

Price 60 Cents*

RCA

POWER

TUBES



RADIO CORPORATION
ELECTRONIC COMPONENTS AND DEVICES

OF AMERICA
LANCASTER, PENNA.

*Suggested Price

Form No. PG-101F

Leader in tube design, development, and manufacture, RCA brings over three decades of tube know-how to bear on your power-tube requirements.

RCA's most recent contribution to power-tube technology is the CERMOLOX[®] "family" developed expressly for critical industrial and demanding military applications. CERMOLOX design is adaptable to sizes ranging from watts to megawatts, and to 3000 Mc, and higher, in frequency.

CERMOLOX is but one of many products of the modern RCA Lancaster design and production facility. Of the work area totaling about 1,000,000 square feet, nearly 300,000 square feet of the plant are devoted to power-tube operations.

Here, power tubes are manufactured under the most stringent processing conditions. Cleanliness, air filtration, and humidity control are important tools in a manufacturing environment that actively incorporates product design, quality control and applications engineering into a closely knit team.

At the forefront of electron tube application and technology, the Market Planning and Engineering activities work at anticipating the needs of equipment designers five, and more, years ahead. You are invited to review your power-tube requirements with our Marketing and Field Sales Representatives.



Lancaster, Pennsylvania — headquarters of the RCA Industrial Tube and Semiconductor Division.

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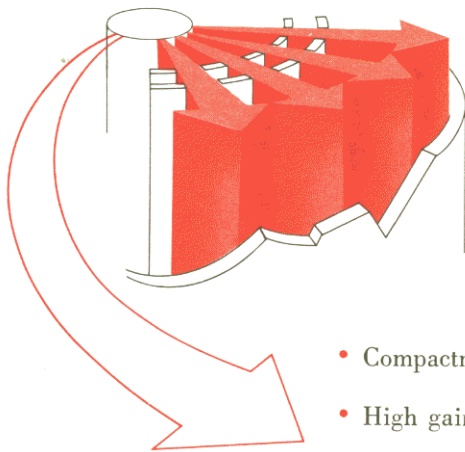
34 INDEX — numerical listing of tube types

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Type numbers with prefix "A" identify developmental types suitable for engineering evaluation. The number and identifying data are subject to change. Before specifying any of these types in production equipment, please contact RCA. No obligation is assumed by RCA as to future manufacture of developmental types unless otherwise arranged.

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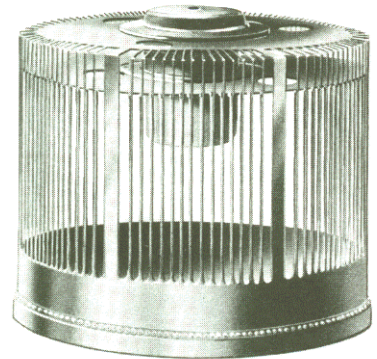
THE INSIDE STORY OF CERMOLOX



RCA'S NEW CONCEPT OF UHF BEAM POWER TUBE TECHNOLOGY

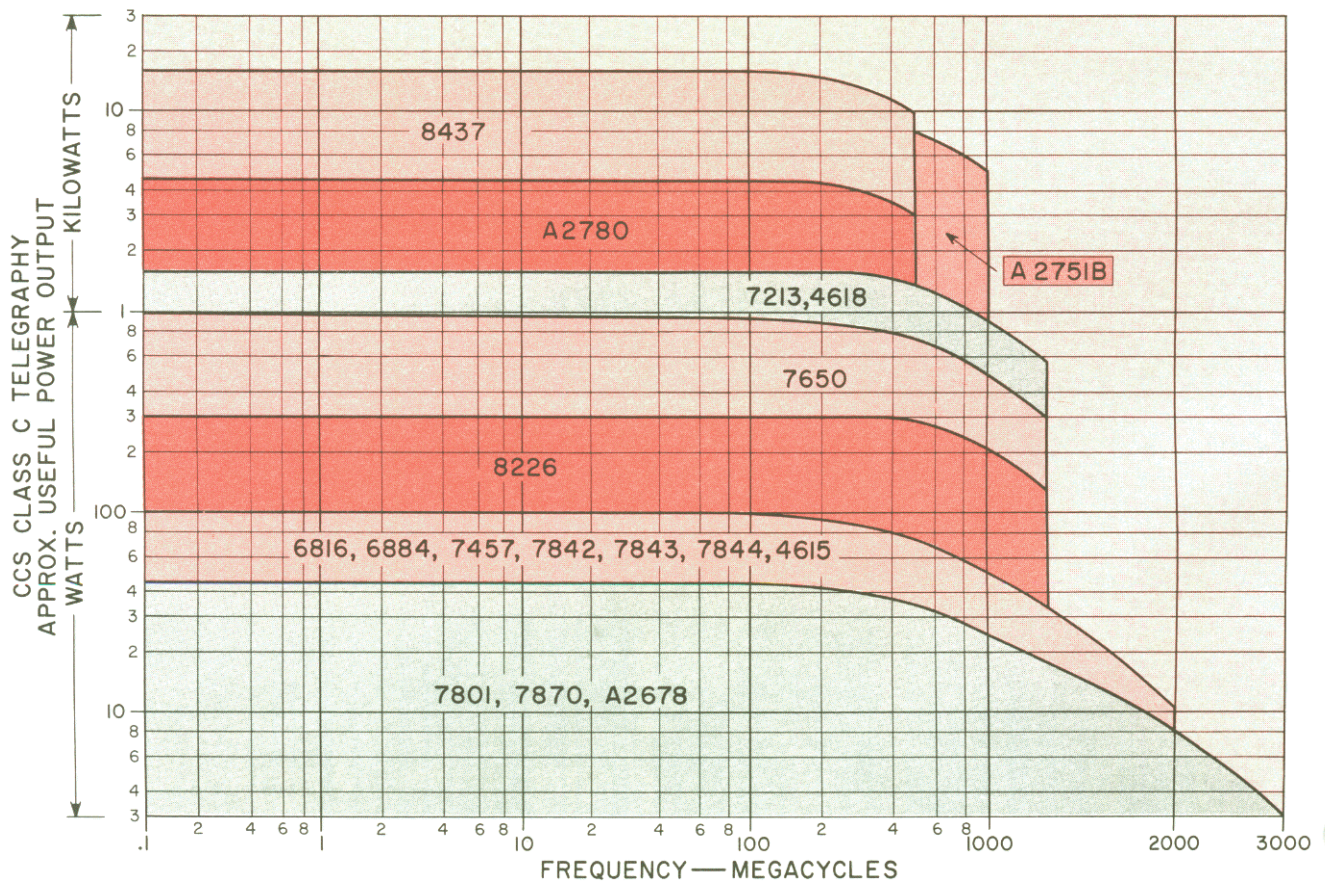
This new family of beam power tubes with precision-aligned grids, unitized electrode-and-terminal in coaxial configuration, and ceramic-metal construction offer the following advantages:

- Compactness
- High gain
- High power-output density
- Minimum screen current
- Negligible grid emission
- Sturdy construction
- High-temperature operation

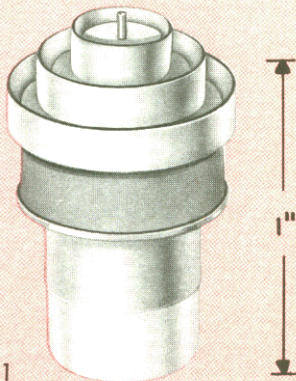


RCA CW CERMOLOX QUICK-SELECTION GRAPH

Excerpt of RCA CW power tube quick-selection graph. See details on page 19.



BEAM POWER TUBE



7801
7870
A2678

RCA-7801

12.6-VOLT, 0.5-ampere Heater

RCA-7870

6.3-VOLT, 1.0-ampere Heater

RCA Dev. No. A2678

6.3-VOLT, 0.795-ampere Heater

3.2 Watts CW Output at 3000 Mc.
15 Watts CW Output at 1200 Mc.
27 Watts CW Output at 400 Mc.

- CERMOLOX
- Very Small Size
- Conduction Cooled
- 52.5 Maximum Watts Input
- AF Amplifier, RF Amplifier & Osc., Regulator Service

BEAM POWER TUBE

RCA-6816

6.3-VOLT, 2.1-ampere Heater

RCA-6884

26.5-VOLT, 0.52-ampere Heater

RCA-7457

6.3-VOLT, 3.2-ampere Heater

RCA-7844

6.3-VOLT, 2.1-ampere Heater

RCA-7843

26.5-VOLT, 0.52-ampere Heater

RCA-7842

6.3-VOLT, 3.2-ampere Heater

RCA-4615

6.3-VOLT, 3.2-ampere Heater

40 Watts CW Output at 1215 Mc.
80 Watts CW Output at 400 Mc.

RCA-7649

6.3-VOLT, 3.2-ampere Heater

RCA-4622

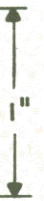
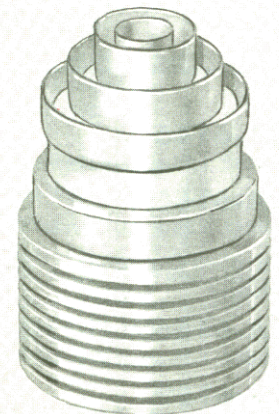
6.3-VOLT, 3.2-ampere Heater

