UHF POWER TRIODE
PENCIL TYPE

FOR
RF POWER AMPLIFIER, OSCILLATOR
AND FREQUENCY MULTIPLIER APPLICATIONS
IN MOBILE AND AIRCRAFT EQUIPMENT

PHYSICAL
DIMENSIONS
SEE
OUTLINE
DRAWING

COATED UNIPOTENTIAL CATHODE
ANY MOUNTING POSITION

ELECTRICAL DATA
DIRECT INTERELECTRODE CAPACITANCES
WITHOUT EXTERNAL SHIELD

GRID TO PLATE
GRID TO CATHODE
PLATE TO CATHODE

1.75 pf
2.95 pf
0.07 pf

HEATER CHARACTERISTICS AND RATINGS
ABSOLUTE MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS
6.0 VOLTS
280 MA.

LIMITS OF APPLIED VOLTAGE
UNDER TRANSMITTING CONDITIONS
UNDER STANDBY CONDITIONS - MAXIMUM
MAXIMUM HEATER-CATHODE VOLTAGE:
HEATER NEGATIVE WITH RESPECT TO CATHODE
HEATER POSITIVE WITH RESPECT TO CATHODE

6.0 ± 0.6 VOLTS
6.3 VOLTS
50 VOLTS
50 VOLTS

AVERAGE STATIC CHARACTERISTICS

PLATE VOLTAGE
PLATE CURRENT
TRANSCONDUCTANCE
AMPLIFICATION FACTOR

200 VOLTS
18.5 MA.
6,800 μMHO
40

CLASS C TELEGRAPHY - RF POWER AMPLIFIER AND OSCILLATOR
MAXIMUM RATINGS - ABSOLUTE MAXIMUM SYSTEM

DC PLATE VOLTAGE
DC GRID VOLTAGE
DC PLATE CURRENT
DC GRID CURRENT
DC CATHODE CURRENT

CCS
330
-100
40
25
55

ICAS
400
-100
55
25
70

VOLTS
VOLTS
MA.
MA.
MA.

CONTINUED ON FOLLOWING PAGE
### CLASS C TELEGRAPHY - RF POWER AMPLIFIER AND OSCILLATOR - cont'd.

**MAXIMUM RATINGS - ABSOLUTE MAXIMUM SYSTEM**

<table>
<thead>
<tr>
<th></th>
<th>CCS</th>
<th>ICAS</th>
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<tbody>
<tr>
<td>PLATE INPUT</td>
<td>13.2</td>
<td>22</td>
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<tr>
<td>PLATE DISSIPATION</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>PLATE SEAL TEMPERATURE</td>
<td>175</td>
<td>175</td>
</tr>
<tr>
<td>FREQUENCY FOR OPERATION AT FULL RATINGS</td>
<td>500</td>
<td>500</td>
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<tr>
<td>ALTITUDE FOR OPERATION AT FULL RATINGS</td>
<td>60,000</td>
<td>60,000</td>
</tr>
<tr>
<td>GRID CIRCUIT RESISTANCE</td>
<td>0.1</td>
<td>0.1</td>
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</tbody>
</table>

**TYPICAL OPERATION AS RF AMPLIFIER WITH CATHODE DRIVE AT 500 MC/S**

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<thead>
<tr>
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<th>CCS</th>
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<tbody>
<tr>
<td>DC PLATE-TO-GRID VOLTAGE</td>
<td>342</td>
<td>395</td>
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<tr>
<td>DC CATHODE-TO-GRID VOLTAGE</td>
<td>42</td>
<td>45</td>
</tr>
<tr>
<td>FROM GRID RESISTOR OR COMBINATION OF GRID RESISTOR WITH FIXED SUPPLY OR CATHODE RESISTOR</td>
<td></td>
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<tr>
<td>DC PLATE CURRENT</td>
<td>35</td>
<td>40 MA,</td>
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<tr>
<td>DC GRID CURRENT</td>
<td>13</td>
<td>15 MA.</td>
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<tr>
<td>DRIVING POWER</td>
<td>2.2</td>
<td>3 WATTS</td>
</tr>
<tr>
<td>USEFUL POWER OUTPUT</td>
<td>7</td>
<td>10 WATTS</td>
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WITH APPROX. 75% OUTPUT CIRCUIT EFFICIENCY

