

Beam Power Tube

Cermolox
Ruggedized

Forced-Air Cooled
Full Input to 400 MHz

ELECTRICAL

Heater-Cathode:

Type Unipotential, Oxide Coated, Matrix Type

Voltage ^a (AC or DC)	$\left\{ \begin{array}{ll} 5.5 \text{ typ.} & \text{V} \\ 5.8 \text{ max.} & \text{V} \end{array} \right.$

Current (@ 5.5 V) 17.3 A

Minimum heating time 180 s

Mu Factor^b 6.5
(Grid No.1 to Grid No.2)

Direct Interelectrode Capacitances:

Grid No.1 to plate^c 0.14 pF

Grid No.1 to Cathode-Heater 38 pF

Plate to Cathode-Heater^c 0.02 pF

Grid No.1 to Grid No.2 52 pF

Grid No.2 to Plate 13 pF

Grid No.2 to Cathode-Heater^c 1.4 pF

MECHANICAL

Operating Position Any

Maximum Length (98.0 mm) 3.86 in

Greatest Diameter (94.7 mm) 3.73 in

Terminal Connection See Dimensional Outline

Radiator Integral part of tube

Weight (Approx.) (0.9 kg) 2 lb

Sockets may be obtained from:

Erie Technological Products, Inc.

644 West 12th Street, Erie, PA 16512

Jettron Products Incorporated

56 Route 10, Hanover, NJ 07936

THERMAL

Ceramic-Metal Interface Temperature^d 250 max. °C
(Plate, grid No.1, grid No.2,
cathode-heater, and heater)

Plate Core Temperature^d 250 max. °C

LINEAR RF POWER AMPLIFIER^e AM TELEPHONY SERVICE, CLASS AB

Carrier conditions for use with a maximum modulation factor of 1.0

Maximum CCS Ratings, *Absolute-Maximum Values*:

DC Plate Voltage ^f	3500	max.	V
DC Grid-No.2 Voltage ^g	1000	max.	V
DC Grid-No.1 Voltage ^h	-300	max.	V
DC Plate Current	700	max.	mA
Grid-No.2 Input	50	max.	W
Plate Dissipation	1500	max.	W

Calculated CCS Operation as a Class AB₁ Amplifier:

In a cathode-drive circuit at 400 MHz with an output circuit bandwidth of 4.5 MHz^j.

DC Plate Voltage	2600	V
DC Grid-No.2 Voltage	550	V
DC Grid-No.1 Voltage ^k	-75	V
DC Plate Current	490	mA
DC Grid-No.2 Current	-15	mA
DC Grid-No.1 Current	0	mA
Drive Power (Approx.)	18	W
Output Circuit Eff. (Approx.)	90	%
Useful Power Output	280	W

RF POWER AMPLIFIER & OSCILLATOR—CLASS C TELEGRAPHY^e AND

RF POWER AMPLIFIER — CLASS C FM TELEPHONY^e

Maximum CCS Ratings, *Absolute-Maximum Values*:

	up to 400 MHz		
DC Plate Voltage ^f	3500	max.	V
DC Grid-No.2 Voltage ^g	1000	max.	V
DC Grid-No.1 Voltage ^h	-300	max.	V
DC Plate Current	1.25	max.	A
DC Grid-No.1 Current	0.2	max.	A
Grid-No.2 Input ^g	50	max.	W
Plate Dissipation	1500	max.	W

Maximum Circuit Values:

Grid-No.1-Circuit Resistance	5000	max.	Ω
Grid-No.2-Circuit Impedance	See note g		
Plate-Circuit Impedance	See note f		

Calculated CCS Operation:

In a cathode-drive circuit at 400 MHz with an output circuit bandwidth of 4.4 MHz^l.

DC Plate Voltage	2600	V
DC Grid-No.2 Voltage	550	V
DC Grid-No.1 Voltage ^m	-85	V
DC Plate Current	900	mA
DC Grid-No.2 Current	-10	mA
DC Grid-No.1 Current	5	mA
Drive Power (Approx.)	70	W
Output Circuit Eff. (Approx.)	90	%
Useful Power Output	1160	W

b For: plate voltage = 2500 V

grid No.2 voltage = 600 V

plate current = 600 mA

c With special shield adapter.

d See Dimensional Outline for temperature measurement points.

j Computed between half-power points using two times tube capacity.

k Adjust for zero-signal DC plate current of 0.2 A.

m Adjust for zero-signal DC plate current of 0.1 A.