4500 Watts Peak Plate-and-Screen-Pulsed Power Output at 1215 Mc. with Pulse Width of 10 μ sec. and Duty Factor of 0.01

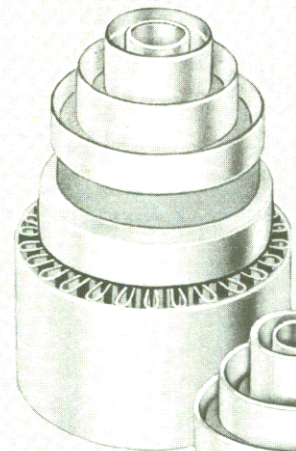
- CERMOLOX
- Small Size
- Transverse-Forced-Air-Cooled Types: 6816, 6884, 7457 & 7649
- Axial-Forced-Air-Cooled Type: 4615
- Conduction-Cooled Types: 7844, 7843, 7842 & 4622
- Ruggedized Types: 7457, 7842, 4615, 7649 & 4622
- CW Types: 6816, 6884, 7457, 7844, 7843, 7842 & 4615
- 180 Maximum Watts Input
- AF Amplifier, RF Amplifier & Osc., Frequency Multiplier, & Regulator Service

RF-Pulse Types: 7649 & 4622

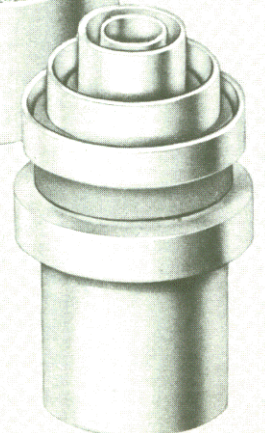
- 9000 Watts Peak Plate Input up to 1215 Mc.
- Grid-and-Screen-Pulsed RF Amplifier, and Plate-and-Screen-Pulsed RF Amplifier Service



6816
6884
7457
7649

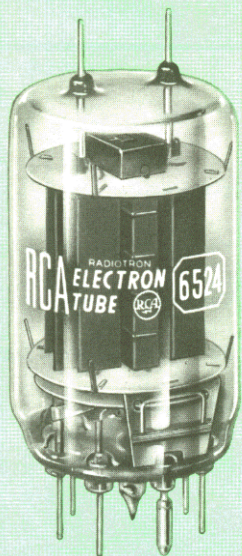


4615



7844
7843
7842
4622

TWIN BEAM POWER TUBE



6524
6850

RCA-6524

6.3-VOLT, 1.25-ampere Heater

RCA-6850

12.6-VOLT, 0.625-ampere Heater

- Sturdy Construction
- Small Size
- 85 Watts Maximum ICAS Plate Input

20 Watts ICAS CW Output at 462 Mc.

56 Watts ICAS CW Output at 100 Mc.

- AF Amplifier & Mod., RF Amplifier & Osc., & Frequency Tripler Service

BEAM POWER TUBE

RCA-6146

6.3-VOLT, 1.25-ampere Heater

RCA-6146A

6.3-VOLT, 1.25-ampere Heater

Controlled Output to 5 Volts on Heater

RCA-6146W/7212

6.3-VOLT, 1.25-ampere Heater

RCA-6159

26.5-VOLT, 0.3-ampere Heater

RCA-6159W/7357

26.5-VOLT, 0.3-ampere Heater

RCA-6883

12.6-VOLT, 0.625-ampere Heater

RCA-8032

13.5-VOLT, 0.585-ampere Heater

35 Watts ICAS CW Output at 175 Mc.

70 Watts ICAS CW Output at 60 Mc.

RCA-4604

6.3-VOLT, 0.65-ampere Filament

30 Watts ICAS CW Output at 175 Mc.

RCA-6293

6.3-VOLT, 1.25-ampere Heater

Peak Plate Current of 3 Amperes at Duty Factor of 0.003

Peak Plate Current of 2 Amperes at Duty Factor of 0.008

Peak Plate Current of 1 Ampere at Duty Factor of 0.04

- RCA Dark Heater on Indirectly-Heated Cathode Types
- Sturdy Construction
- Small Size
- Ruggedized Types: 6146W/7212 & 6159W/7357
- Quick-Heating Type: 4604
- Large-Wafer Octal Base Types: 6146, 6159 & 6293
- Small-Wafer Octal Base Types: 6146A, 6146W/7212, 6159W/7357, 6883, 8032 & 4604

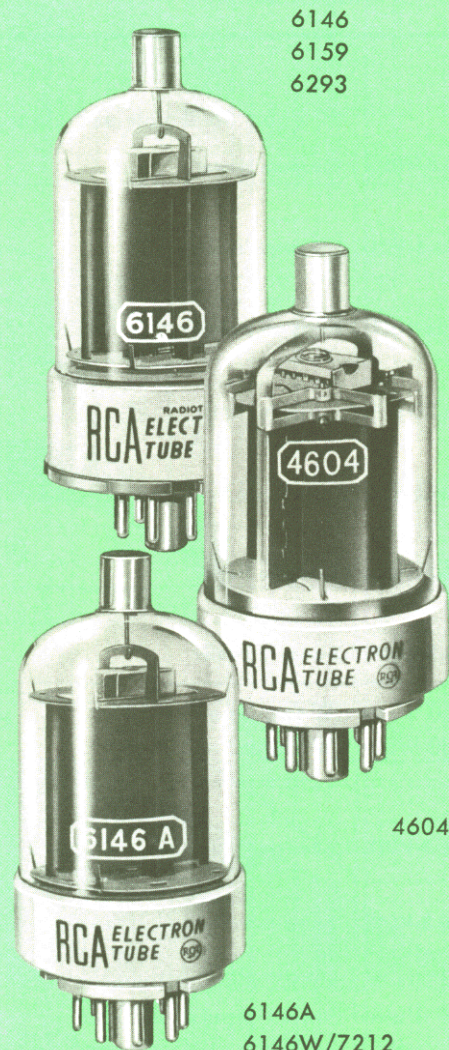
CW Types: 6146, 6146A, 6146W/7212, 6159, 6159W/7357, 6883, 8032 & 4604

- 25 Watts Maximum ICAS Plate Dissipation

- AF Amplifier & Mod., RF Amplifier & Osc. Service

Hard-Tube-Modulator Type: 6293

- Up to 10 Watts Plate Dissipation
- Plate Voltage up to 3500 Volts

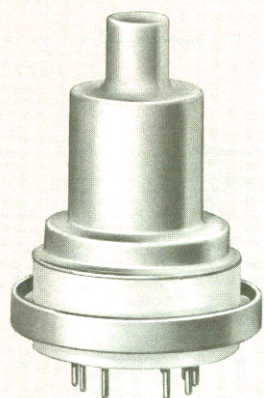


6146
6159
6293

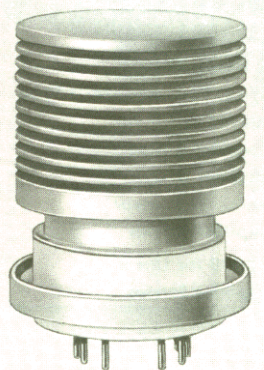
4604

6146A
6146W/7212
6159W/7357
6883
8032

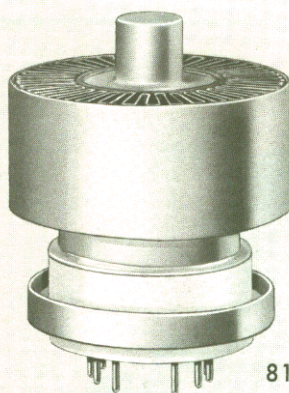
BEAM POWER TUBE



8072
8462



1"
8121



8122

RCA-8072

12-to 15-VOLT, 1.3-ampere Heater

RCA-8462

2.5-VOLT, 4.0-ampere Filament

At Plate Volts = 700:

- 85 Watts CW Output at 470 Mc.
- 105 Watts CW Output at 175 Mc.
- 110 Watts CW Output at 50 Mc.

RCA-8121

13.5-VOLT, 1.3-ampere Heater

At Plate Volts = 1500:

- 170 Watts PEP Output at 30 Mc.
- 235 Watts CW Output at 470 Mc.
- 275 Watts CW Output at 50 Mc.

RCA-8122

13.5-VOLT, 1.3-ampere Heater

At Plate Volts = 2000:

- 380 Watts PEP Output at 30 Mc.
- 300 Watts CW Output at 470 Mc.
- 375 Watts CW Output at 50 Mc.

- Sturdy Ceramic-Metal Construction
- Precision-Aligned Grids
- Small Size
- Compact
- Conduction-Cooled Types: 8072 & 8462
- Transverse-Forced-Air-Cooled Type: 8121
- Axial-Forced-Air-Cooled Type: 8122
- Quick-Heating Type: 8462
- 400-Watt Maximum Plate Dissipation Type: 8122
- 150-Watt Maximum Plate Dissipation Type: 8121
- 100- to 300-Watt Maximum Plate Dissipation (depending on heat-sink) Types: 8072 & 8462
- RF Amplifier & Osc. & Linear RF Amplifier Service in Mobile Applications

POWER TRIODE

RCA-6161

6.3-VOLT, 3.4-ampere Heater

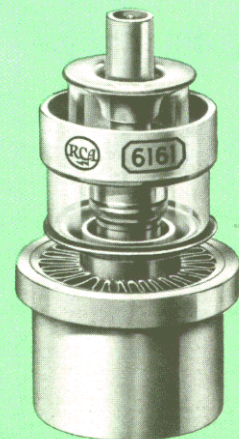
- 180 Watts CW Output at 900 Mc.
- 270 Watts CW Output at 600 Mc.

