

# JETEC TYPE DESIGNATION REGISTRATION FORM

## DUAL TR TUBES

Manufacturer's Designation: BL-60  
JETEC Designation: 6640  
Manufacturer: Bomac Laboratories, Inc.  
Beverly, Massachusetts

March 12, 1957

## GENERAL CHARACTERISTICS

The 6640 is a dual broad-band gas switching tube designed to operate with suitable short-slot hybrid junctions to provide a balanced duplexer using RG49/U size waveguide. It is an integral cavity type. Its operational band is from 5400 to 5900 megacycles per second.

## ELECTRICAL DATA-TYPICAL VALUES

|                                                                                                                                                                          |                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Operational Band                                                                                                                                                         |                     |
| VSWR 1.3 maximum                                                                                                                                                         | 5400 to 5900Mc/sec  |
| VSWR 1.2 maximum                                                                                                                                                         | 5450 to 5850 Mc/sec |
| Ignitor Ignition Time (max.)                                                                                                                                             | 5 sec.              |
| Ignitor Voltage Drop at $I_i=100\mu\text{A dc}$<br>(each electrode)                                                                                                      | 200-400 Vdc.        |
| Spike Leakage Energy (max.)                                                                                                                                              | 0.1 ergs            |
| $F=5650\text{ Mc}$ ; $p_o=70\text{ kw}$ ; $t_{p1}=1.0\mu\text{s}$ ;<br>$t_{p2}=0.5\mu\text{s}$ ; $p_{rr}=1000\text{ pps}$ ;<br>$I_i=100\mu\text{A dc}$ on each electrode |                     |
| Flat Leakage Power (max.)                                                                                                                                                | 10 mw               |
| (See Spike Leakage for test conditions)                                                                                                                                  |                     |
| Duplexer Loss (max.) $I_i=100\mu\text{A dc}$ on each electrode                                                                                                           |                     |
| from 5400 to 5900Mc.                                                                                                                                                     | 1.2 db              |
| from 5450 to 5850Mc.                                                                                                                                                     | 1.0 db              |
| Isolation (min.)                                                                                                                                                         |                     |
| from 5400 to 5900Mc.                                                                                                                                                     | 15 db               |
| from 5450 to 5850Mc.                                                                                                                                                     | 17 db               |
| at 5650Mc.                                                                                                                                                               | 20 db               |
| Recovery Time (max.) at 625 kw peak 3 db down                                                                                                                            | 12 $\mu\text{sec.}$ |
| High Level VSWR (max.)                                                                                                                                                   | 1.2                 |
| $F=5650\text{ Mc}$ ; $p_o=300\text{ kw}$ ; $t_p=1.0\mu\text{s}$ ;<br>$p_{rr}=1000\text{ pps}$ ; $I_i=100\mu\text{A dc}$ on each electrode                                |                     |

