JETEC TYPE DESIGNATION REGISTRATION FORM

SHUTTER AND TR TUBES

Manufacturer's Designation: BL-317
JETEC Designation: 6596
Manufacturer: Bomac Laboratories, Inc.
Beverly, Massachusetts

DECEMBER 18, 1956

GENERAL CHARACTERISTICS

The 6596 is a combined shutter and broad-band dual TR tube designed to operate with suitable short-slot hybrid junctions to provide a balanced duplexer using RG-52/u size waveguide. The shutter mechanism, when closed, insures protection for the receiver crystal from nearby transmitters when the radar set is not in use. When the shutter is open, the TR tube functions in a normal manner. It is an integral cavity type with fixed tuned gaps. Its operational band is from 8490 to 9578 megacycles per second.

ELECTRICAL DATA-TYPICAL VALUES

TR Tube (With shutter open)
Operational Band
- VSWR 1.4 max.
- VSWR 1.2 max.
Ignitor Ignition Time (max.)
Ignitor Voltage Drop. at Ii=100 µAdc
Spike Leakage Energy (max.)
-F=9000 Mc; po=40 kw;
tpl=1.0 µs; tp2=0.5 µs;
prr=1000 pps; li=100 µAdc on each
Flat Leakage Power
(See Spike Leakage Energy for test conditions)
Duplexer Loss. (max.) at li=100 µAdc
- From 8490 to 9578 Mc/s
- From 8565 to 9487 Mc/s
Isolation (min) (Magneton to receiver)
- From 8490 to 9578 Mc/s
- From 8565 to 9487 Mc/s
- At 9000 Mc/s
Recovery Time (max.) at 200 kw; 3db down
High Level VSWR (max.)
-F=9000 Mc; po=40 kw

Shutter Tube
Duplexer Loss (min) with shutters closed
(From 8490 to 9578 Mc/s)
Shutter Circuit Voltage (nom.)

from JETEC release #1859, March 4, 1957
Shutter Tube (Cont.)

Shutter Circuit Pull-In Current (min.) 220 mA
Shutter Circuit Holding Current (min.) 110 mA

MECHANICAL DATE-GENERAL

Mounting Position Any
Weight approximately 10 oz.

ABSOLUTE MAXIMUM RATINGS

Transmitter Peak Power (TR Tube) (Note 1) 250 kW
Transmitter Average Power 250 W
Ignitor Current (each electrode) 200 μA
Shutter Circuit Holding Current 320 mA

OUTLINE DRAWING

As per attached drawing dated 1/5/55.

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.
Exhaust tube must not extend beyond flanges more than 1/4".

Terminal Connections

| Input Flange | Output Flange |

<table>
<thead>
<tr>
<th><strong>Reference</strong></th>
<th><strong>Dimension</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.500 ± 0.10</td>
</tr>
<tr>
<td>B</td>
<td>0.293 ± 0.10</td>
</tr>
<tr>
<td>C</td>
<td>1 3/8 max.</td>
</tr>
<tr>
<td>D</td>
<td>1 in.</td>
</tr>
<tr>
<td>E</td>
<td>1 1/4</td>
</tr>
<tr>
<td>F</td>
<td>2 1/2</td>
</tr>
<tr>
<td>G</td>
<td>1 1/16</td>
</tr>
<tr>
<td>H</td>
<td>0.640 ± 0.02</td>
</tr>
<tr>
<td>J</td>
<td>0.812 ± 0.07</td>
</tr>
<tr>
<td>K</td>
<td>1.625 ± 0.15</td>
</tr>
<tr>
<td>L</td>
<td>1.085 ± 0.03</td>
</tr>
<tr>
<td>M</td>
<td>1.2875 ± 0.07</td>
</tr>
<tr>
<td>N</td>
<td>2.575 ± 0.15</td>
</tr>
<tr>
<td>Q</td>
<td>#8-32 UNC 6 Holes Each Flange</td>
</tr>
</tbody>
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**SPECIFICATION SHEET**

| Outline | 6596/BL-317 |

BOMAC LABORATORIES INC
SALEM ROAD
BEVERLY, MASSACHUSETTS

1-5-55 clr