RCA-5946

6.3-VOLT, 3.4-ampere Heater

- 14,000 Watts Peak Plate-Pulsed Power Output at 1250 Mc. with Pulse Width of 5 μ sec. and Duty Factor of 0.01

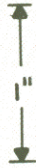
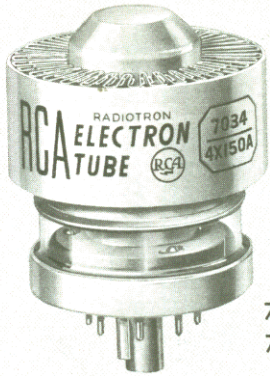
- Forced-Air Cooled
- Compact
- Small Size
- 250 Watts Maximum Plate Dissipation
- CW Type: 6161
- RF Amplifier & Osc., Television, and Frequency Multiplier Service
- RF-Pulse Type: 5946
- UHF Plate-Pulsed Oscillator and Amplifier Service



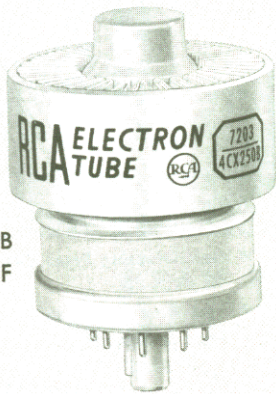
1"
6161
5946

6161
5946

BEAM POWER TUBE



7034/4X150A
7035/4X150D



7203/4CX250B
7204/4CX250F
7580

RCA-7034/4X150A

6-VOLT, 2.6-ampere Heater

RCA-7035/4X150D

26.5-VOLT, 0.58-ampere Heater

140 Watts CW Output at 500 Mc.
370 Watts CW Output at 150 Mc.

RCA-7203/4CX250B

6-VOLT, 2.6-ampere Heater

RCA-7204/4CX250F

26.5-VOLT, 0.58-ampere Heater

250 Watts CW Output at 500 Mc.
400 Watts CW Output at 175 Mc.

RCA-7580

6-VOLT, 2.6-ampere Heater

360 Watts PEP Output at 500 Mc.
400 Watts PEP Output at 30 Mc.

- Forced-Air Cooled
- Glass-Metal Types:
7034/4X150A &
7035/4X150D
- Ceramic-Metal Types:
7203/4CX250B,
7204/4CX250F & 7580
- Small Size
- Compact
- 250 Watts Maximum
Plate Dissipation
- Types 7034/4X150A,
7035/4X150D, 7203/4CX250B
& 7204/4CX250F for
AF Amplifier & Mod.,
RF Amplifier & Osc.,
Television and Linear
RF Amplifier Service
- Type 7580 for Linear
RF Amplifier Service

BEAM POWER TUBE

RCA-8226

6.3-VOLT, 3.2-ampere Heater

105 Watts CW Output at 1215 Mc.
340 Watts CW Output at 400 Mc.

RCA-8227

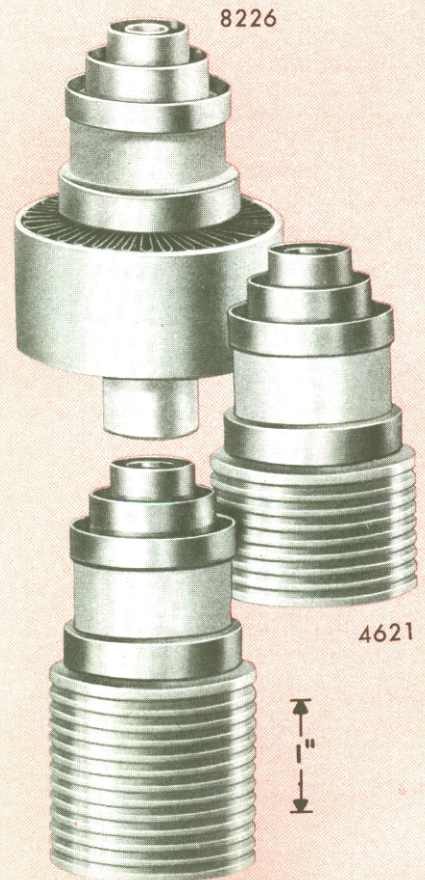
6.3-VOLT, 3.2-ampere Heater

RCA-4621

6.3-VOLT, 3.2-ampere Heater

17,000 Watts Peak Plate-Pulsed
Power Output at 1215 Mc. with
Pulse Width of 5 μ sec. and Duty
Factor of 0.005

- CERMOLOX
 - Axial-Forced-Air-Cooled
Type: 8226
 - Transverse-Forced-Air-
Cooled Types:
4621 (shorter radiator) &
8227 (longer radiator)
 - Small Size
- CW Type: 8226
- 300 Watts Maximum
Plate Dissipation
 - AF Amplifier & Mod.,
RF Amplifier & Osc.,
Linear RF Amplifier and
Frequency Multiplier
Service
- RF-Pulse Types:
8227 & 4621
- 125 Watts Maximum
Plate Dissipation
 - Pulsed RF Amplifier
Service



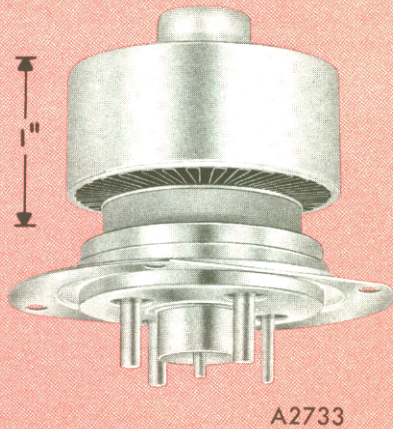
8226

4621



8227

BEAM POWER TUBE



RCA Dev. No. A2733

6.3-VOLT, 3.75-ampere Heater

300 Watts CW Output at 890 Mc.
in Grid-Drive Service

- Forced-Air Cooled
- Sturdy Ceramic-Metal Construction
- Compact
- Precision-Aligned Grids
- 400-Watts Maximum Plate Dissipation
- Internal Screen Bypass Capacitor
- Distributed Amplifier Service
- RF Amplifier & Osc., Linear RF Amplifier, and Grid-Modulated Service

BEAM POWER TUBE

RCA-7650

6.3-VOLT, 7.5-ampere Heater

800 Watts CW Output at 400 Mc.

RCA-7651

6.3-VOLT, 7.5-ampere Heater

39,000 Watts Peak Plate-and-Screen Pulsed Power Output at 1215 Mc. with Pulse Width of 10 μ sec. and Duty Factor of 0.01

RCA-4614

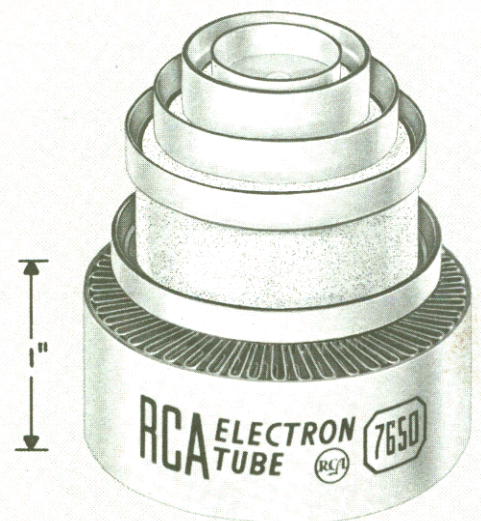
6.3-VOLT, 7.5-ampere Heater

Voltage Regulator Service

- CERMOLOX
 - Forced-Air Cooled
 - Ruggedized
 - 600-Watt Maximum Plate Dissipation
- CW Type: 7650
- AF Amplifier & Mod., RF Amplifier & Osc., and Linear RF Amplifier Service
- RF-Pulse Type: 7651
- Grid-Pulsed RF Amplifier, Grid-and-Screen-Pulsed RF Amplifier, and Plate-and-Screen-Pulsed RF Amplifier Service

Voltage Regulator Type: 4614

- Rhodium plated for Oil Cooling
- 2500 Volts Maximum Plate Voltage
- 0.5 Ampere Maximum Plate Current



7650
7651
4614

BEAM POWER TUBE



7213
4618
7214
4600A

RCA-7213

5.5-VOLT, 17.3-ampere Heater

RCA-4618

5.5-VOLT, 17.3-ampere Heater

1350 Watts CW Output at 600 Mc.

RCA-7214

5.5-VOLT, 17.3-ampere Heater

65,000 Watts Peak Plate-and-Screen-Pulsed Power Output at 1215 Mc. with Pulse Width of 10 μ sec. and Duty Factor of 0.01

