T.R. CELL

Ferranti

A broad band T.R. self-operating in the frequency range 8490 Mc/s. to 9578 Mc/s. May be used in branched duplexer or balanced duplexer systems.

It is equivalent to the American type 1B63A.

PHYSICAL DATA.

Dimensions ... See outline drawing overleaf.
Waveguide ... W.G.16 (0.4” x 0.9”).
Mounting Position ... Any.
Max. Waveguide Pressure 30 lbs./Sq. in.

FREQUENCY RANGE ... 8490 to 9578 Mc/s.

RATINGS.

Max. Transmitter Line Power ... 200 kW.
Min. Transmitter Line Power ... 4 kW.
*Max. Primer Supply Voltage ... -1500 volts.
*Min. Primer Supply Voltage ... -650 volts.
Mac. Primer Current ... 180 µA.
Min. Primer Current ... 100 µA.
Ambient Temperature Range (Storage) ... -40 to +100 °C.

‡CHARACTERISTICS.

Low Power Level.
V.S.W.R. (8565-9487 Mc/s.) ... 1.4
V.S.W.R. (8490-9578 Mc/s.) ... 1.9
Insertion Loss ... 0.9 dB.

High Power Level.
Leakage at 200 kW, peak:
Total Leakage Power ... 70 mW.
Spice Leakage Energy ... 0.2 ergs/pulse
Primer Breakdown Power ... 250 mW.
Recovery Time (to -6dB. loss) ... 4 µsec.
Arc Loss (at 4 kW.) ... 0.8 dB.
**Position of Min. V.S.W. 0.058° to 0.072°

Primer Characteristics.
Primer Operating Voltage ... 200 to 375 volts.

OPERATING NOTES.

1. For operation at a line power above 50 kW, a pre T.R. cell is recommended.
2. To ensure rapid primer breakdown, the electrode should be supplied from a negative voltage of 1000 volts D.C.
3. A suitable resistor should be connected in series with the electrode to limit the current to between 100 and 180 microamperes. At least 1 megohm should be connected directly to the primer electrode terminal to prevent relaxation oscillations at the "keep alive".
4. A balanced mixer should be used wherever possible.

*See "Operating Notes" (above) Note (2).
‡See "Operating Notes" (above) Note (3).
‡The figures quoted are "limit" figures.
§With primer energised.
**Measured from input flange face.