TRIODE OSCILLATOR

THE 7533 IS AN INTEGRAL-CAVITY OSCILLATOR ASSEMBLY DESIGNED FOR TRANSMITTING SERVICE IN BATTERY POWERED RADIOSONDES OPERATING NEAR 1680 MC/S. IT INCORPORATES A PEN-CIL TRIODE WITH UNUSUALLY LOW HEATER POWER BATTERY DRAIN, RELATIVELY HIGH PLATE CIRCUIT EFFICIENCY, LOW FREQUENCY DRIFT AND A WEIGHT OF ONLY 0.8 OUNCES. THE OUTPUT FREQUENCY CAN BE ADJUSTED BETWEEN 1660 AND 1700 MC/S BY MEANS OF 2 ADJUSTMENT SCREWS POSITIONED IN THE PLATE RESONATOR. THE CATHODE RESONATOR IS PRE-TUNED FOR UNIFORM POWER OUTPUT OVER THE TUNEABLE FREQUENCY RANGE. THE COAXIAL TERMINAL IS LOOP COUPLED TO THE PLATE RESONATOR.

MECHANICAL DATA
TERMINAL CONNECTIONS

COAXIAL OUTPUT TERMINAL

RESONATORS

H: HEATER
K: CATHODE
G: GRID
P: PLATE

PHYSICAL DIMENSIONS

SEE OUTLINE AND NOTES

ELECTRICAL DATA
HEATER CHARACTERISTICS AND RATINGS
ABSOLUTE MAXIMUM SYSTEM - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS
6.0 VOLTS 160 MA.

LIMITS OF APPLIED VOLTAGE
5.2 TO 6.6 VOLTS

MAXIMUM RATINGS
ABSOLUTE MAXIMUM SYSTEM - SEE EIA STANDARD RS-239

FOR ALTITUDES UP TO 100,000 FEET

DC PLATE-TO-GRID VOLTAGE
3.6 WATTS
PLATE DISSIPATION
34 MA.
PLATE INPUT
8 MA.
DC PLATE CURRENT
DC GRID CURRENT
AMBIENT TEMPERATURE
-55 TO +75 °C

CONTINUED ON FOLLOWING PAGE
NOTES:
1. THE AXES OF THE INNER AND OUTER CONDUCTORS OF THE COAXIAL OUTPUT TERMINAL COINCIDE WITHIN 0.010".

2. THE END OF THE INSULATOR IN THE COAXIAL OUTPUT TERMINAL Aligns WITH THE EDGE OF THE OUTER CONDUCTOR (0.151" ± 0.003" DIAMETER) WITHIN 0.005"

3. DISTANCE BETWEEN CENTER LINE OF PLATE TERMINAL AND CENTER LINE OF INNER CONDUCTOR (0.040" ± 0.001" DIAMETER).
OPERATION AS CLASS C OSCILLATOR

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERATING FREQUENCY</td>
<td>1680 MC/S</td>
<td></td>
</tr>
<tr>
<td>CHARACTERISTICS IMPEDANCE OF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COAXIAL OUTPUT TERMINAL (APPROX.)</td>
<td>50 Ω</td>
<td></td>
</tr>
<tr>
<td>DC PLATE SUPPLY VOLTAGE</td>
<td>117 VOLTS</td>
<td></td>
</tr>
<tr>
<td>GRID RESISTOR - ADJUSTED FOR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STATED PLATE CURRENT AVG. VALUE</td>
<td>1500 Ω</td>
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<tr>
<td>DC PLATE CURRENT</td>
<td>27 MA.</td>
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<tr>
<td>DC GRID CURRENT</td>
<td>4.5 MA.</td>
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<tr>
<td>USEFUL POWER OUTPUT (APPROX.)</td>
<td>575 MW.</td>
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</table>

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUNING RANGE</td>
<td>1660</td>
<td>1700</td>
</tr>
<tr>
<td>LOAD ADJUSTED FOR VOLTAGE</td>
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<td></td>
</tr>
<tr>
<td>STANDING WAVE RATIO</td>
<td></td>
<td>1.1</td>
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<tr>
<td>HEATER CURRENT AT EF = 5.2 V.</td>
<td>135</td>
<td>157</td>
</tr>
<tr>
<td>GRID RESISTOR - SEE NOTE</td>
<td>1300</td>
<td>2400</td>
</tr>
<tr>
<td>USEFUL POWER OUTPUT AT EF = 5.2 V., Eb = 95 V.</td>
<td>250</td>
<td></td>
</tr>
</tbody>
</table>

SPECIAL TESTS AND PERFORMANCE DATA

Controlled on a sampling basis

LOW-PRESSURE VOLTAGE BREAKDOWN TEST
HIGH-FREQUENCY VIBRATION TEST
MILITARY SPECIFICATIONS SHORTS AND CONTINUITY TEST PERFORMED ON ALL DEVICES
TEMPERATURE-FREQUENCY PERFORMANCE
5 HOUR RADIOSONDE LIFE PERFORMANCE TEST

NOTE:

ADJUSTED TO GIVE PLATE CURRENT AS CLOSE AS POSSIBLE, BUT NOT EXCEEDING 33 MA.
OPERATE WITH EF = 6.6 V., Eb = 117 V., PLATE LOAD RESISTANCE OF 50 Ω, FREQUENCY
ADJUSTED TO 1660 ±3, -1 MC/S.