



VHF-TV Amplifier Tube

- CERMOLOX[®]
- Full Input to 400 MHz
- Sturdy, Reliable
- Matrix Oxide Cathode
- 1350 Peak Sync. Output in VHF-TV Service

The RCA 8792/V1 is designed specifically to meet the stringent requirements of modern VHF-TV equipments.

Its high gain, CERMOLOX tube construction and full input rating to 400 MHz also make it ideally suited for high frequency applications such as VHF-TV grid-modulated service and VHF or UHF Class B linear service where it will deliver 1350 watts peak sync. or 300 watts carrier output respectively.

The low inductance, coaxial construction enables the use of simple, economical circuit techniques in all HF, VHF, and UHF applications.

Its matrix oxide cathode enhances system reliability while the efficient, forced-air cooled radiator reduces system air requirements and permits more reliable, lower temperature operation.

This bulletin gives application information unique to the RCA-8792/V1. General information, covering the installation and operation of this tube type, is given in the "Application Guide for RCA Power Tubes", 1CE-300. Close attention to the instructions contained therein will assure longer tube life, safer operation, less equipment downtime, and fewer tube handling accidents.

General Data

Electrical:

Heater-Cathode:

Type Unipotential, Oxide Coated, Matrix Type

Voltage ^a (ac or dc)	}	5.5 typ.	V
		5.8 max.	V
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	0.2	max.	pF
Grid No.1 to Cathode-Heater	38		pF
Plate to Cathode-Heater ^c	0.2	max.	pF
Grid No.1 to Grid No.2	52		pF
Grid No.2 to Plate	16		pF
Grid No.2 to Cathode-Heater ^c	1.4		pF

Mechanical:

Operating Position	Any
Maximum Length (84.8 mm)	3.34 in
Greatest Diameter (95.3 mm)	3.75 in
Terminal Connection	See Dimensional Outline
Socket	See page 2
Radiator	Integral part of tube
Weight (Approx.) (0.9 kg)	2 lbs

Thermal:

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

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**Grid-Modulated RF Power Amplifier^e
Class C Television Service**

Synchronizing-level conditions per tube unless otherwise specified

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 Plate Current	1.25 max.	A
Grid-No.2 Input	50 max.	W
Plate Dissipation	1500 max.	W
Grid-No.1 Current	200 max.	mA

Typical Operation

Grid-drive circuit at 216 MHz at a bandwidth ^k of 6.0 MHz		
DC Plate Voltage	2500	V
DC Grid-No.2 Voltage	500	V
Peak RF Grid-No.1 Voltage:		
Synchronizing level	80	V
Blanking level	60	V
DC Grid-No.1 Voltage	-70	V
DC Plate Current:		
Synchronizing level	1.2	A
Blanking level	0.9	A
DC Grid No.2 Current Blanking Level	-40	mA
DC Grid-No.1 Current (Approx.):		
Synchronizing level	5.0	mA
Blanking level	00	A
Driver Power Output (Approx.):		
Synchronizing level	110	W
Blanking level	65	W
Useful Power Output (Approx.):		
Synchronizing level	1350	W
Blanking level	750	W

Notes

- a See Section V.A.3 of 1CE-300.
- 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.
- e See Section V.C. of 1CE-300.
- f See Section V.B. and V.B.1 of 1CE-300.
- g See Section V.B.2 of 1CE-300.
- k Measured at the -1.0 dB point of a double tuned output circuit.
- m Computed between half-power points using two times tube capacity.
- n Adjust for zero-signal DC plate current of 0.2 A.

