



## T.R. CELL

A broad band T.R. for operation in the frequency range 9180 Mc/s. to 10,000 Mc/s. May be used in branched duplexer or balanced duplexer systems. Specially developed for high reliability and long life.

## PHYSICAL DATA.

|                         |     |                               |
|-------------------------|-----|-------------------------------|
| Dimensions              | ... | See outline drawing overleaf. |
| Waveguide               | ... | W.G.16 (0.4" x 0.9").         |
| Primer Terminals        | ... | CTI.                          |
| Mounting Position       | ... | Any.                          |
| Max. Waveguide Pressure | ... | 30 lbs./Sq. in.               |

FREQUENCY RANGE ... 9180 to 10,000 Mc/s.

## RATINGS.

|                                           |     |                |
|-------------------------------------------|-----|----------------|
| Max. Transmitter Line Power               | ... | 200 kW.        |
| Min. Transmitter Line Power               | ... | 4 kW.          |
| *Max. Primer Supply Voltage (Main & Aux.) | ... | 1500 volts.    |
| *Min Primer Supply Voltage (Main & Aux.)  | ... | 950 volts.     |
| †Max. Main Primer Current                 | ... | 185 $\mu$ A.   |
| †Min. Main Primer Current                 | ... | 100 $\mu$ A.   |
| †Max. Aux. Primer Current                 | ... | 80 $\mu$ A.    |
| †Min. Aux. Primer Current                 | ... | 50 $\mu$ A.    |
| Ambient Temperature Range (Storage)       | ... | -40 to +100°C. |

## CHARACTERISTICS.

|                              |         |                       |
|------------------------------|---------|-----------------------|
| Low Power Level.             | Average | Limit.                |
| V.S.W.R. (9400-9800 Mc/s.)   | 1.14    | 1.2                   |
| V.S.W.R. (9100-10,000 Mc/s.) | 1.2     | 1.3                   |
| ‡Insertion Loss              | 0.5     | 0.8 dB.               |
| High Power Level.            |         |                       |
| Leakage at 200 kW. Peak:-    |         |                       |
| Total Leakage Power          | 45      | 100 mW.               |
| Spike Leakage Energy         | 0.16    | 0.3 ergs/pulse.       |
| Primer Breakdown Power       | 150     | 250 mW.               |
| Recovery Time (to -6dB Loss) | 1       | 3 $\mu$ Sec           |
| Arc Loss (at 4 kW.)          | ...     | 0.8 dB.               |
| §Position of Min. V.S.W.     | 0.020   | 0.014 to 0.028 inches |
| Primer Characteristics.      |         |                       |
| Primer Operating Voltage     | 210     | 180 to 280 volts.     |

## OPERATING NOTES.

- (1) For operation at a line power above 50 kW. a pre T.R. cell is recommended.
- (2) A balanced mixer should be used wherever possible.
- (3) To ensure rapid primer breakdown, the primer electrodes should be supplied from a negative voltage of at least 1,000 volts D.C.
- (4) Suitable resistors should be connected in series with the electrodes to limit the current to between 100 and 185 microamperes for the main primer electrode and between 50 and 80 microamperes for the aux. primer. At least 1 megohm should be connected directly to each primer electrode terminal to prevent relaxation oscillations at the "keep alive".
- (5) The maximum difference in electrical length between cells is 40 degrees.

\*See "Operating Notes" (3).

†See "Operating Notes" (4).

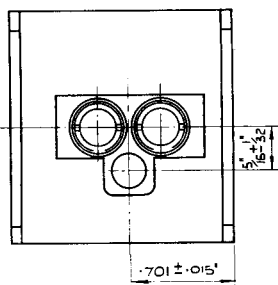
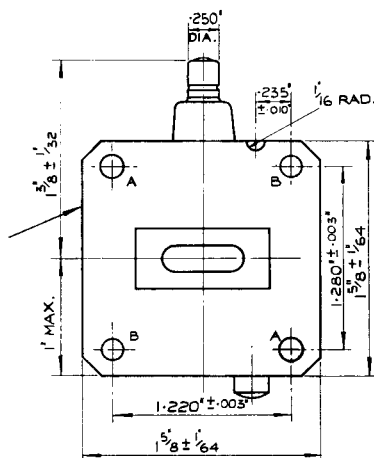
‡With primer energised.

§Measured from input flange face.



Technical drawing of a dual-channel valve assembly. The drawing shows a cross-section of the valve body with two main channels, labeled "MAIN" and "AUX.". The valve is mounted on a base with an "INPUT FLANGE". Dimensions are provided in inches:

- Top width:  $59 \pm \frac{1}{64}$  and  $64 \pm \frac{1}{32}$
- Channel width:  $.440 \pm .015$
- Bottom width:  $1.555 \pm .002$
- Bottom diameter:  $.250 \pm .002$  DIA.



The 4 holes positioned as shown  
are on  $1.768" \pm .004"$  P.C.D.