**FREQUENCY MULTIPLIER**

**MAXIMUM RATINGS - ABSOLUTE MAXIMUM SYSTEM**

<table>
<thead>
<tr>
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<th>CCS</th>
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<tbody>
<tr>
<td>DC PLATE VOLTAGE</td>
<td>300</td>
<td>350</td>
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<tr>
<td>DC GRID VOLTAGE</td>
<td>-125</td>
<td>-140</td>
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<tr>
<td>DC PLATE CURRENT</td>
<td>33</td>
<td>45</td>
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<tr>
<td>DC GRID CURRENT</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>DC CATHODE CURRENT</td>
<td>45</td>
<td>55</td>
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<tr>
<td>PLATE INPUT</td>
<td>9.9</td>
<td>15.9</td>
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<tr>
<td>PLATE DISSIPATION</td>
<td>6</td>
<td>9.5</td>
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<tr>
<td>PLATE SEAL TEMPERATURE</td>
<td>175</td>
<td>175</td>
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<tr>
<td>FREQUENCY FOR OPERATION AT FULL RATINGS</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>ALTITUDE FOR OPERATION AT FULL RATINGS</td>
<td>60,000</td>
<td>60,000</td>
</tr>
<tr>
<td>GRID CIRCUIT RESISTANCE</td>
<td>0.1</td>
<td>0.1</td>
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**TYPICAL OPERATION - TRIPLEX TO 510 MC/S**

**CATHODE DRIVE CIRCUIT**

<table>
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<tr>
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<th>CCS</th>
<th>ICAS</th>
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<tbody>
<tr>
<td>DC PLATE-TO-GRID VOLTAGE</td>
<td>410</td>
<td>472</td>
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<tr>
<td>DC CATHODE TO GRID VOLTAGE</td>
<td>110</td>
<td>122</td>
</tr>
<tr>
<td>FROM GRID RESISTOR OR COMBINATION OF GRID RESISTOR WITH FIXED SUPPLY OR CATHODE RESISTOR</td>
<td></td>
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<tr>
<td>DC PLATE CURRENT</td>
<td>26</td>
<td>36.5 MA.</td>
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<tr>
<td>DC GRID CURRENT</td>
<td>4.1</td>
<td>5.8 MA.</td>
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<tr>
<td>DRIVING POWER</td>
<td>2.75</td>
<td>4.5 WATTS</td>
</tr>
<tr>
<td>USEFUL POWER OUTPUT</td>
<td>2.1</td>
<td>3.4 WATTS</td>
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WITH APPROX. 75% OUTPUT CIRCUIT EFFICIENCY

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SPECIAL TESTS AND PERFORMANCE DATA
CONTROLLED ON A SAMPLING BASIS

LOW-PRESSURE VOLTAGE BREAKDOWN TEST
HIGH-FREQUENCY VIBRATION TEST
SEAL FRACTURE
HEATER CYCLING
1 - HOUR STABILITY LIFE PERFORMANCE
50 - HOUR SURVIVAL LIFE PERFORMANCE
500 - HOUR INTERMITTENT LIFE PERFORMANCE

OUTLINE DRAWING

NOTE:
THE STRAIGHT EDGE ON THE PERIMETER OF THE LARGE FIN
(PLATE TERMINAL) IS PARALLEL TO A PLANE THROUGH THE
CENTERS OF THE HEATER PINS AT THEIR SEALS WITHIN 15°.

ALL DIMENSIONS IN INCHES
COOLING REQUIREMENTS

MAXIMUM PLATE - SEAL TEMPERATURE = 175°C
AIR-DUCT OPENING = 1 5/32" X 1 5/32"
WITH AIR-DUCT LOCATED AS SHOWN ON SKETCH