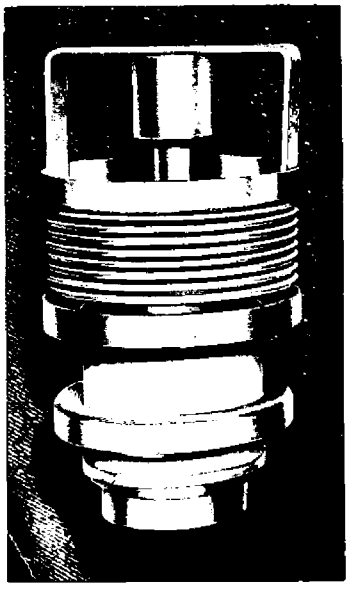


GL-7399

TETRODE

PULSED SERVICE
GROUNDED-GRID OPERATION

FORCED-AIR COOLED
METAL AND CERAMIC

INTEGRAL RADIATOR

The GL-7399 is a small-size, four-electrode transmitting tube especially designed for pulsed-amplifier or -oscillator service at L-band frequencies. This tetrode is particularly well suited for use in airborne or ground-based radar equipment.

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

Features of the GL-7399 include long life and reliability, long pulse width, high peak power and high gain, broad-banding capability, and resistance to shock and vibration.

These together with such design factors as an oxide-coated cathode, coaxial elements, and metal-ceramic construction make the tube well adapted to application in modern systems where performance and reliability are important.

Electrical

	Minimum	Bogey	Maximum	
Heater Voltage	6.0	6.3	6.8	Volts
Heater Current	....	5.6	....	Amperes
Amplification				
Factor, G_2 to G_1	....	10.5	....	
E_{c2} = 275 Volts DC, E_b = 1000 Volts DC, I_b = 200 Milliamperes DC				
Cathode Heating Time	1	....	....	Minute
Direct Interelectrode Capacitances*				
Cathode to Plate†	....	0.012	....	$\mu\mu f$
Input	....	21.5	....	$\mu\mu f$
Output	....	9.3	....	$\mu\mu f$

Mechanical

Mounting Position—Any

Net Weight	....	1.0	....	Pounds

Thermal

Cooling— Forced Air‡

Radiator§				
Plate Dissipation	300	240	180	Watts
Air Flow, 45 C incoming air temperature	15	10	5	Min Cubic Feet per Minute
Static Pressure, anode at room temperature¶	0.60	0.30	0.10	Inches-Water
Radiator Hub Temperature▲			180	Max 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			200	Max C

MAXIMUM RATINGS AT 500 MEGACYCLES

Radio-Frequency Power Amplifier—Plate and Screen Grid Pulsed

DC Plate Voltage, during pulse	10	Kilovolts	
DC Plate Current, during pulse	10	Amperes	
DC Screen Voltage, during pulse	2000	Volts	
DC Screen Input♣	15	Watts	
Plate Dissipation♣	300	Watts	
DC Grid-No. 1 Voltage, not pulsed	−175	Volts	
DC Grid-No. 1 Current, during pulse	2.5	Amperes	
Pulse Width♥♦	15	Microseconds	
Duty Factor♥ϕ	0.0012		

