Ferranti

T.R. CELL

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″ × 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.
†Max. 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.
Spike 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.

Ferranti

Issue 2,
Nov. 1959

Ferranti

WF45