

NEW NATIONAL UNION ELECTRON TUBE DATA

N. U. 3 C 3 7

MICRO-WAVE COAXIAL TRIODE

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The National Union 3C37 is a Coaxial Triode, designed especially for micro-wave pulse oscillator service. Conservatively rated, one tube employed in suitable resonant cavity circuits will deliver 10 kw. peak RF power output at frequencies as high as 1150 megacycles.

MAXIMUM RATINGS:-

Heater Voltage	6.3 $\pm$ 5% max. volts
Grid Voltage	1000 max. volts
Anode Voltage (Instantaneous)	5000 max. volts
Anode Dissipation	150 max. watts
Grid Dissipation (Approx.)	25 max. watts
Operating Temperature	
Anode and Grid Seals	140°C. max.
Cathode Seal	180°C. max.

ELECTRICAL RATINGS:-

Cathode: Oxide Coated Unipotential	
Voltage	6.3 volts
Current	2.5 amperes
Amplification Factor	23

DIRECT INTERELECTRODE CAPACITANCES:-

Grid to Plate	3.5 uuf.
Grid to Cathode	4.25 uuf.
Plate to Cathode	0.60 uuf.
Transconductance	
I _b = 70 ma., E _b = 700 volts	8000 umhos
Anode Dissipation	150 watts

MECHANICAL RATINGS:-

Maximum Overall Dimensions:-	
Length	3 3/32 inches
Diameter	1 1/2 inches
Mounting Position	Any
Radiators - Integral - See outline drawing	
Type of Cooling	Air Blast

TYPICAL OPERATING CONDITIONS:-

Class C Oscillator, Plate Pulsed	
Frequency	1150 megacycles
Anode Voltage (Instantaneous)	4500 volts
Duty Cycle	0.1 %
Power Output	10 KW
Grid Resistance	100 ohms
Pulse Duration	2 micro-seconds
Cooling by Air Blast (volumes)	
Plate Radiator	4 cu. ft/min.
Grid Radiator	1 cu. ft/min.

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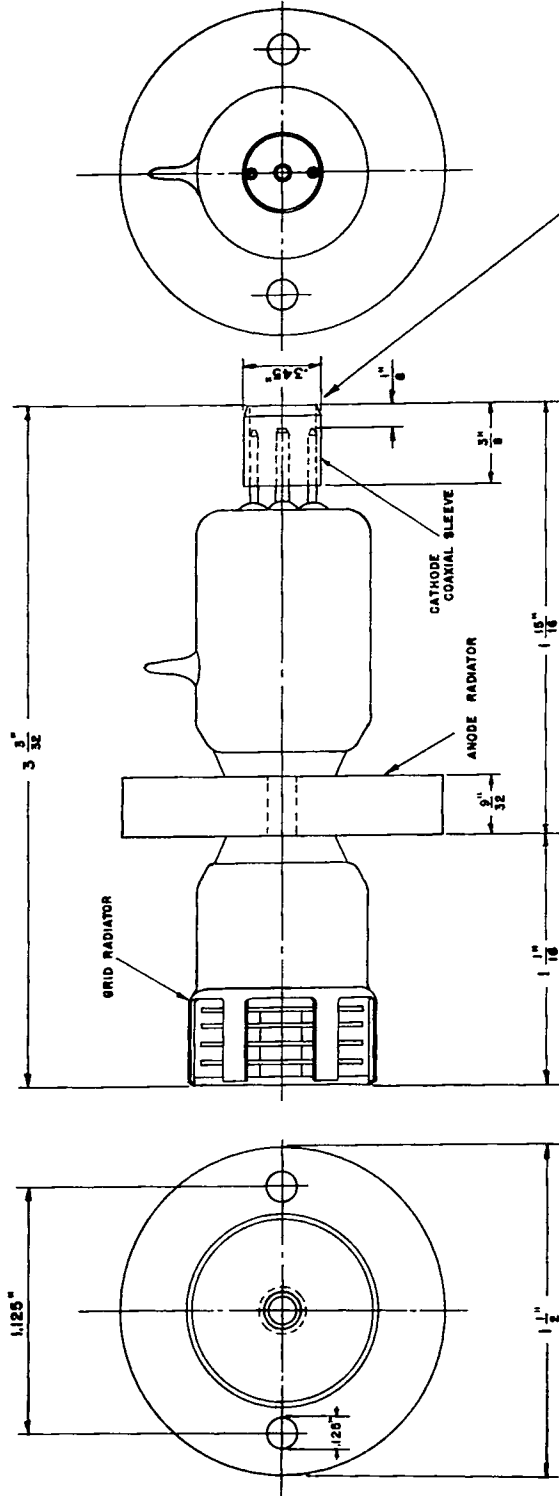
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NOTE: CATHODE AND HEATER CONNECTION TERMINATE IN 3/8" COAXIAL FITTING, CENTER CONDUCTOR CONNECTS TO HEATER.