RCA-4600A

5.5-VOLT, 17.3-ampere Heater

Voltage Regulator Service

- CERMOLOX
- Forced-Air Cooled
- CW Types: 7213 & 4618
- 4618 has lower Plate-to-Grid-No. 1 and Grid-No. 2 Capacitance
- 1500 Watts Maximum Plate Dissipation
- RF Amplifier & Osc. and Linear RF Amplifier Service
- RF-Pulse Type: 7214
- 1500 Watts Maximum Plate Dissipation
- Grid-Pulsed RF Amplifier and Plate-and-Screen-Pulsed RF Amplifier Service
- Regulator Type: 4600A
- Rhodium Plated for Oil Cooling
- 1750 Watts Maximum Plate Dissipation
- 3500 Volts Maximum Plate Voltage
- 1 Ampere Maximum Plate Current

BEAM POWER TUBE

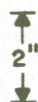
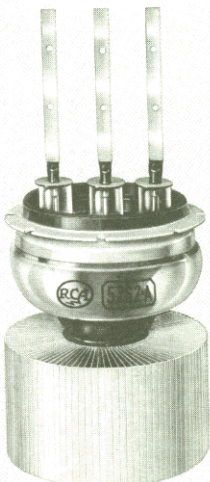
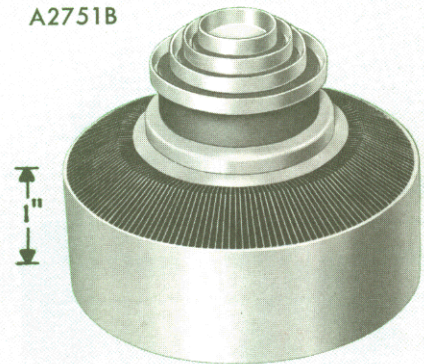
RCA Dev. No. A2751B

6.7-VOLT, 73-ampere Filament

5500 Watts CW Output at 900 Mc.

- CERMOLOX
- Forced-Air Cooled
- Thoriated-Tungsten Mesh Filament
- 10,000 Watts Maximum Plate Dissipation
- RF Amplifier & Osc., and Television Service

A2751B



5762A

POWER TRIODE

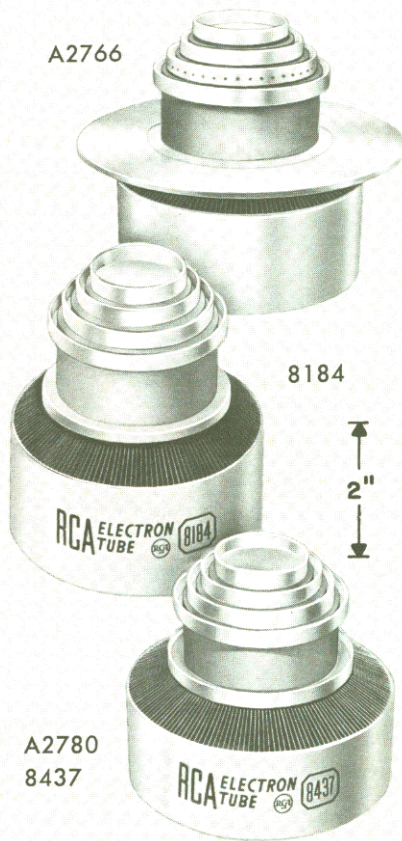
RCA-5762A

12.6-VOLT, 29-ampere Filament

6350 Watts TV Output at 216 Mc.
4000 Watts CW Output at 220 Mc.
5500 Watts CW Output at 110 Mc.
7000 Watts CW Output at 30 Mc.

- Forced-Air Cooled
- Thoriated-Tungsten Filament
- High Perveance
- Stable RF Performance
- 4000 Watts Maximum Plate Dissipation
- AF Amplifier & Mod., RF Amplifier & Osc., and Television Service

BEAM POWER TUBE



RCA-8437

8.5-VOLT, 88-ampere Filament

10,000 Watts CW Output at 500 Mc.

RCA Dev. No. A2780*

22-VOLT, 13-ampere Heater

*Note: Generic Type for which numerous variants are under development.

2500 Watts Class B Telephony Carrier Output at 400 Mc.

RCA-8184

22-VOLT, 12.6-ampere Heater

2,000,000 Watts Maximum Peak Plate Input

RCA Dev. No. A2766

22-VOLT, 13-ampere Heater

250,000 Watts Peak Grid-and-Screen-Pulsed Power Output at 400 Mc. with Pulse Width of 200 μ sec. and Duty Factor of 0.03

- CERMOLOX
 - Forced-Air Cooled
 - Thoriated-Tungsten Mesh Filament Type: 8437
 - Matrix-Type Cathode Types: 8184, A2766 & A2780
 - 10,000 Watts Maximum Plate Dissipation
- CW Types: 8437 & A2780
- RF Amplifier & Osc. Service
- RF-Pulse Types: 8184 & A2766
- Short-Pulse Operation: 8184
 - Medium-Pulse Operation: A2766
 - Pulsed RF Amplifier & Oscillator Service

BEAM POWER TUBE

RCA-6166A/7007

5-VOLT, 168-ampere Filament

14,000 Watts TV Output at 216 Mc.
10,000 Watts CW Output at 216 Mc.
12,000 Watts CW Output at 60 Mc.

RCA-6166

5-VOLT, 168-ampere Filament

12,000 Watts TV Output at 216 Mc.
9,000 Watts CW Output at 216 Mc.
11,600 Watts CW Output at 60 Mc.

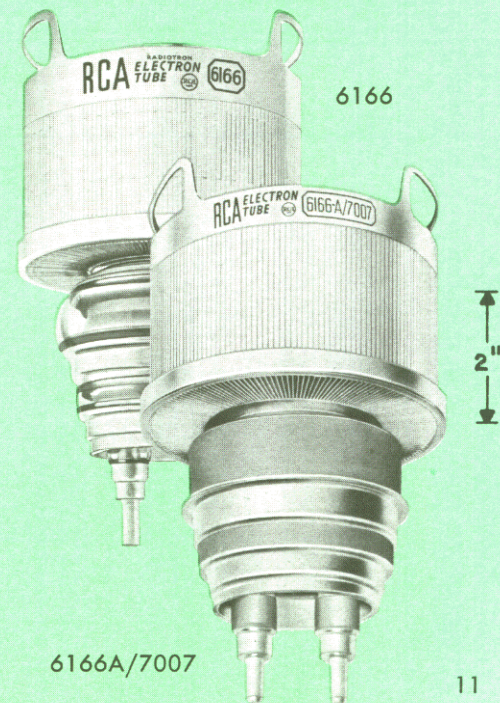
- Forced-Air Cooled
- Thoriated-Tungsten Filament
- RF Amplifier & Osc., Television, and Linear RF Amplifier Service

Ceramic-Metal Type: 6166A/7007

- 12,000 Watts Maximum Plate Dissipation

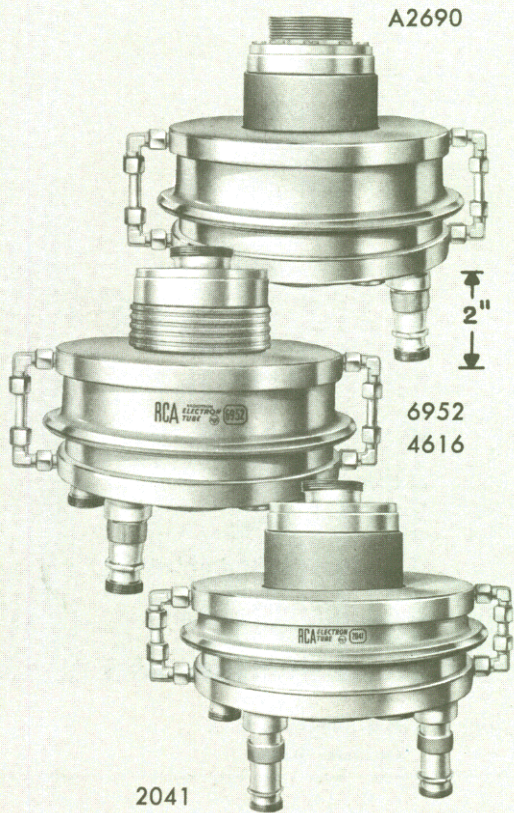
Glass-Metal Type: 6166

- 10,000 Watts Maximum Plate Dissipation



6166A/7007

SUPER-POWER BEAM POWER TUBE



RCA Dev. No. A2690

2-SECTION FILAMENT, 1.75-VOLTS/930-ampères per section

65,000 Watts CW Output at 450 Mc.

RCA-6952

0.95-VOLT, 495-ampere Filament

2,000,000 Watts Peak Plate-Pulsed Power Output at 425 Mc. with Pulse Width of 13 μ sec. and Duty Factor of 0.004

RCA-4616

0.95-VOLT, 495-ampere Filament

2,000,000 Watts Peak Plate-Pulsed Power Output at 425 Mc. with Pulse Width of 13 μ sec. and Duty Factor of 0.004

250,000 Watts Peak Plate-Pulsed Power Output at 600 Mc. with Pulse Width of 2000 μ sec. and Duty Factor of 0.06

RCA-2041

2-SECTION FILAMENT, 1.35-VOLTS/1000-ampères per section

300,000 Watts Peak Plate-Pulsed Power Output at 450 Mc. with Pulse Width of 200 μ sec. and Duty Factor of 0.01

180,000 Watts Peak Plate-Pulsed Power Output at 450 Mc. with Pulse Width of 2000 μ sec. and Duty Factor of 0.06

- Ceramic-Metal Construction

- Liquid-Cooled Types: 6952 & 2041

- Water-Cooled Types: A2690 & 4616

CW, Thoriated-Tungsten Filament Type: A2690

- Power Gain—18 db

- FM Telephony and Television Service

RF-Pulse, Matrix-Oxide-Filament Types: 6952 & 4616

- Power Gain—25 db

- Short-Pulse Operation from 174 to 600 Mc.: 6952 & 4616

- Long-Pulse Operation from 174 to 600 Mc.: 4616

- Plate-Pulsed RF Amplifier Service

RF-Pulse, Thoriated-Tungsten Filament Type: 2041

- Power Gain—23 db

- Long-Pulse Operation from 174 to 575 Mc.

