JETEC TYPE DESIGNATION REGISTRATION FORM

DUAL TR AND SHUTTER TUBE

Manufacturer's Designation: BL-348
JETEC Designation: 6904
Manufacturer: Bomac Laboratories, Inc.
Beverly, Massachusetts

April 22, 1957

GENERAL CHARACTERISTICS

The 6904 is a combined shutter and dual broad-band TR tube designed to operate with suitable short-slot hybrid junctions to provide a balanced duplexer using RG 52/U size waveguide. The shutter, 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 at 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 megacycles.

ELECTRICAL DATA-TYPICAL VALUES

Operational Band
VSWR 1.4 maximum
VSWR 1.2 maximum 8490 to 9578 Mc/sec.
8565 to 9487 Mc/sec.

Ignitor Ignition Time (each electrode) (max.) 5 sec.
Ignitor Voltage Drop at; II=100 μAdc
each electrode measured separately 200-375 Volts

Spike Leakage Energy (max.) 0.1 ergs
F=9000 Mc; po=40 kw; tpl=1.0 μs;
tp2=0.5 μs; prr=1000 pps;
II=100 μAdc on each electrode

Flat Leakage Power (max.) 20 mw
(See Spike Leakage for test conditions)

Duplexer Loss (max.) ; II=100 μAdc on 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.
from 8565 to 9487 Mc. 18 db.
at 9000 Mc. 20 db.

Recovery Time (max.) at 200 kw peak 3 db down 7.0 μsec.

High Level VSWR (max.) 1.2
F=9000 Mc; po=40 kw; tp=1.0 μsec;
prr=1000 pps; II=100 μAdc each electrode

from JETEC release #1949, June 17, 1957
Shutter Tube

Attenuation 8490 to 9578 Mc. (shutter closed)(min.) 40 db.
Shutter Circuit Voltage (nom.) 28 Vdc.
Shutter Circuit Pull-In Current (min.) 220 mA
Shutter Circuit Holding Current (min.) 110 mA

MECHANICAL DATA - GENERAL

Mounting Position Any
Number of Electrodes Two
Weight, approximately 12 ozs.

ABSOLUTE MAXIMUM RATINGS

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

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 shutter is open or closed.

OUTLINE DRAWINGS

Outline as per attached drawing dated 9-12-56
Mating Flange as per attached drawing dated 5-28-56
Exhaust tube must not extend beyond flanges more than 1/4". May be on either side.

<table>
<thead>
<tr>
<th>Ref. Dimension</th>
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<tbody>
<tr>
<td>A** 2.575 ± .015</td>
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<tr>
<td>B+ 1.085 ± .003</td>
</tr>
<tr>
<td>C #8-32NC</td>
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<tr>
<td>G** 0.172 ± .010</td>
</tr>
<tr>
<td>H** 1.500 Max.</td>
</tr>
<tr>
<td>J 1.555 ± .010</td>
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<tr>
<td>L** 2.125 Max.</td>
</tr>
<tr>
<td>M** 1.500 Max.</td>
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<tr>
<td>N** 0.437 Max.</td>
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<tr>
<td>P** 0.250 Nom.</td>
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<tr>
<td>Q** 1.375 Max.</td>
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Ref. | Dimensions  
---|------------  
A  | 2.575±0.015  
B  | #18 (.1695) Dr., (4) Holes  
C  | 2.203±0.005-0.000  
D  | .220±.010  
E  | 1.280±.004  
F  | .500±.003  
G  | .070±.001  
H  | 1.950±.004  
J  | 2.170±.006  
K  | 0.120 Rad. Approx.  
L  | .753±.005-0.000  
M  | 1.625±.015  
N  | 3/64 Rad.