The following footnotes apply to the RCA *Transmitting Tube Operating Considerations* given at the front of this section.

a See *Electrical Considerations* — Filament or Heater.

e See *Classes of Service*

f See *Electrical Considerations* — Plate Voltage Supply

g See *Electrical Considerations* — Grid No. 2 Voltage Supply

h See *Electrical Considerations* — Grid No. 1 Voltage Supply

OUTLINE TABULATED DIMENSIONS*

Dimensions	Value	
	Inches	Millimeters
A Dia.	3.70 $\pm$.03	93.98 $\pm$.76
B Dia.	3.210 min.	81.54 min.
C Dia.	3.010 min.	76.45 min.
D Dia.	2.307 min.	58.60 min.
E Dia.	1.700 min.	43.18 min.
F Dia.	0.725 max.	18.41 max.
G	3.76 $\pm$.10	95.5 $\pm$ 2.5
H	3.30 $\pm$.10	83.8 $\pm$ 2.5
J	1.65 $\pm$.03	41.91 $\pm$.76
M	0.200 $\pm$.025	5.08 $\pm$.64
N	0.37 $\pm$.03	9.40 $\pm$.76
P	0.46 $\pm$.03	11.68 $\pm$.76
R	0.250 min.	6.35 min.
S	0.105 min.	2.67 min.
T	0.200 min.	5.08 min.
U	0.620 min.	15.75 min.
V	2.71 $\pm$.10	68.8 $\pm$ 2.5

OUTLINE NOTES

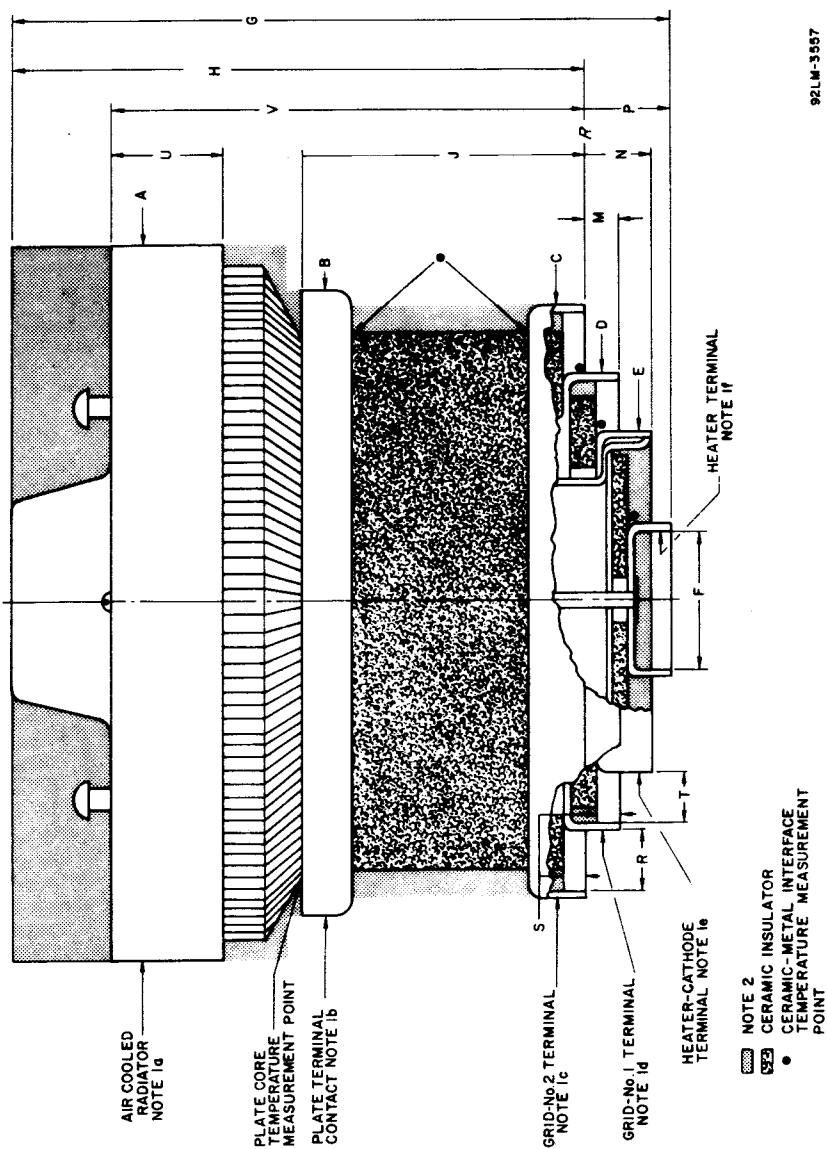
Note 1: The contact distance* indicated is the minimum uniform length as measured from the edge of the terminal.