- Grid-Pulsed RF Amplifier, Grid-and-Screen-Pulsed RF Amplifier, and Plate-Pulsed RF Amplifier Service

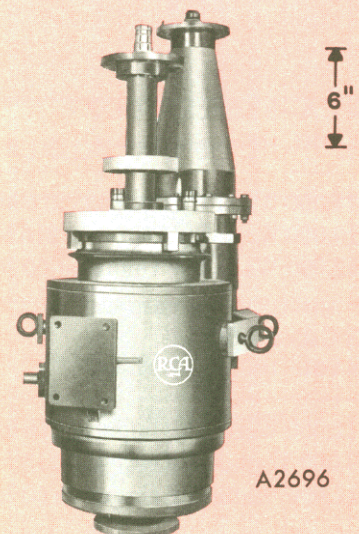
SUPER-POWER "TETRODE" COAXITRON

RCA Dev. No. A2696

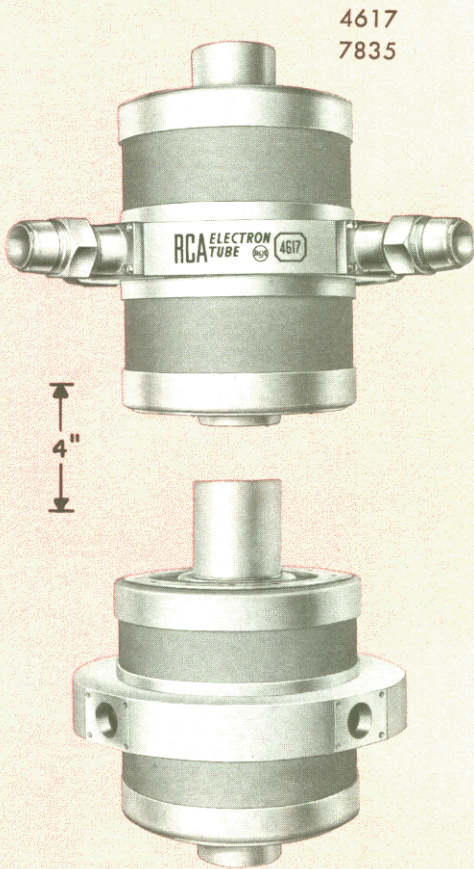
0.95-VOLT, 495-ampere Filament

825,000 Watts Peak Plate-Pulsed Power Output ± 1 db over Pass-Band with Pulse Width of 12 μ sec. and Duty Factor of 0.004

- Ceramic-Metal Construction
- Water Cooled
- Beam-Power-Tube Electronics Structure
- Integral RF Cavities
- High Gain
- Matrix-Oxide Filament
- Short-Pulse and Medium-Pulse Operation from 205 to 225 Mc.
- Broadband RF-Pulse Amplifier Service



SUPER-POWER TRIODE



A15039
2054

RCA Dev. No. A15039

3.1-to 4.2-VOLT, 6600-to 7000-ampere Filament

500,000 Watts CW Output at 425 Mc.

RCA-7835

3.1-to 4.2-VOLT, 6600-ampere Filament

10,000,000 Watts Peak Plate-Pulsed Power Output at 250 Mc. with Pulse Width of 25 μ sec. and Duty Factor of 0.006
5,000,000 Watts Peak Plate-Pulsed Power Output at 250 Mc. with Pulse Width of 2000 μ sec. and Duty Factor of 0.06

RCA-2054

3.1-to 4.5-VOLT, 6600-to 7200-ampere Filament

5,000,000 Watts Peak Plate-Pulsed Power Output at 440 Mc. with Pulse Width of 2000 μ sec. and Duty Factor of 0.06
2,500,000 Watts Peak Plate-Pulsed Power Output at 440 Mc. with Pulse Width of 10,000 μ sec. and Duty Factor of 0.06

RCA-4617

1.5-VOLT, 1800-ampere Filament

8,000,000 Watts Peak Plate-Pulsed Power Output at 425 Mc. with Pulse Width of 25 μ sec. and Duty Factor of 0.01

- Ceramic-Metal Construction
- Water Cooled
- Symmetrical Double-Ended Construction
- High Efficiency

CW, Thoriated-Tungsten Filament Type: A15039

- 750,000 Watts Maximum Plate Dissipation
- RF Amplifier Service

RF-Pulse, Thoriated-Tungsten Filament Types: 7835 & 2054

- Long or Short Pulse to 300 Mc.: 7835
- Long-Pulse to 605 Mc.: 2054
- Plate-Pulsed RF Amplifier Service

RF-Pulse, Matrix-Oxide-Filament Type: 4617

- Short-Pulse Operation up to 450 Mc.
- Plate-Pulsed RF Amplifier Service

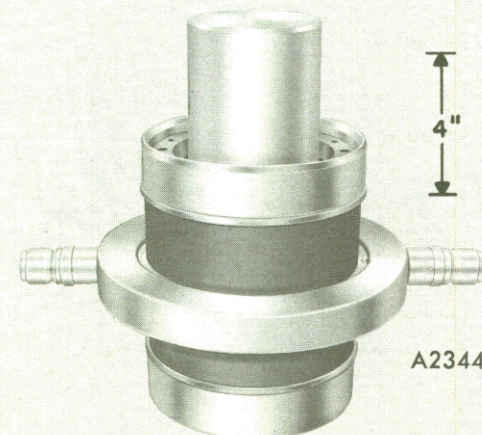
SUPER-POWER TRIODE

RCA Dev. No. A2344

1.3-VOLT, 1100-ampere Filament

2,500,000 Watts Peak Plate-Pulsed Power Output at 540 Mc. with Pulse Width of 10 μ sec. and Duty Factor of 0.008
2,000,000 Watts Peak Plate-Pulsed Power Output at 820 Mc. with Pulse Width of 10 μ sec. and Duty Factor of 0.008

- Ceramic-Metal Construction
- Water Cooled
- Symmetrical Double-Ended Construction
- High Mu
- Matrix-Oxide Filament
- Plate-Pulsed RF Amplifier Service



A2344

SUPER-POWER TRIODE COAXITRON

RCA Dev. No. A15038

1.5-to 1.65-VOLT, 1800-ampere Filament

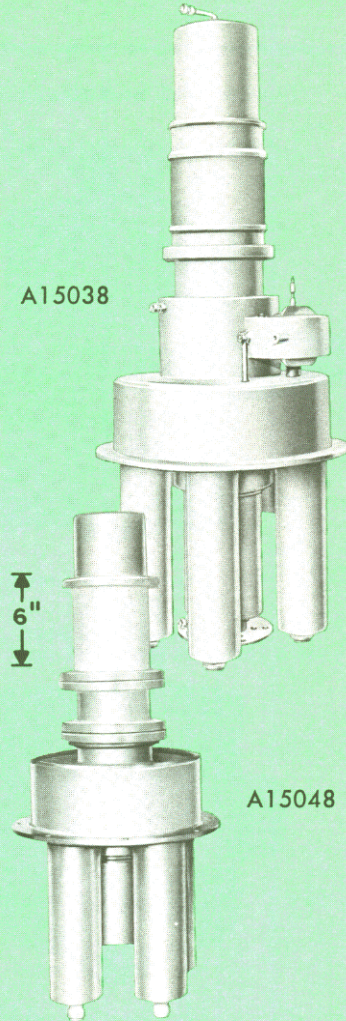
5,000,000 Watts Peak Plate-Pulsed Power Output ± 1 db over Pass-Band with Pulse Width of 25 μ sec. and Duty Factor of 0.0125

RCA Dev. No. A15048

1.3-VOLT, 1100-ampere Filament

1,000,000 Watts Peak Plate-Pulsed Power Output ± 1 db over Pass-Band with Pulse Width of 20 μ sec. and Duty Factor of 0.01

- Ceramic-Metal Construction
- Water Cooled
- Triode Electronics Structure
- Integral RF Cavities
- High Mu
- Matrix-Oxide Filament
- Vacuum-Insulated DC-Voltage Blocking Circuit
- Zero-Bias Grid
- A15038: Short-Pulse Operation from 390 to 450 Mc.
- A15048: Short-pulse and Medium-pulse Operation from 855 to 945 Mc.
- Broadband RF-Pulse Amplifier Service