### MECHANICAL DATA-GENERAL

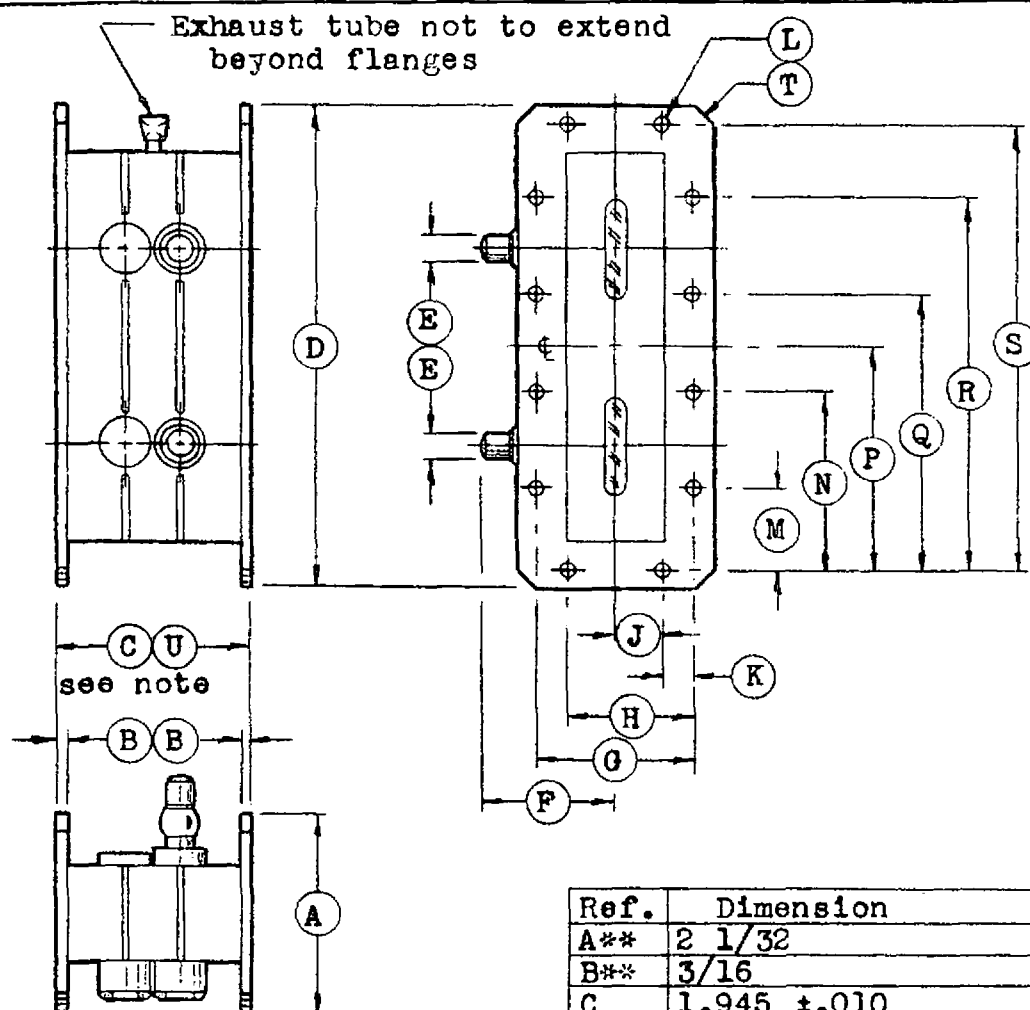
|                       |           |
|-----------------------|-----------|
| Mounting Position     | Any       |
| Number of Electrodes  | Two       |
| Weight, approximately | 1.25 lbs. |

### ABSOLUTE MAXIMUM RATINGS

|                                  |               |
|----------------------------------|---------------|
| Transmitter Peak Power           | 700 kw        |
| Transmitter Average Power        | 700 W         |
| Ignitor Current (each electrode) | 200 $\mu$ Adc |

### OUTLINE DRAWINGS

Outline as per attached drawing dated 4-4-57  
Mating Flange per attached drawing dated 2-1-55



Note:-

Dimension C applies  
to 6640/BL-60 only.

Dimension U applies  
to 6641/BL-86 and  
BL-644 only.

| Ref. | Dimension                  |
|------|----------------------------|
| A**  | 2 1/32                     |
| B**  | 3/16                       |
| C    | 1.945 ±.010                |
| D**  | 5 1/32                     |
| E**  | 0.250 Dia. Nom.            |
| F*   | 1 13/16 Max.               |
| G*   | 1.658 ±.004                |
| H*   | 1.329 ±.004                |
| J*   | 0.500 ±.004                |
| K*   | 0.329 ±.004                |
| L    | #10-32NF 12 Holes Ea. Flg. |
| M*   | 0.829 ±.004                |
| N*   | 1.829 ±.004                |
| P*   | 2.329 ±.004                |
| Q*   | 2.829 ±.004                |
| R*   | 3.829 ±.004                |
| S*   | 4.658 ±.004                |
| T**  | 3/16 x 45° Chamfer         |
| U    | 2.345 ±.015                |