Terminal	Dimensional Value	
	Inches	Millimeters
1.a Radiator	0.620	15.75
1.b Plate	0.220	5.59
1.c Grid No.2	0.220	5.59
1.d Grid No.1	0.175	4.45
1.e Heater-Cathode	0.115	2.92
1.f Heater	0.135	3.43

Note 2: Keep all stippled regions clear. In general do not allow contacts to protrude into these annular regions. If special connectors are required which may intrude on these regions, contact RCA Power Tube Application Engineering, Lancaster, PA, for guidance.

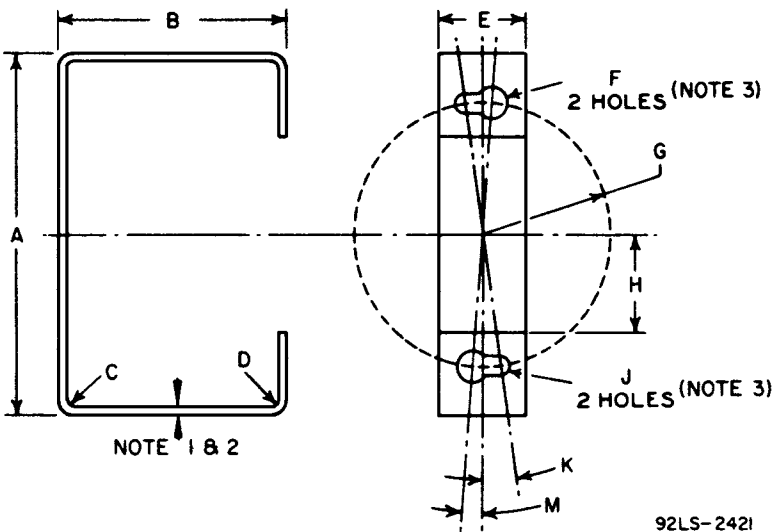
*Basic dimensions are in inches unless otherwise specified. Metric dimensions are derived from the basic inch dimensions (One inch = 25.4 mm).

DIMENSIONAL OUTLINE



92LM-3957

TUBE EXTRACTOR – SUGGESTED DESIGN



TABULATED DIMENSIONS*

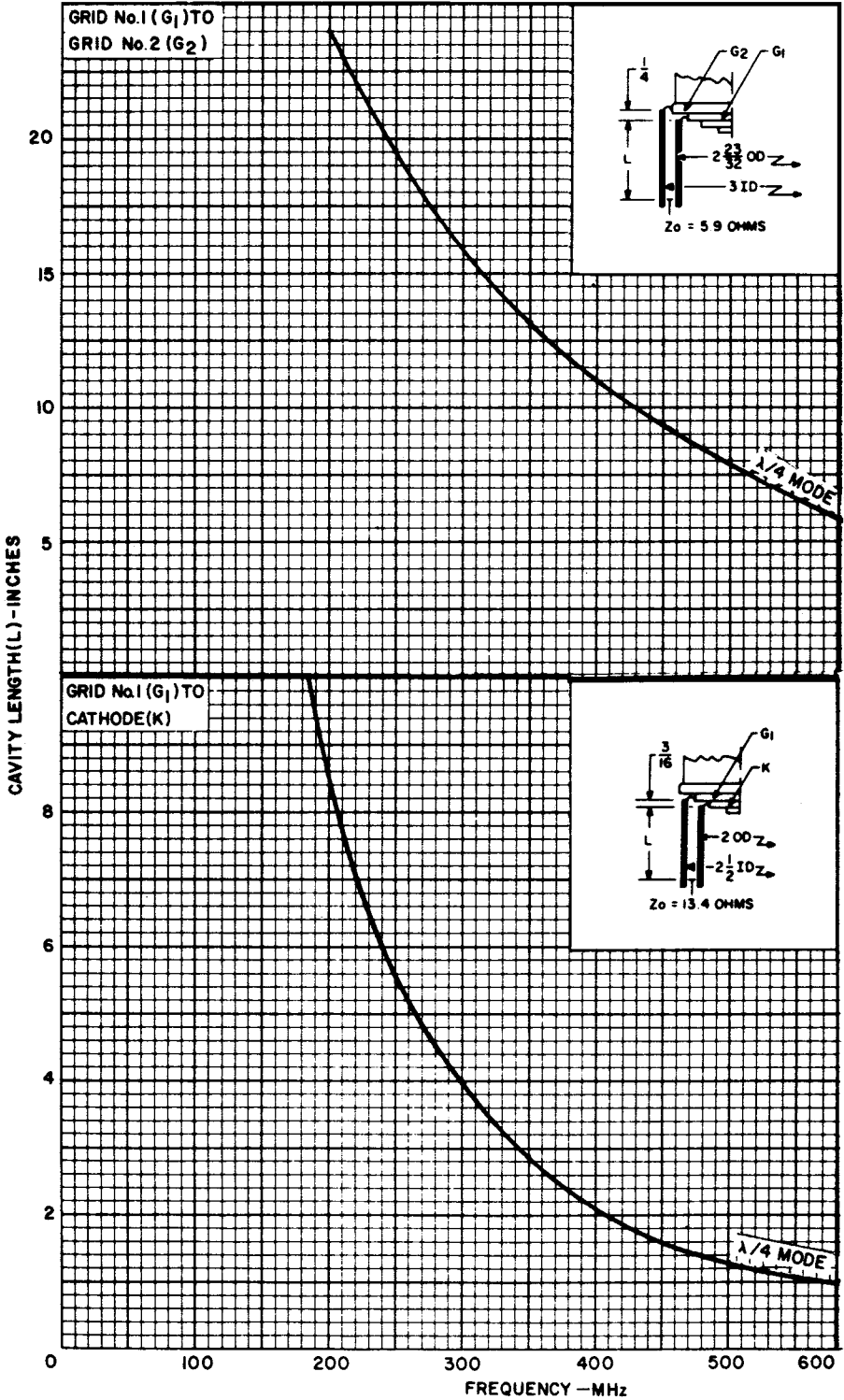
Dim.	Values
A	2.8 (71.)
B	1.8 (46.)
C Radius	0.06 (1.5)
D Radius	0.06 (1.5)
E	0.7 (18.)
F Dia.	0.250 (6.35)
G Radius	1.015 (25.78)
H	0.75 (19.)
J Dia.	0.140 (3.56)
K	8.3° 0.145 radians
M	4.5° 0.078 radians