**Linear RF Power Amplifier^e
Class AB or Class B Telephony**

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.1 Voltage ^g	1000 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 3.5 MHz^m

DC Plate Voltage	2600	V
DC Grid-No.2 Voltage ^g	500	V
DC Grid-No.1 Voltage ⁿ	-65	V
DC Plate Current	550	mA
DC Grid-No.1 Current	0	A
DC Grid-No.2 Current	-10	mA
Driver Power (Approx.)	25	W
Output Circuit Eff. (Approx.)	90	%
Useful Power Output	300	W

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

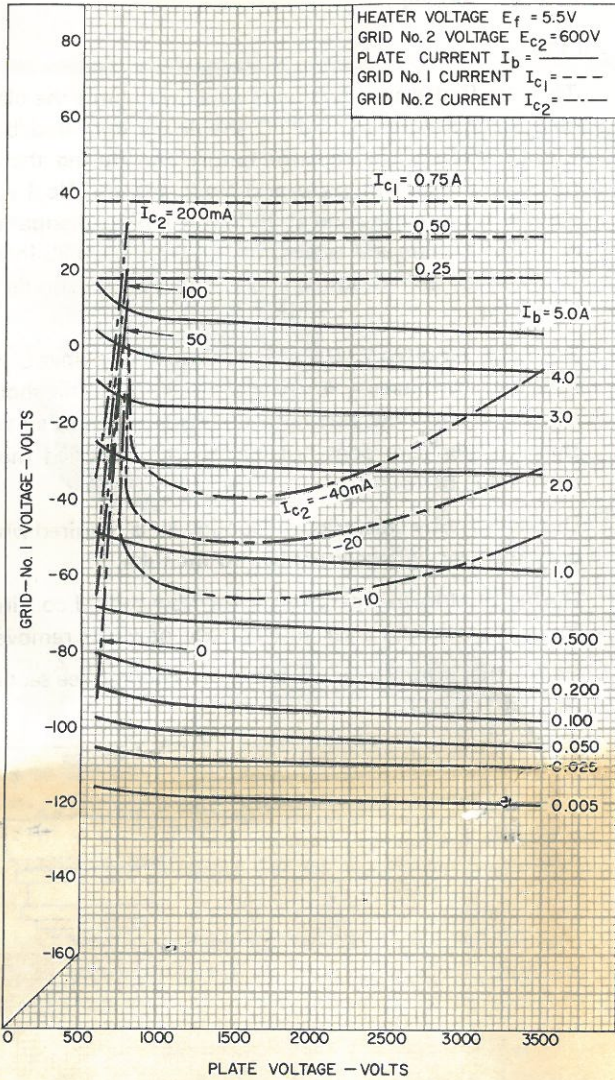


Figure 1 - Typical Constant Current Characteristics ($E_{c2} = 600 V$)