OUTLINE DRAWING OF 3C37

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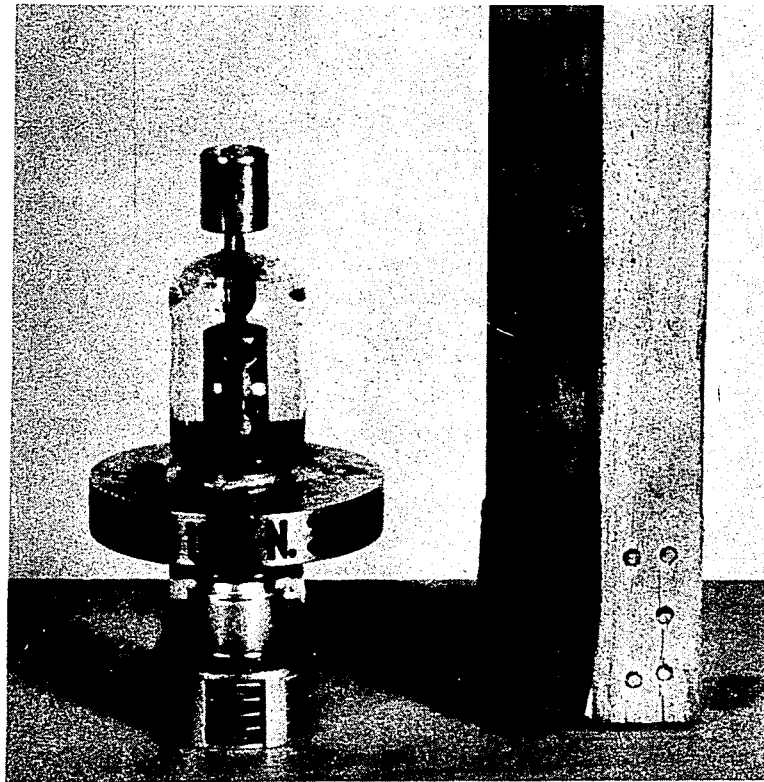
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The following advanced constructional techniques make the NU-3C37 especially well suited to applications in the intermediate micro-wave range:-

1. Anode and grid dissipation capabilities are adequate to enable the tube to withstand large momentary overloads without damage or distortion of electrical characteristics.
2. Internal and external surfaces are suitably silver plated to reduce skin resistance and RF losses to a minimum.
3. The grid employs a specially constructed radiator which greatly reduces RF losses while permitting operation at duty cycles of 1% with air-blast cooling.
4. The anode radiator is made integral with the tube and is of large mass. It is made entirely of silver plated copper and will efficiently transfer heat to any resonator of which it becomes a part.
5. Construction of tube elements on the cylindrical principle results in negligible frequency drift. Mechanical tolerances are closely controlled from tube to tube causing a minimum of frequency change between tubes where fixed resonators are employed.
6. A maximum of mechanical strength is obtained from the rugged construction of the tube, and breakage in use is negligible.



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