JEDEC TYPE DESIGNATION
REGISTRATION FORM
FOR PULSED MAGNETRONS

Manufacturer's Designation
JEDEC Designation
Manufacturer
BL-230
7444
Bomac Laboratories, Inc.
Beverly, Massachusetts

GENERAL CHARACTERISTICS

The 7444/BL-230 is a pulsed magnetron oscillator tube which operates at a tunable frequency of 5400-5900Mc. The peak power output is approximately 1 kilowatt and the tube is air cooled. The tube uses an integral magnet and is ruggedized for beacon applications.

GENERAL ELECTRICAL DATA

Pre-heat Heater Voltage
Pre-heat Heater Current at 5.0 Volts
Minimum Pre-heat Time
Duty Cycle Equilibrium
\( \Delta F = 5.0 \text{ Mc. max.} \)
5.0 \pm 0.5 \text{ V}
0.65 to 0.80 \text{ A}
30 \text{ sec}
\( \text{Du}=0.002 \text{ to } 0.00005 \)

ABSOLUTE MAXIMUM RATINGS

Heater Voltage
Heater Current
Peak Anode Voltage
Peak Anode Current
Peak Power Input
Duty Cycle
Pulse Duration
Rate of Rise of Anode Voltage
Maximum Altitude Without Pressurization
Output Circuit
Input Terminals
Anode Temperature (See Outline)
VSWR
5.5 \text{ V}
0.80 \text{ A}
2.8 \text{ kv}
1.9 \text{ a}
5.3 \text{ kw}
0.002
1.0 \mu s
18.0 \text{ kv/\mu s}
60,000 \text{ ft}
60,000 \text{ ft}
125^\circ \text{C}
1.5:1

TYPICAL OPERATING RATINGS

Frequency
Peak Anode Voltage
Pulling Figure (VSWR 1.5/1)
Pushing Factor (ib=1.65 to 1.75a)
5400 to 5900 \text{ Mc}
2.6 \text{ kv}
15 \text{ Mc max}
15 \text{ Mc/a max}

from JEDEC release #3266, May 15, 1961
Current Pulse Duration
Duty Factor
Peak Anode Current
Stability (% Missing Pulses)
Peak Power Output
Voltage Pulse Rate-of-Rise
  (between 20 and 85% points)
RF Bandwidth at 1/4 po points
  (Load VSWR = 1.5 min, All phases)
Heater Voltage
Heater Current

**GENERAL MECHANICAL CHARACTERISTICS**

Mounting Position
Mounting Support
Weight
Coupling Between Tube and Load

Shock using High Impact Machine
  (along longitudinal axis)
  (along radial axis)
Constant Acceleration
  (along longitudinal axis)
  (along radial axis)
Vibration
  (55 - 2000 cps, 16G)
Ambient Temperature (operating)
Temperature Coefficient
  (TE = 40°C to 60°C)
Thermal Equilibrium
  (t = 1 hour after 5 min. of continuous operation)
Cooling Data

1.0 μs
0.002
1.7 A
0.25% max
1000 w min
18 kv/μs max
2.5 Mc
5.0 V
0.65 to 0.80 A

Any
Tuner flange or body
Approx. 10 oz
Tube has coaxial output with a 7/16 - 28 NS thread for mating with a TNC plug.

60° hammer angle
30° hammer angle
300G, Δ F = ± 2.5 Mc max.
150G, Δ F = ± 2.5 Mc max.

Δ F = ± 2.5 Mc max.
-60 to +105°C
Δ F/Δ T = 0.10 Mc/°C max.
Δ F = ± 2.5 Mc max.
Air Cooled
Note 1:- Tuning screw.
Note 2:- Tuner lock, allen head set screw (for locking tuning shaft if desired; only necessary under extreme conditions of shock and vibration). 1 Sc. both sides.
Note 3:- Mates with TNC Plug.
Note 4:- #20 strand copper wire, teflon coated.
Note 5:- Temperature of anode shall be measured at point X.
Note 6:- Planes of vibration and shock are identified as planes X₁, X₂, and Y.
Note 7:- Black lead identifies cathode.
Note 8:- Potting material.

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Dimensions in Inches</th>
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<tbody>
<tr>
<td>A**</td>
<td>#6-32NC 3 Holes</td>
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<tr>
<td></td>
<td>.125 min. dp equally</td>
</tr>
<tr>
<td></td>
<td>spaced on 1.062 BC</td>
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<tr>
<td>B**</td>
<td>0.400 ± .025</td>
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<tr>
<td>C**</td>
<td>0.236 ± .010</td>
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<tr>
<td>D**</td>
<td>3/64 x 1/16 slot</td>
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<tr>
<td>E**</td>
<td>#4-40 Hex Set Screw</td>
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<tr>
<td>F**</td>
<td>1.245 ± .015</td>
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<tr>
<td>G**</td>
<td>0.250 Min.</td>
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<tr>
<td>H**</td>
<td>0.535 ± .015</td>
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<tr>
<td>J**</td>
<td>0.863 ± .015</td>
</tr>
<tr>
<td>L</td>
<td>1.737 ± .030</td>
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<tr>
<td>M</td>
<td>3.412 Max.</td>
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<tr>
<td>N**</td>
<td>0.850 Dia.</td>
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<tr>
<td>P</td>
<td>4.000 Min.</td>
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<tr>
<td>Q</td>
<td>1.405 ± .005</td>
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<tr>
<td>R**</td>
<td>7/16-28NS</td>
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<tr>
<td>T**</td>
<td>60° ± 2°</td>
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<tr>
<td>W</td>
<td>45° ± 5°</td>
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