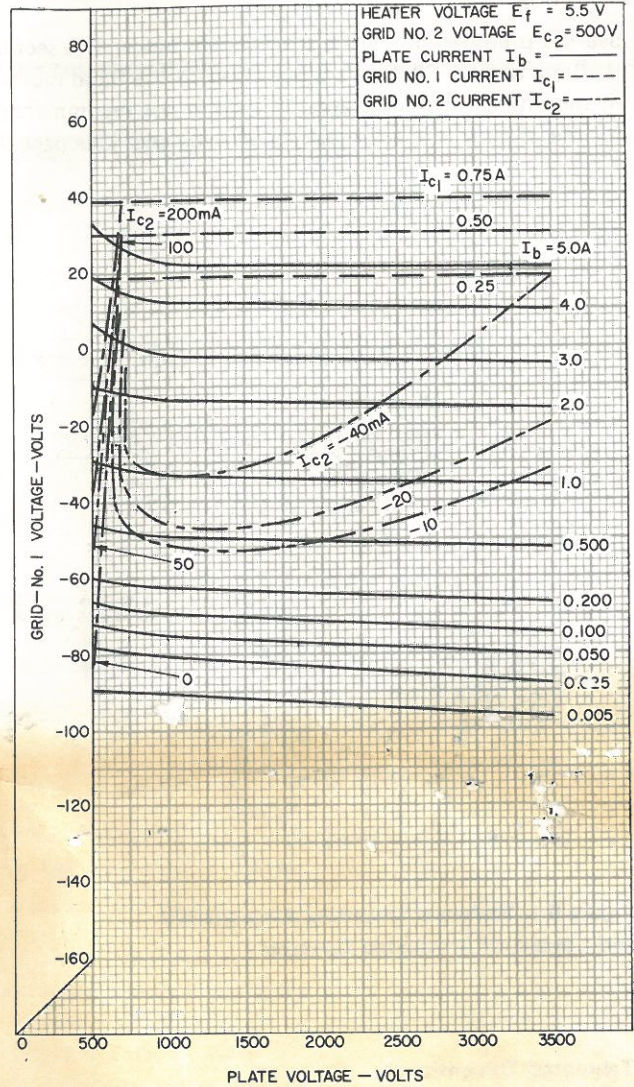


Figure 2 - Typical Constant Current Characteristics ($E_{c2} = 500 V$)

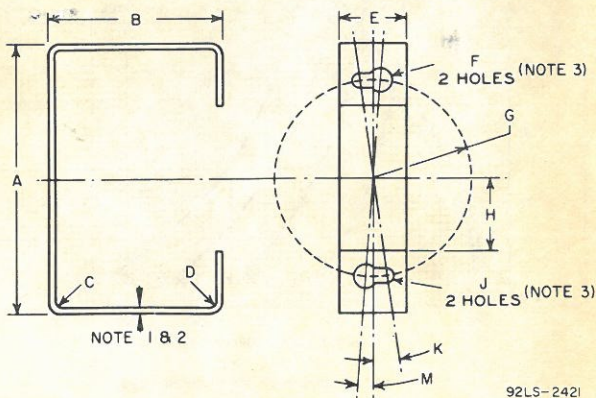


Figure 3 - Tube Extractor - Suggested Design

Dim.	Value	
A	2.8	(71.)
B	1.8	(46.)
C	0.06	(1.5)
D	0.06	(1.5)
E	0.7	(18.)
F	0.250 ± .005	(6.350 ± .127)
G	1.015 ± .005	(25.781 ± .127)
H	0.75	(19.)
J	0.140 ± .005	(3.556 ± .127)
K	8.3°	0.145 radians
M	4.5°	0.078 radians

Radius
 Radius
 Dia.
 Radius
 Dia.

Notes:

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

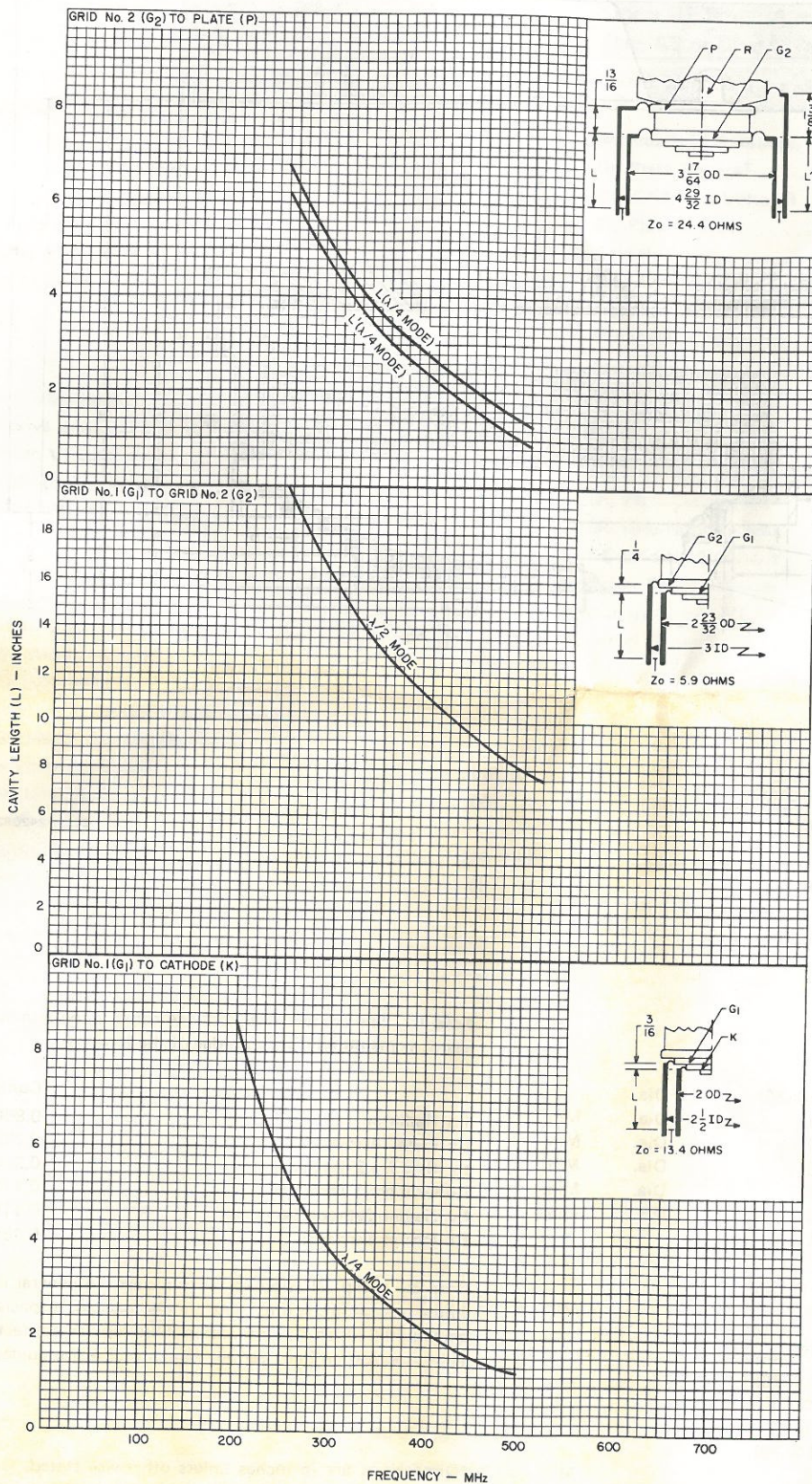


Figure 4 — Electrode Cavity Tuning Characteristics

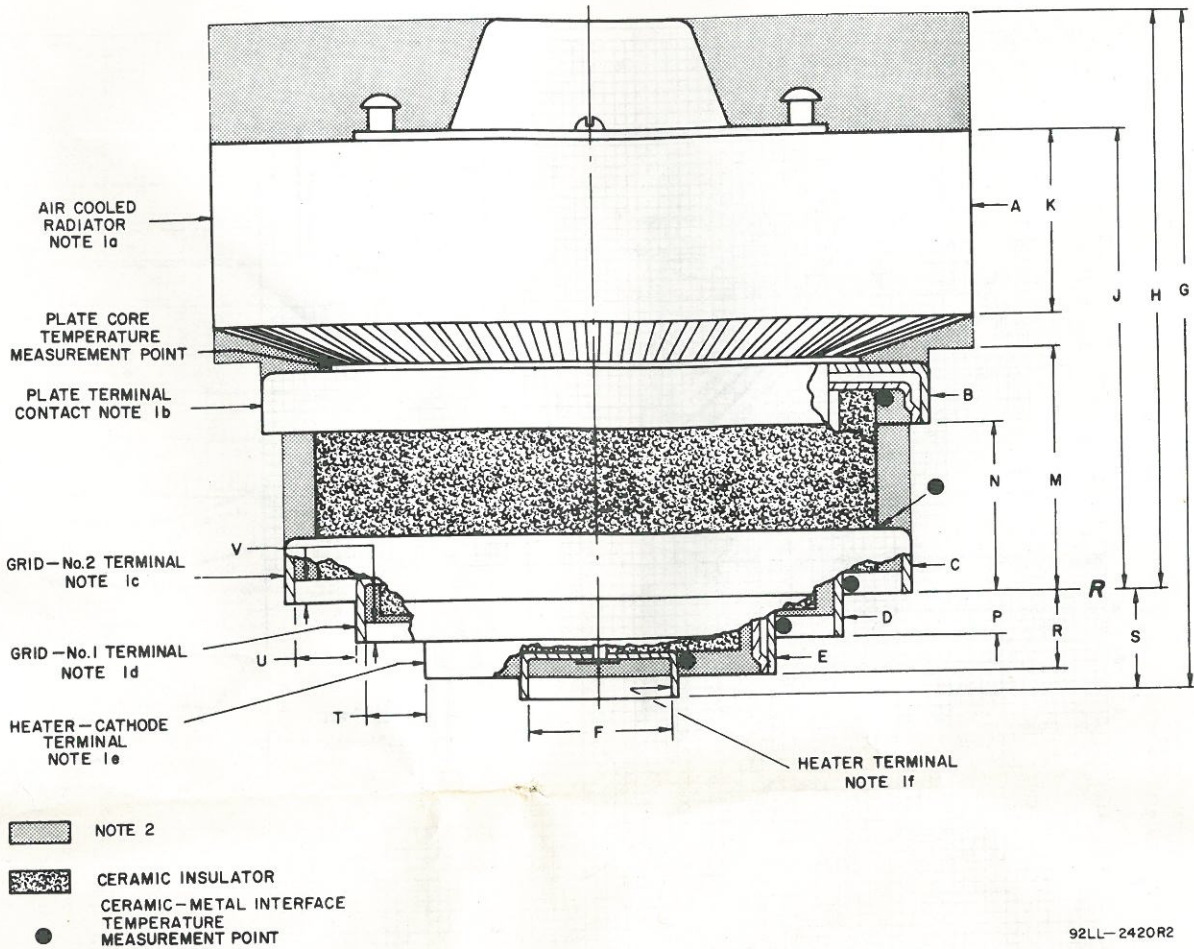


Figure 5 - Dimensional Outline

Tabulated Dimensions*

Dim.	Value	Dim.	Value	Contact Distance
A	3.72 ± .03 (94.49 ± .76)	Dia.	Min.	1.a Radiator 0.850 (21.59)
B	3.210 (81.54)	Dia.	Min.	1.b Plate Terminal 0.220 (5.59)
C	3.010 (76.45)	Dia.	Min.	1.c Grid No.2 Terminal 0.220 (5.59)
D	2.307 (58.60)	Dia.	Min.	1.d Grid No.1 Terminal 0.175 (4.45)
E	1.710 (43.41)	Dia.	Min.	1.e Heater-Cathode Terminal 0.115 (2.92)
F	0.725 (18.41)	Dia.	Max.	1.f Heater Terminal 0.135 (3.43)
G	3.24 ± .10 (82.3 ± 2.5)			
H	2.78 ± .07 (70.61 ± 1.78)			
J	2.19 ± .04 (55.63 ± 1.02)			
K	0.85 (21.59)	Min.		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.
M	1.160 + .005 (29.464 + .127) - .000 (29.464 - .000)			
N	0.82 ± .03 (20.83 ± .76)			
P	0.200 ± .025 (5.08 ± .63)			
R	0.37 ± .03 (9.40 ± .76)			
S	0.46 ± .03 (11.68 ± .76)			
T	0.200 (5.08)	Min.		*Dimensions are in inches unless otherwise stated. Dimensions in parentheses are in millimeters and are derived from the basic inch dimension (1 inch = 25.4 mm).
U	0.250 (6.35)	Min.		
V	0.105 (2.66)	Min.		

