GENERAL CHARACTERISTICS

The 6599 is a combined shutter and dual broad-band TR tube (type 6334) 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 of the receiver crystal from nearby transmitters when the radar set is not in use. When the shutter is open, the duplexer 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 with fixed tuned gaps. Its operational band is from 8490 to 9578 Mc.

ELECTRICAL DATA - TYPICAL VALUES

TR Tube (with shutters open)

**Operational Band**
- VSWR 1.4 maximum
- VSWR 1.2 maximum

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

**Ignitor Voltage Drop at I_l=100 μ A dc (each electrode)**
- 200-375 volts

**Spike Leakage Energy (max.)**
- F=9000 Mc; po=40 kw, τp1=1 μs;
- τp2=0.5 μs; prr=1000 pps.
- I_l=100 μ A dc on each electrode
- 0.1 ergs

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

**Duplexer Loss (max.) I_l=100 μ A dc (each electrode)**
- from 8490 to 9578 Mc.
- 1.2 db
- from 8565 to 9487 Mc.
- 1.0 db

**Isolation (min.) from 8490 to 9578 Mc.**
- 15 db

**Isolation (min.) from 8565 to 9487 Mc.**
- 18 db

**Isolation (min.) at 9000 Mc.**
- 20 db

**Recovery Time (max.) at 200 kw peak 3 db down**
- 7.0 μs

**High Level VSWR (max.)**
- F=9000 Mc; po=40kw; τp1=1.0 μs;
- prr=1000 pps; I_l=100 μ A dc (each electrode)
- 1.2

from JETEC release #1897, April 15, 1957
Shutter Tube

Attenuation (min.) from 8490 to 9578 Mc. (shutters closed) 40 db.
Shutter Circuit Voltage (nom.) 6 V (ac-dc)
Shutter Circuit Pull-In Current (min.) 900 m A dc
  980 m A ac
Shutter Circuit Holding Current (min.) 440 m A dc
  980 m A ac

MECHANICAL DATA - GENERAL

Mounting Position any
Number of Ignitors Two
Weight approximately 14 ozs.

ABSOLUTE MAXIMUM RATINGS

Transmitter Peak Power (Note 1) 250 kw
Transmitter Average Power 250 W
Ignitor Current (each electrode) 200 μ A dc

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

OUTLINE DRAWING

Outline as per attached drawing dated 6-15-56.
Mating Flange as per attached drawing dated 11-10-54
Exhaust tube must not extend beyond flanges more than 1/4". May be on either side.
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-339, BL-649, BL-651H, BL-686H

**SPECIFICATION SHEET**

**Mating Flange**

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**Ref. Dimension**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Dimension</th>
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<tbody>
<tr>
<td>A</td>
<td>2.575 ± 0.015</td>
</tr>
<tr>
<td>B</td>
<td>#18 (.1695) Tr.</td>
</tr>
<tr>
<td>C</td>
<td>2.203 ± 0.005 ± 0.000</td>
</tr>
<tr>
<td>D</td>
<td>0.220 ± 0.010</td>
</tr>
<tr>
<td>E</td>
<td>3/64 Rad.</td>
</tr>
<tr>
<td>F</td>
<td>1.290 ± 0.004</td>
</tr>
<tr>
<td>G</td>
<td>0.500 ± 0.003</td>
</tr>
<tr>
<td>H</td>
<td>0.070 ± 0.001</td>
</tr>
<tr>
<td>J</td>
<td>1.950 ± 0.004</td>
</tr>
<tr>
<td>K</td>
<td>2.170 ± 0.006</td>
</tr>
<tr>
<td>L</td>
<td>0.120 Rad. Approx.</td>
</tr>
<tr>
<td>M</td>
<td>0.753 ± 0.005 ± 0.000</td>
</tr>
<tr>
<td>N</td>
<td>1.625 ± 0.015</td>
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