## SPECIFICATION SHEET

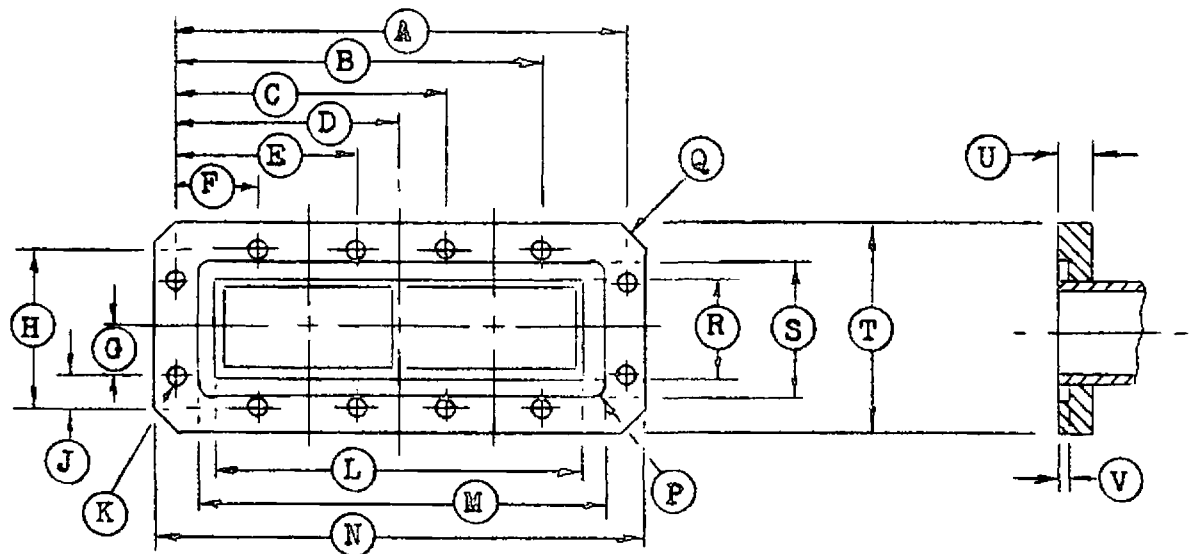
Outline

6640/BL-60, 6641/BL-86, BL-644

BOMAC LABORATORIES INC.  
SALEM ROAD  
BEVERLY, MASSACHUSETTS

4-4-57

clr



| Ref. | Dimension        | Ref. | Dimension         |
|------|------------------|------|-------------------|
| A    | 4.658 $\pm$ .002 | L    | 4.000 $\pm$ .005  |
| B    | 3.829 $\pm$ .002 | M    | 4.375 $\pm$ .005  |
| C    | 2.829 $\pm$ .002 | N    | 5 1/32            |
| D    | 2.329 $\pm$ .003 | P    | 3/32 Rad.         |
| E    | 1.829 $\pm$ .002 | Q    | 3/16 x 45 Chamfer |
| F    | 0.829 $\pm$ .002 | R    | 1.000 $\pm$ .005  |
| G    | 0.500 $\pm$ .003 | S    | 1.375 $\pm$ .005  |
| H    | 1.658 $\pm$ .002 | T    | 2 1/32            |
| J    | 0.329 $\pm$ .003 | U    | 0.350 Min.        |
| K    | 13/64 (.203) Dr. | V    | 0.110 $\pm$ .002  |
|      | 12 Holes         |      |                   |

Note:- Outline used for following tubes

6640/BL-60, 6641/BL-86, BL-336

BL-352, 6905/BL-613, BL-644

GS-2E-1.10.20.01

|  |                            |                                                                 |
|--|----------------------------|-----------------------------------------------------------------|
|  | <b>SPECIFICATION SHEET</b> | BOMAC LABORATORIES INC.<br>SALEM ROAD<br>BEVERLY, MASSACHUSETTS |
|  | Mating Flange<br>See Note  |                                                                 |
|  |                            | 2-1-55 clr                                                      |