The National Union 3C37 is a Coaxial Triode, designed especially for microwave 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 ± 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: 140°C, max.
- Anode and Grid Seals: 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: 8000 umhos
- Anode Dissipation: 150 watts

MECHANICAL RATINGS:--

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

TYPICAL OPERATING CONDITIONS:--

- Class C Oscillator, Plate Pulled 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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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.