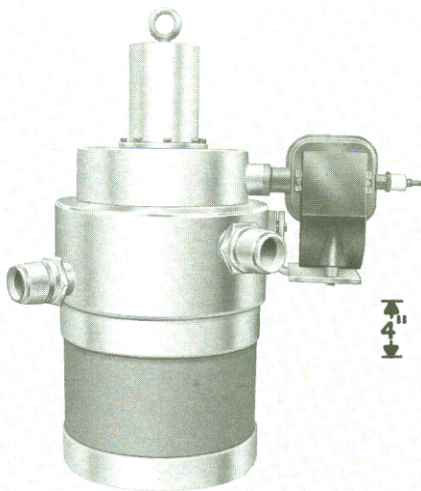
SUPER-POWER TRIODE

RCA Dev. No. A15186C

3.9-VOLT, 6800-ampere Filament

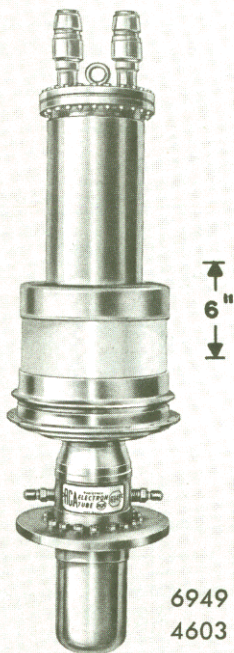
750,000 Watts CW Output at 30 Mc.
 10,000,000 Watts Peak Plate-Pulsed Power Output at 30 Mc. with Pulse Width of 10,000 μ sec. and Duty Factor of 0.001

- Ceramic-Metal Construction
- Water Cooled
- High Mu
- Thoriated-Tungsten Filament
- Power Gain—18 db
- CW or Long-Pulse Operation up to 100 Mc.



A15186C

SUPER-POWER SHIELDED-GRID BEAM TRIODE



6949
4603
A15034C

RCA-6949

7.3-to 7.8-VOLT, 1120-to 1160-ampere Filament

600,000 Watts PEP Output at 10 Mc.
500,000 Watts CW Output at 425 Kc

RCA-4603

7.3-to 7.8-VOLT, 1120-to 1160-ampere Filament

1,500,000 Watts Peak Plate-Pulsed Power Output at 50 Mc. with Pulse Width of 3000 μ sec. and Duty Factor of 0.09

RCA Dev. No. A15034C

7.3-to 7.8-VOLT, 1120-to 1160-ampere Filament

11,100,000 Watts Peak DC-Pulse Power Output with Pulse Width of 3000 μ sec. and Duty Factor of 0.05

- Ceramic-Metal Construction
- Water Cooled
- Thoriated-Tungsten Filament

CW Type: 6949

- Power Gain—24 db
- For use at Maximum Ratings up to 75 Mc.

- 400,000 Watts Maximum Plate Dissipation

- RF Amplifier and Linear RF Amplifier Service

RF-Pulse Type: 4603

- Power Gain—21 db
- Long Pulse Operation up to 100 Mc.

- 150 Watts Maximum Plate Dissipation

- Grid-Pulsed RF Amplifier and Plate-Pulsed Amplifier Service

DC-Pulse Type: A15034C

- Exceptionally Low Grid-Driving Power
- Low Tube-Voltage Drop
- Hard-Tube Modulator Service

SUPER-POWER KLYSTRON

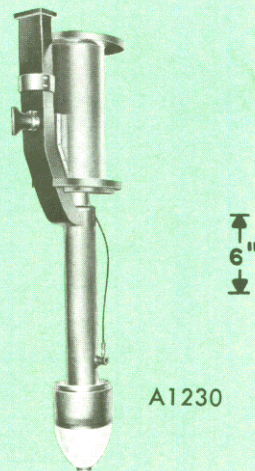
RCA Dev. No. A1230*

17.0-VOLT, 16.0-ampere Heater

*Note: Generic Type for which variants are under development.

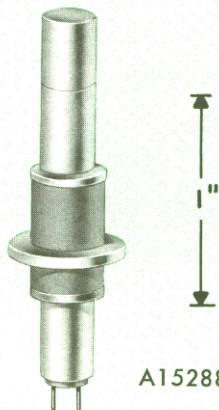
21,000,000 Watts Peak Power Output at 2856 Mc. with Pulse Width of 2.5 μ sec. and Duty Factor of 0.0009

- Ceramic-Metal Construction
- Water Cooled
- Fixed Tuned
- Five Resonators
- Choice of Permanent or Electro-Magnet Focusing
- Waveguide Flange for RG-48/U Waveguide
- Power Gain—50 db
- Short-Pulse Operation at 2856 Mc.



A1230

PENCIL TRIODE



A15288

RCA Dev. No. A15288

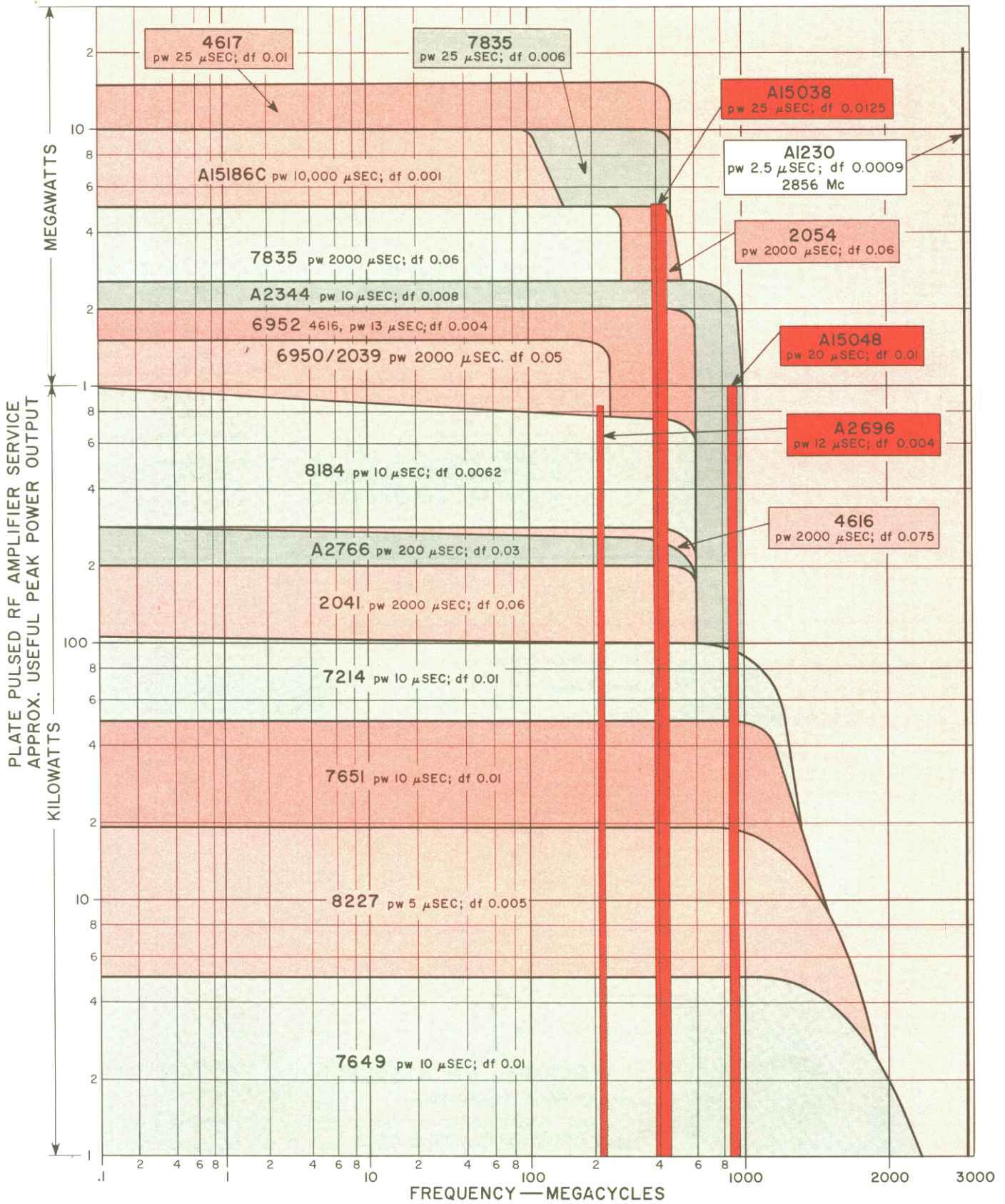
6-VOLT, 0.26-ampere Heater

1000 Watts Peak Plate-Pulsed Power Output at 5000 Mc. with Pulse Width of 1 μ sec. and Duty Factor of 0.001

0.2 Watt CW Output at 5000 Mc.

- RCA Dark Heater
- Quick Heating
- Very Small Size
- Natural Cooled
- Sturdy Ceramic-Metal Construction
- CW and Plate-Pulsed Osc., RF Power Amplifier & Frequency Multiplier

RCA RF-PULSE POWER TUBE QUICK-SELECTION GRAPH



RCA VACUUM POWER TUBES FOR RF-PULSE APPLICATIONS



CHECK THIS GRAPH FIRST for preliminary selection on basis of frequency and peak power output for RF-pulse applications (for CW applications, see graph on pages 18 and 19).

The peak-power-output values shown on the graph are typical values at the pulse width (PW) and duty factor (DF) shown which can be achieved by operation within the maximum ratings for the tube type, and in circuits having reasonably high efficiency, but are not guaranteed values. In most cases a tube type indicated in a given power-frequency area can be expected to perform as well or better in any area below or to the left of the one

in which it is listed. The Coaxitrons (Dev. No. A2696, A15048 and A15038) and the Klystron (Dev. No. A1230) operate only in the frequency band indicated.

