

Millimeter Wave

"M" Type CARCINOTRON[®] CM-08X

**BACKWARD WAVE
OSCILLATOR
8mm range
31-37 Gc/s**



- VERY HIGH C.W. POWER OUTPUT
- HIGH EFFICIENCY
- WIDE ELECTRONIC TUNING BAND
31-37 Gc/s

AMERICAN RADIO Co., Inc.

A SUBSIDIARY OF

445 Park Avenue New York, 22, N.Y.

PLaza 3-5046



**Compagnie générale
de télégraphie Sans Fil**

Paris, France



GENERAL INFORMATION

- The model CM-08X is a new member of the family of world famous "M" type backward wave oscillators — (Carcinotron®) — produced by CSF-Compagnie générale de télégraphie Sans Fil, of Paris, France. It is distributed in the United States by American Radio Company, Inc.

- Recently developed, this 8mm Carcinotron is conveniently packaged in an integral permanent magnet creating the focusing field.

- As in other M type Carcinotrons, the CM-08X can be frequency modulated over its entire band by changing the cathode to delay line voltage. Amplitude modulation is achieved by modulating the anode A1 (accelerator) voltage.

- The tube is liquid cooled. It can deliver a minimum of 15 watts c.w. over a 31 to 37 Gc/s band. Typical power of 20 to 30 watts are achieved at certain points in the band with a maximum cathode to delay line A2 voltage of 3500 volts. The tube operates on a low voltage power supply in spite of the extremely high power delivered.

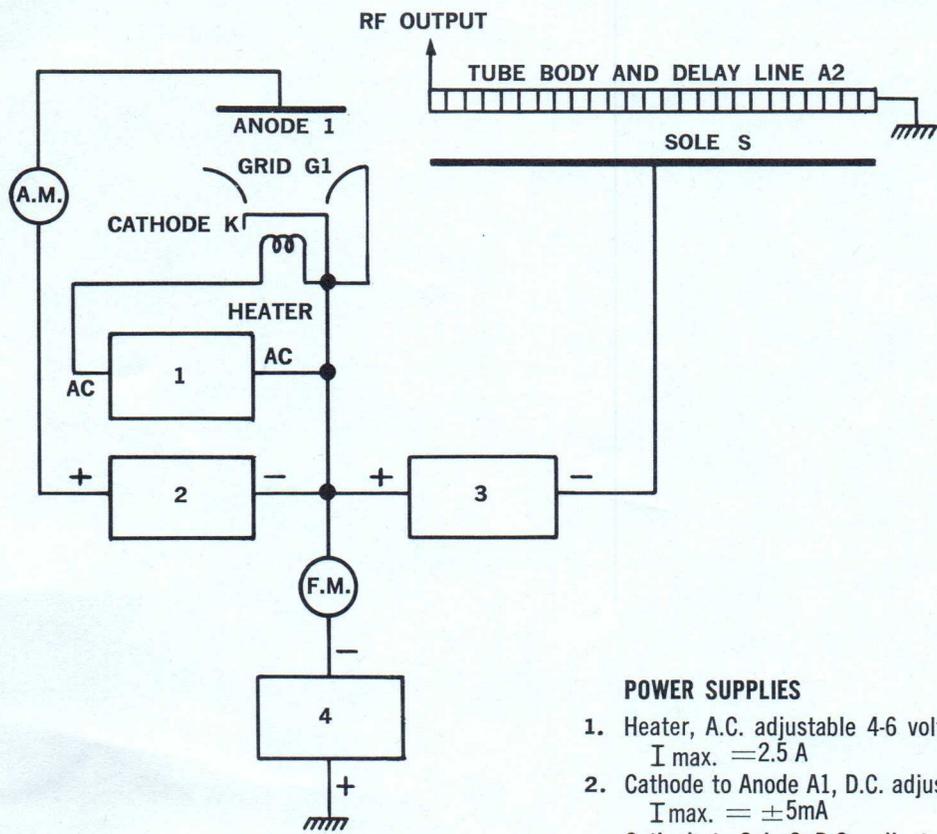
PERFORMANCE CHARACTERISTICS

	Minimum	Typical	Maximum
Frequency range (Gc/s).....	31	—	37
Heater F voltage (V).....	4	5	6
Heater F current (A).....	1.6	2.1	2.4
Cathode K to anode A1 voltage (V).....	0	1,200	1,800
Anode A1 current (mA).....	—	—	2
Cathode K to delay line A2 voltage (V).....	1,000	—	3,500
Line A2 current (mA).....	—	—	250
Cathode K to sole S voltage (V).....	-1,000	—	-2,000
Sole S current (mA).....	-2	—	+2
Cathode to grid voltage* (V).....	0	—	0
c.w. R.F. output power (W).....	15	20	40
Frequency vs. A2 voltage variation (Mc/s per volt).....	—	4	—
V.S.W.R. presented by the load.....	—	—	1.5:1

*The grid is internally connected to the cathode.



TYPICAL CIRCUIT DIAGRAM



NOTE:
The grid G1
is internally connected
to the cathode.

POWER SUPPLIES

1. Heater, A.C. adjustable 4-6 volt, (5kV insulation),
I max. = 2.5 A
2. Cathode to Anode A1, D.C. adjustable 0-1800 volts, (5kV insulation),
I max. = ±5mA
3. Cathode to Sole S, D.C., adjustable 1000-2000 volt, (5kV insulation),
I max. = ±5mA
4. Cathode to Line A2, D.C. adjustable 1000-3500 volt, (5kV insulation),
I max. = 250 mA

POSSIBLE SOURCES OF MODULATION

A.M. for Amplitude modulation
F.M. for frequency modulation

MECHANICAL DATA

Focus	by permanent magnet
Cooling	by liquid. Max. pressure: 45 psi
Approximate weight (lbs.) (incl. magnet).....	18
Max. dimensions (inches).....	O.D.: 7.71"; height: 8.66"
R.F. output connector.....	waveguide: RG 96/U flange: UG - 381/U

