Mechanical**

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

**Thermal**

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

**RADIO-FREQUENCY POWER AMPLIFIER—CLASS C**

**Maximum Ratings**

<b>Pulsed Drive, 1250 Megacycles</b>			
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**

<b>Grounded-Grid Service at 1100 Megacycles, 1/4λ Output Circuit</b>			
DC Plate Voltage . . . . .	2.5	2.5	Kilovolts
DC Plate Current, during pulse . . . . .	1.4	1.0	Amperes
DC Grid-No. 2 Voltage . . . . .	600	600	Volts
DC Grid-No. 2 Current, during pulse . . . . .	.50	0	Milliamperes
DC Grid-No. 1 Voltage . . . . .	—70	—70	Volts
DC Grid-No. 1 Current, during pulse . . . . .	.90	80	Milliamperes
Driving Power at the Tube, during pulse . . . . .	165	95	Watts
Power Output, during pulse (useful) . . . . .	1.6	1.0	Kilowatts
Pulse Width . . . . .	6	6	Microseconds
Duty Factor . . . . .	.02	.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.

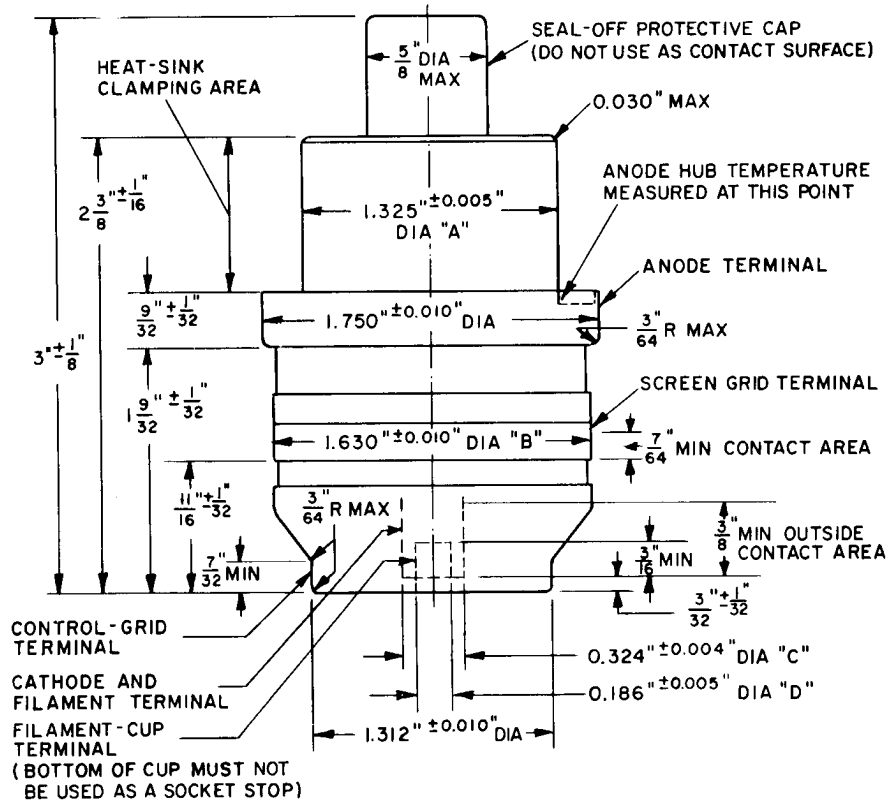
‡ Forced air cooling should be applied during the application of any voltages.

§ 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.



**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



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