This graph is intended only to narrow the possible choices of tube types for a specific application. For features, see **Selected RCA Power Tubes for New-Equipment Design** starting on page 5; for additional condensed data on commercial types, see **RCA Vacuum Power Tubes for RF-Pulse Applications** shown below. For further information on specific types, see page 35.

Tube-type designations with "A" prefix are developmental types. See page 3.

RCA Type	Description	Cooling	Filament (F) or Heater		Max. Dimensions Inches		Class of Service #	Max. Frequency for Full Input Mc	Max. Plate Ratings†				Typical Operating Conditions‡			
			Volts	Amp.	Length	Diam.			Peak Volts	Peak Amp.	Max. "On" Time μ sec.	Time Interval μ sec.	Frequency Mc	Pulse Duration μ sec.	Duty Factor	Approx. Useful Peak Power Output Kw
2C40A	Lighthouse Triode	Natural	6.3	0.75	2 ⁹ / ₁₆	1.312	P·P·O	3370	1400	2.0	10	5000	For Existing Equipment			
2041	Beam Power Tube	Liquid	2-Section 1.35F ^a 1000 ^a		8.93	11.25	B·P·P B·P·P	174 to 575 174 to 575	40000 30000	15 15	220 2500	11000 33300	450 450	200 2000	0.01 0.06	300 180
2054	Triode	Water	3.1 to 4.5F	6600 to 7200	17.00	14.100	B·P·P B·P·P	450 450	34000 28000	300 250	2200 10000	34000 155000	440 440	2000 10000	0.06 0.06	5000 2500
4603	Shielded-Grid Beam Triode	Water	7.3 to 7.8F	1120 to 1160	40	10.06	B·P·P	100	40000	90	3000	30000	50	3000	0.09	1500
4605V2	Beam Power Tube	Liquid	0.95F	460 to 530	9.44	11.25	Same as 6952 except for coolant separator									
4612	Triode	Water	1.5F	1800	19.5	23.5	P·A·S	600	16000 ^b	100	8330	16600	475	8330 ^c	0.166	400
4616	Beam Power Tube	Water	0.95F	495	8.93	11.25	B·P·P B·G·P	195 to 600	55000 25000 ^b	80 30	15 2500	3000 25000	425 600	13 2000	0.004 0.06	2000 250
4617	Triode	Water	1.5F	1800	17	24	B·P·P	450	40000	500	25	2500	425	25	0.01	8000
4621	Beam Power Tube	Forced-Air	6.3	3.2	2.13	1.265	Same as 8227 except for shorter radiator									
4622	Ruggedized Cermolox Tube	Conduction	6.3	3.2	1.930	1.119	Same as 7649 except for conduction cylinder									
5893	Pencil Triode	Natural	6.0	0.280	2.297	0.817	P·P·O	—	1750	3	5	5000	3300	1.0	0.001	1.2
5946	Triode	Forced-Air	6.3	3.4	3 ¹³ / ₃₂	1.76	C·P·P	1300	7500	4.5	10	1000	1250	5	0.01	14
6950/2039	Shielded-Grid Beam Triode	Water	7.3 to 7.8F	1120 to 1160	37.24	20.50	P·P·A	200	40000	92	2500	40000	200	2000	0.05	1500
6952	Beam Power Tube	Liquid	0.95F	500	8.93	11.25	B·P·P	174 to 600	55000	80	15	3000	425	13	0.004	2000
7214	Cermolox Tube	Forced-Air	5.5	17.3	3.34	3.75	P·S·P	1215	10000	18	10	1000	1215	10	0.01	65
7649	Ruggedized Cermolox Tube	Forced-Air	6.3	3.2	1.930	1.265	P·S·P	1215	3000	3	10	1000	1215	10	0.01	4.5
7651	Ruggedized Cermolox Tube	Forced-Air	6.3	7.5	2.40	2.09	P·S·P	1215	8000	9	10	1000	1215	10	0.01	39
7835	Triode	Water	3.1 to 4.2F	6600	17	24	B·P·P	300 300	65000 40000	325 300	25 2200	2500 34000	250 250	25 2000	0.006 0.06	10000 5000
8184	Cermolox Tube	Forced-Air	22	12.6	7.24	5.56	P·S·P	500	25000	80	10	2000	2-megawatt, maximum peak power input			
8227	Cermolox Tube	Forced-Air	6.3	3.2	2.52	1.265	P·S·P	1215	7000	6	5	1000	1215	5	0.005	17

CLASS OF SERVICE AS FOLLOWS:

B·G·P — Class B Grid-Pulsed Amplifier Service.
 B·P·P — Class B Plate-Pulsed Amplifier Service.
 C·P·P — Class C Plate-Pulsed Amplifier Service.

P·A·S — Particle Accelerator Service.
 P·P·A — Plate-Pulsed Amplifier Service.
 P·P·O — Plate-Pulsed Oscillator Service.
 P·S·P — Plate-and-Screen-Pulsed Amplifier Service.

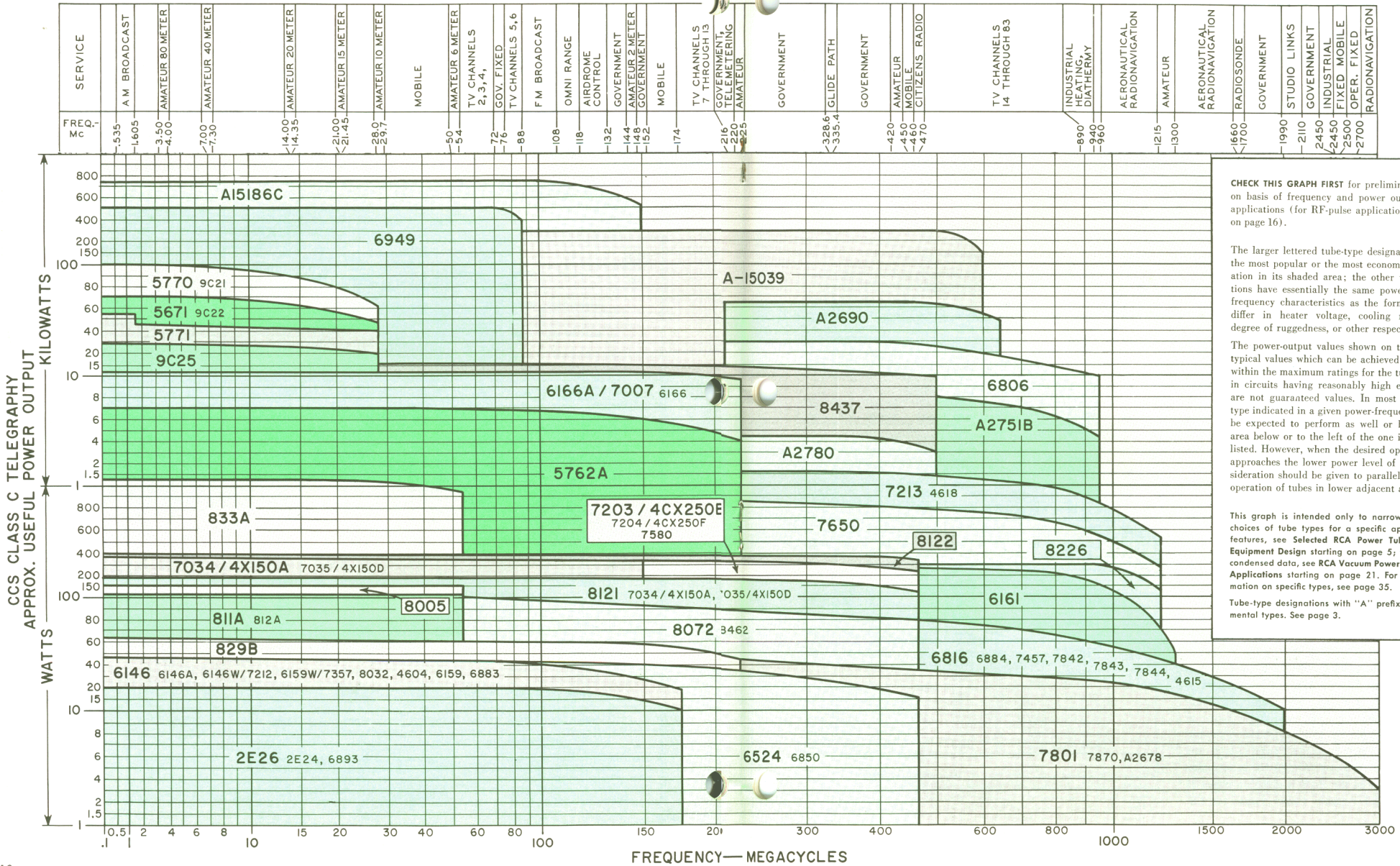
† Unless otherwise specified, all values shown are for Continuous Commercial Service.

^a Per section.

^b DC Plate Voltage.

^c Special Wave form.