TYPICAL OPERATION AT 500 MEGACYCLES

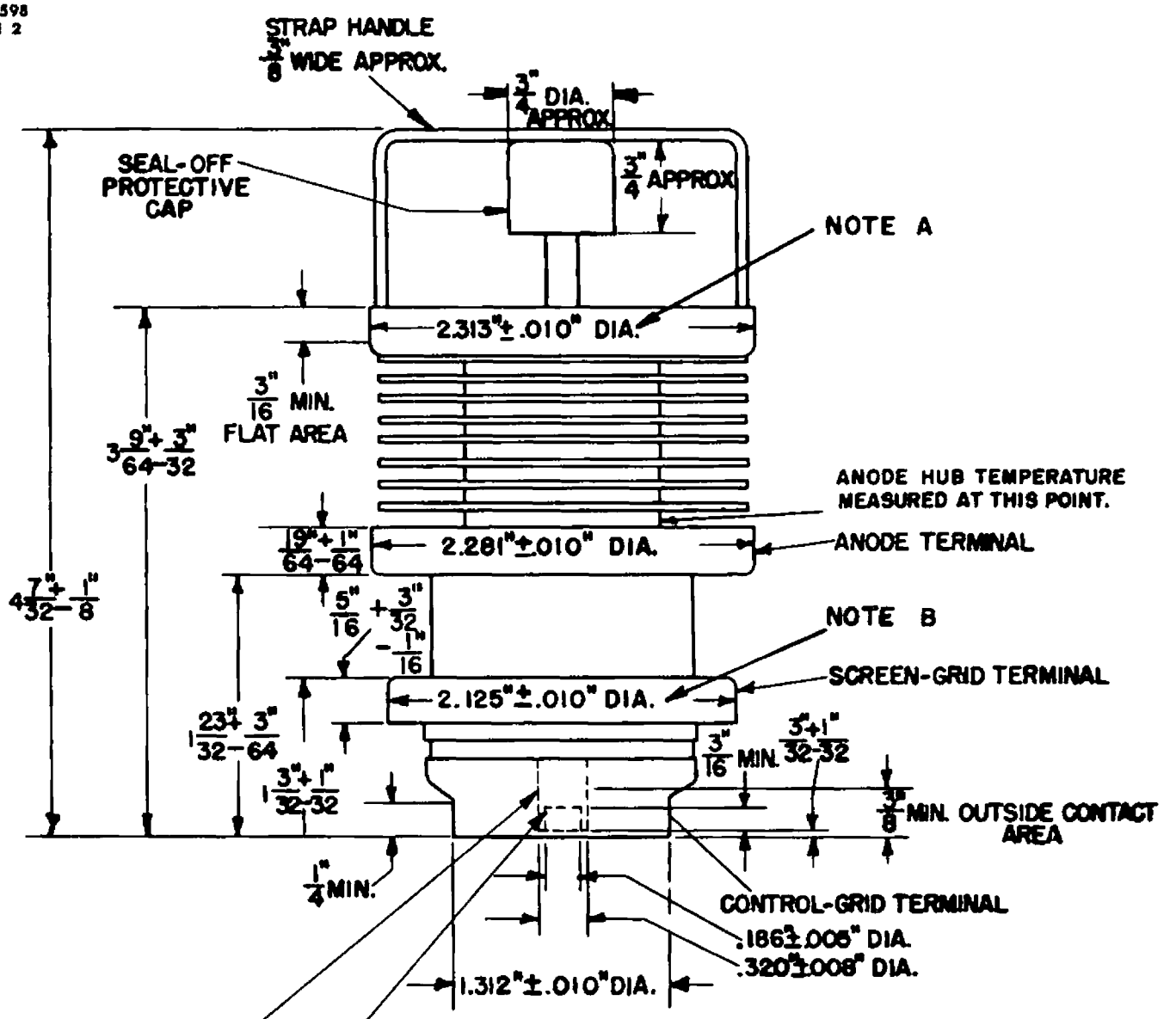
Class B, Grounded-Grid Service

DC Plate Voltage, during pulse	9	Kilovolts	
DC Grid-No. 2 Voltage, during pulse	1400	Volts	
DC Grid-No. 1 Voltage, not pulsed	−125	Volts	
Peak RF Plate Voltage	7000	Volts	
Peak RF Grid Voltage	300	Volts	
DC Plate Current, during pulse	9.2	Amperes	
DC Grid-No. 1 Current, during pulse	1.1	Amperes	
DC Grid-No. 2 Current, during pulse	0.47	Amperes	
Driving Power at Tube, during pulse	2.6	Kilowatts	
Power Output, during pulse	52	Kilowatts	
Pulse Width♦	15	Microseconds	
Duty Factorϕ	0.001		

* 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.
§ Provision must be made for unobstructed passage of cooling air between radiator fins, and the anode terminal and adjacent fins.
¶ With anode temperature at 180 C a 10-percent increase in back pressure occurs for the specified air flow.
▲ Measured at the base of the fin adjacent to the plate terminal. See outline drawing on page 2.
♣ Maximum average value.
♥ 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 one millisecond period.

GENERAL ELECTRIC

from JEDEC release #2815, May 23, 1960



NOTES:

1. BOTTOM OF CUP MUST NOT BE USED AS A SOCKET STOP.

(A) MAX. ECCENTRICITY 0.015 INCHES
(B) MAX. ECCENTRICITY 0.008 INCHES
(C) MAX. ECCENTRICITY 0.018 INCHES
(D) MAX. ECCENTRICITY 0.021 INCHES
WITH RESPECT TO CENTERLINE DETERMINED BY CENTERS OF ANODE & CONTROL GRID TERMINALS.

K-5933-72A578

ELECTRONIC COMPONENTS DIVISION

3-8-60

GENERAL ELECTRIC

Schenectady 5, N. Y.