Notes:

1. Material 1/16" thick cold rolled steel.
2. Round all edges
3. Slot between holes

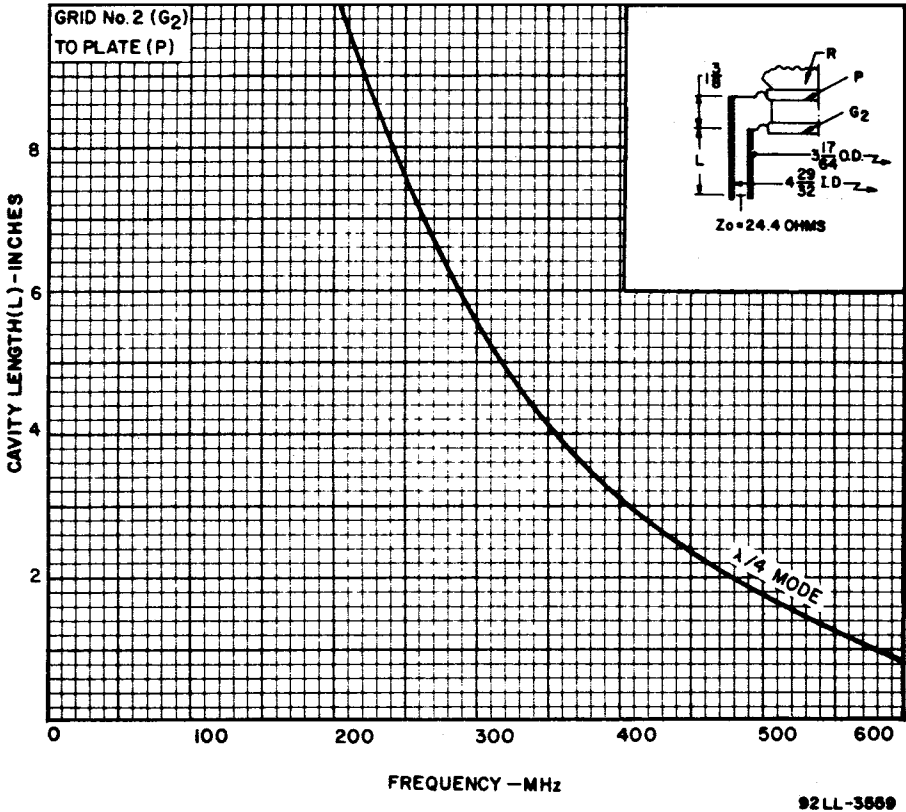
*Dimensions are in inches unless otherwise stated. Dimensions in parentheses are in millimeters and are derived from the basic inch dimensions (1 inch = 25.4 mm).

ELECTRODE CAVITY TUNING CHARACTERISTICS



92LL-3559

ELECTRODE CAVITY TUNING CHARACTERISTICS



Detailed performance and application information is available through your RCA Sales Office Distributor, or write to RCA Commercial Engineering, Harrison, N. J. 07029