Manufacturer's Designation: BL-604H
JETEC Designation: 6647
Manufacturer: Bomac Laboratories, Inc.
Beverly, Massachusetts

March 18, 1957

GENERAL CHARACTERISTICS

The 6647 is a dual broad-band gas switching tube designed to operate with suitable short-slot hybrid junctions to provide a balanced duplexer using RG-52/U size waveguide. Two heaters and a thermostat permanently attached to the tube allow operation over a wide range of ambient temperature. It is an integral cavity type with fixed tuned gaps. Its operational band is from 8490 to 9578 megacycles.

ELECTRICAL DATA TYPICAL VALUES

Operational Band
- VSWR 1.4 maximum
- VSWR 1.2 maximum

Ignitor Ignition Time (max.)
- 5 sec.

Ignitor Voltage Drop at li=100μAdc (each electrode)
- 200-375 volts

Spike Leakage Energy (max.)
- \( F = 9000\text{Mc}; \, po=40\text{kw}; \, t_p=1.0\mu\text{sec}. \)
- \( t_p=0.5\mu\text{sec}; \, prr=1000 \text{ pps}; \)
- \( li=100\mu\text{A}dc \) on each electrode
- 0.1 ergs

Flat Leakage Power (max.)
- (see Spike Leakage for test conditions)
- 20 mW

Duplexer Loss (max.) \( li=100\mu\text{A}dc \) on each electrode
- from 8490 to 9578Mc.
- from 8565 to 9487Mc.
- 1.2 db
- 1.0 db

Isolation (min.)
- from 8490 to 9578Mc.
- from 8565 to 9487Mc.
- at 9000Mc.
- 14 db
- 16 db
- 18 db

Recovery Time (max.) at 100kw peak 3 db down
- 1.5μs

High Level VSWR (max.)
- \( F = 9000\text{Mc}; \, po=40\text{kw}; \, t_p=1.0\mu\text{sec}; \)
- \( prr=1000\text{ pps}; \, li=100\mu\text{A}dc \)
- 1.2

Heater Voltage (380-1000 cps)
- 115 Vac

Heater Wattage
- 25 W

Thermostat Cut-In Temperature (min.)
- 4°C

Thermostat Cut-Out Temperature (max.)
- 50°C

from JETEC release #1919, May 6, 1957
MECHANICAL DATA-GENERAL

Mounting Position Any
Number of Ignitors Two
Weight, approximately 10 ounces

ABSOLUTE MAXIMUM RATINGS

Transmitter Peak Power 100 kw
Transmitter Average Power 100 W
Ignitor Current (each electrode) 200 μA dc
Thermostat Contact Current 2 A ac

OUTLINE DRAWINGS

Outline as per attached drawing dated 2-24-57.
Mating Flange as per attached drawing dated, 11-10-54.
Notes:
1. The rect. formed by the six mounting holes on each flange, dimensions A and C shall be centered on the flange face to within 1/32".
2. Silver plate 100 MSI or equiv.
3. Rhodium flash over silver plating is optional.
4. Heaters, thermostat and exhaust tube must not extend beyond flange.
5. Clearance must be maintained for socket head screws in flanges.
6. This hole covered by thermostat.

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>#8-32NC-1 6 Holes</td>
</tr>
<tr>
<td>B*</td>
<td>1.085 ±0.003</td>
</tr>
<tr>
<td>C</td>
<td>90°±5°</td>
</tr>
<tr>
<td>D*</td>
<td>1.280 ±0.004</td>
</tr>
<tr>
<td>E</td>
<td>#18(.1695) 6 Holes</td>
</tr>
<tr>
<td>F*</td>
<td>1 3/8 Max.</td>
</tr>
<tr>
<td>G***</td>
<td>0.083 Min.</td>
</tr>
<tr>
<td>H</td>
<td>1.280 ±0.004</td>
</tr>
<tr>
<td>J**</td>
<td>0.250 Dia.</td>
</tr>
<tr>
<td>K</td>
<td>1.555 ±0.010</td>
</tr>
<tr>
<td>L**</td>
<td>0.083 Min.</td>
</tr>
<tr>
<td>N**</td>
<td>2.575 ±0.015</td>
</tr>
<tr>
<td>P**</td>
<td>1/8 Rad.</td>
</tr>
<tr>
<td>Q*</td>
<td>1.085 ±0.003</td>
</tr>
<tr>
<td>R*</td>
<td>18.00 Min.</td>
</tr>
<tr>
<td>Both Leads</td>
<td></td>
</tr>
</tbody>
</table>

SPECIFICATION SHEET
Outline
6647/BL-604H
2-24-57 clr
This outline used for following tubes:-

6796, BL-344, 6648/BL-615. BL-625
BL-355 6647/ BL-604H

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.575 ±.015</td>
</tr>
<tr>
<td>B</td>
<td>#8-32NC Tap</td>
</tr>
<tr>
<td></td>
<td>6 Holes</td>
</tr>
<tr>
<td>C</td>
<td>2.203 ±.005 -.000</td>
</tr>
<tr>
<td>D</td>
<td>0.220 ±.010</td>
</tr>
<tr>
<td>E</td>
<td>3/64 Radius</td>
</tr>
<tr>
<td>F</td>
<td>1.280 ±.004</td>
</tr>
<tr>
<td>G</td>
<td>0.500 ±.003</td>
</tr>
<tr>
<td>H</td>
<td>0.070 ±.001</td>
</tr>
<tr>
<td>J</td>
<td>1.950 ±.004</td>
</tr>
<tr>
<td>K</td>
<td>2.170 ±.006</td>
</tr>
<tr>
<td>L</td>
<td>0.120 Rad. Approx.</td>
</tr>
<tr>
<td>M</td>
<td>0.753 ±.005 -.000</td>
</tr>
<tr>
<td>N</td>
<td>1.625 ±.015</td>
</tr>
</tbody>
</table>
This outline used for following tubes:

BL-78, BL-307, 6599/BL-322, BL-331, BL-655
6796, 6601/BL-327, 6642/BL-600, BL-335,
BL-341, BL-339H, BL-649, BL-651H, BL-686H
6647/BL 604H

SPECIFICATION SHEET
Mating Flange

BOMAC LABORATORIES INC.
SALEM ROAD
BEVERLY, MASSACHUSETTS

11-10-54 clr