JETEC TYPE DESIGNATION REGISTRATION FORM

SHUTTER AND TR TUBES

Manufacturer's Designation: BL-309
JETEC Designation: 6592
Manufacturer: Bomac Laboratories, Inc.
Beverly, Massachusetts

December 12, 1956

GENERAL CHARACTERISTICS

The 6592 is a combined broad-band TR tube and shutter for use in C-Band. The shutter mechanism, when closed, insures protection for the receiver crystal from nearby transmitters when the radar set is not in use. When the shutters are open, the TR tube functions normally and provides decoupling of the receiver from a common transmitting and receiving antenna during a period of transmission. It is an integral cavity type. Its operational band is from 5200 to 5530 megacycles per second.

ELECTRICAL DATA - TYPICAL VALUES

**TR Tube** (with shutters open)

**Operational Band**
- VSWR 1.9 max.
- VSWR 1.4 max.

**Ignitor Ignition Time (max.)**
- 5 sec.

**Ignitor Voltage Drop at li = 100 mAdc**
- 200 to 400 Vdc.

**Spike Leakage Energy (max.)**
- F = 5365 Mc; po = 70 kw;
- $t_{p1} = 1.0 \text{ us}$; $t_{p2} = 0.5 \text{ us}$;
- prr = 1000 pps; li = 100 uAdc.
- 0.3 erg.

**Flat Leakage Power (max.)**
- 70 mw.

(See Spike Leakage for test conditions)

**Insertion Loss (max.) at 5365 Mc. and li = 0**
- 0.8 db

**Ignitor Interaction (max.) at li = 100 uAdc**
- 0.2 db

**Recovery Time (max.) at 1000 kw peak, 3 db down**
- 9.0 us.

**Position of Short**
- 0.070 to 0.100 inches

(Measured from face of input flange of tube. Short is further from the magnetron.)

**Shutter Tube**

**Attenuation (shutters closed)**
- 5200 to 5530 Mc.
- 40 db.

**Shutter Circuit Voltage**
- 28 Vdc.

**Shutter Circuit Pull-In Current (min.)**
- 110 mAdc.

**Shutter Circuit Holding Current (min.)**
- 60 mAdc.

from JETEC release #1873, March 18, 1957
MECHANICAL DATA - GENERAL

Mounting Position  Any
Weight, approximately  1-1/2 lbs.

ABSOLUTE MAXIMUM RATINGS

Transmitter Peak Power (TR Tube) (Note 1)  1000 kw.
Transmitter Average Power  1000 W
Igniter Current  200 uA dc
Shutter Holding Current  160 mA dc

OUTLINE DRAWING

As per attached drawing dated 12-5 -56

Note 1: The shutters are not intended for applications involving switching of peak power greater than one kilowatt. Therefore, the rating applies only when the shutters are either open or closed.
Input Flange

Output Flange

Note:
Exhaust tube not to extend beyond flange.

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.345 ±.015</td>
</tr>
<tr>
<td>B</td>
<td>0.250 ±.015</td>
</tr>
<tr>
<td>C</td>
<td>3.625 ±.015 Dia.</td>
</tr>
<tr>
<td>D*</td>
<td>3.250 ±.005 Dia.</td>
</tr>
<tr>
<td>E</td>
<td>0.221 Drill</td>
</tr>
<tr>
<td>F*</td>
<td>0.250 ±.005 Dia.</td>
</tr>
<tr>
<td>G</td>
<td>1.375 Max.</td>
</tr>
<tr>
<td>H</td>
<td>2.250 Max.</td>
</tr>
<tr>
<td>J</td>
<td>1.250 Max.</td>
</tr>
<tr>
<td>K</td>
<td>1.750 Max.</td>
</tr>
</tbody>
</table>