RCA CW POWER TUBE QUICK-SELECTION GRAPH



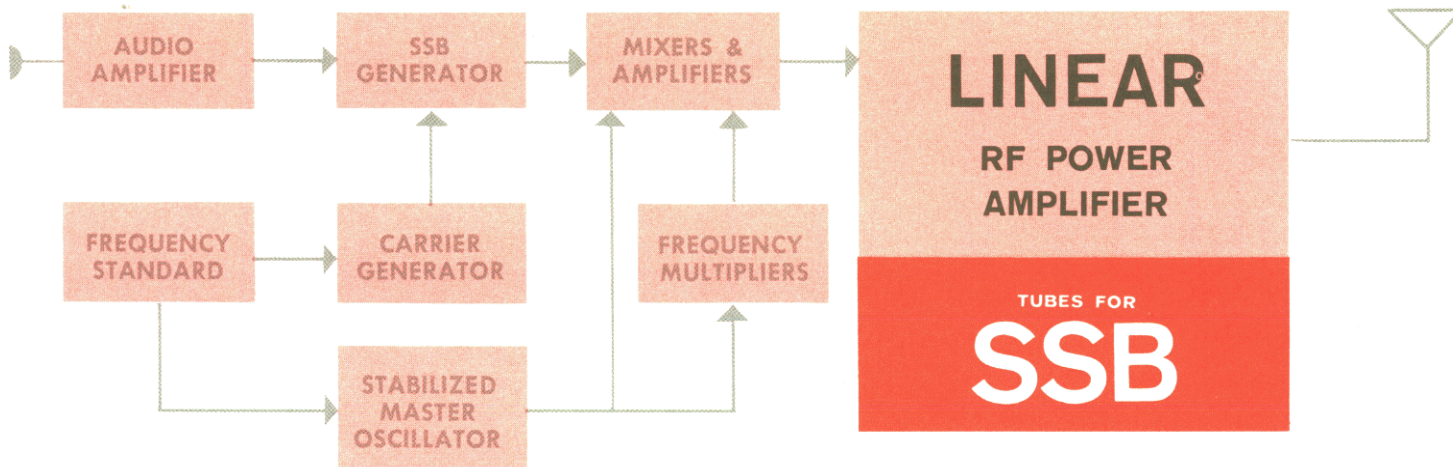
CHECK THIS GRAPH FIRST for preliminary selection on basis of frequency and power output for CW applications (for RF-pulse applications, see graph on page 16).

The larger lettered tube-type designation is either the most popular or the most economical for operation in its shaded area; the other type designations have essentially the same power-output and frequency characteristics as the former, but may differ in heater voltage, cooling requirements, degree of ruggedness, or other respects.

The power-output values shown on the graph are typical values which can be achieved by operation within the maximum ratings for the tube type, and in circuits having reasonably high efficiency, but are not guaranteed values. In most cases a tube type indicated in a given power-frequency area can be expected to perform as well or better in any area below or to the left of the one in which it is listed. However, when the desired operating point approaches the lower power level of an area, consideration should be given to parallel or push-pull operation of tubes in lower adjacent area.

This graph is intended only to narrow the possible choices of tube types for a specific application. For features, see Selected RCA Power Tubes for New-Equipment Design starting on page 5; for additional condensed data, see RCA Vacuum Power Tubes for CW Applications starting on page 21. For further information on specific types, see page 35.

Tube-type designations with "A" prefix are developmental types. See page 3.



RCA offers power tubes for linear rf power amplifiers featuring *fidelity* in amplifying the input signal through linear transfer characteristics, *high efficiency*, and *reliability* of operation.

The beam power tube, with its advantage of high gain and minimum neutralizing requirements, offers the best compromise of linearity and efficiency. The triode, tetrode, pentode, and shielded-grid beam triode can also provide reasonable signal-to-noise ratios for single-sideband operation. The triode is generally used for circuit simplicity and low cost; the shielded-grid beam triode is used exclusively for extremely high power.

Check the chart on the right for the RCA power tubes rated for linear rf amplifier service. Ratings were first established by employing "single-tone" modulation, injecting a single sine-wave tone into the single-sideband generator, and measuring *Maximum-Signal Power Output*; this rating technique provided maximum tube protection, and it was easily duplicated. Ratings are now established to include linearity evaluation by employing "two-tone" modulation, injecting two audio tones of equal amplitude into the single-sideband generator, and measuring *Peak Envelope Power Output* and *Distortion Products Level*. Additional information on the tube types in the chart is given on pages 21 through 25, *RCA Vacuum Power Tubes for CW Applications*.

RCA Type	Description	Typical Single-sideband Operating Conditions ^d					
		Frequency Mc	Plate Volts	Useful Output Watts		Distortion Products Level-db	
				Max. ^e Signal	PEP ^f	Third Order	Fifth Order
811A	Triode	30	1500	—	160	-25	-30
2029	Beam Power Tube	550	6500 9500	—	15000 25000	-27 ^g	-35
6146A	Beam Power Tube	60	750 ^h	60 ^h	—	—	—
6448	Beam Power Tube	550	7000	12000	—	—	—
6806	Beam Power Tube	550	6500 9500	—	15000 25000	-27 ^g	-35
6816	Cermolox Tube	60	850	40	—	—	—
6884	Cermolox Tube	60	850	40	—	—	—
6949	Shielded-Grid Beam Triode	10	18000	600000	—	—	—
7034/ 4X150A	Beam Power Tube	150	2000	290	—	—	—
7035/ 4X150D	Beam Power Tube	150	2000	290	—	—	—
7094	Beam Power Tube	60	2000 ^h	250 ^h	—	—	—
7203/ 4CX250B	Beam Power Tube	30	2000	—	295	-30	-35
7204/ 4CX250F	Beam Power Tube	30	2000	—	295	-30	-35
7213	Cermolox Tube	60	2500	1250	—	—	—
7271	Beam Power Tube	60	1250	—	135 ^h	-26	-33
7457	Ruggedized Cermolox Tube	60	850	40	—	—	—
7580	Beam Power Tube	30	2000	—	400	-21	-29
7650	Ruggedized Cermolox Tube	30	2500	—	680	-31	-36
7842	Ruggedized Cermolox Tube	60	850	40	—	—	—
7843	Cermolox Tube	60	850	40	—	—	—
7844	Cermolox Tube	60	850	40	—	—	—
8072	Beam Power Tube	30	700	—	80	-30	-35
8121	Beam Power Tube	30	1500	—	170	-35	-40
8122	Beam Power Tube	30	2000	—	380	-29	-32

^d Continuous Commercial Service (CCS), Class AB₁, unless otherwise specified

^e Maximum-signal power output with "Single-Tone" modulation

^f Peak envelope power output with "Two-Tone" modulation

^g Third order distortion products level from driver, -35 db.

^h Intermittent Commercial and Amateur Service (ICAS)

RCA VACUUM POWER TUBES FOR CW APPLICATIONS

RCA Type	Description	Cooling	Filament (F) or Heater		Max. Dimensions Inches		Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings†		Typical Operating Conditions†		
			Volts	Amp.	Length	Diam.			Volts	DC Input Watts	Frequency Mc	Approx. Driving Power Watts	Approx. Power Output Watts
2C39A	Triode	Forced-Air	6.3	1	2¾	117/64	C·P C·T·A	— —	600 1000	—	For Existing Equipment		
2C39WA	Triode	Forced-Air	For data, refer to Mil-E-1/778E (Navy) specification.										
2C40	Lighthouse Triode	Natural	6.3	0.75	29/16	1.312	C·T·O	3370	500	—	For Existing Equipment See 4037 for New Equipment		
2C40A	Lighthouse Triode	Natural	6.3	0.75	29/16	1.312	C·T·O	3370	500	—	For Existing Equipment See 4037 for New Equipment		
2C43	Lighthouse Triode	Natural	6.3	0.9	2.6875	1.312	C·T·O	1500	500	—	For Existing Equipment		
2E24	Quick-Heating Beam Power Tube	Natural	6.3F	0.65	321/32	15/16	• C·P • C·T·A	125 125	500 600	27 40	— 125	0.16 0.21	18 27
2E26	Beam Power Tube	Natural	6.3	0.8	321/32	15/16	• AB ₂ • C·P • C·T·F	— 125 125	750 500 600	37.5 27 40	— — 125	0.36 0.15 0.17	54 18 27
4-125A/ 4D21	Beam Power Tube	Forced-Air	5F	6.5	511/16	27/8	C·P C·T·F	120 120	2500 3000	— —	For Existing Equipment		
4-250A/ 5D22	Beam Power Tube	Forced-Air	5F	14.5	63/8	39/16	AB ₂ C·P C·T·F	— 75 75	4000 3200 4000	— — —	For Existing Equipment		
4-400A	Beam Power Tube	Forced-Air	5F	14.5	63/8	39/16	AB ₂ C·P C·T·F	— 110 110	4000 3200 4000	— — —	For Existing Equipment		
4E27/ 8001	Beam Power Tube	Natural	5F	7.5	63/16	2¾	C·T·A	75	4000	300	For Existing Equipment		
4E27A/ 5-125B	Beam Power Tube	Natural	5F	7.5	63/16	2¾	C·T·A	75	4000	—	For Existing Equipment		
4X500A	Beam Power Tube	Forced-Air	5F	13.5	4¾	25/8	C·T·F	120	4000	—	For Existing Equipment		
8D21	Twin Tetrode	Water	3.2F	125	129/32	5¾	■ C·G·T	300	6000	10000	216	300 to 500	5300
9C21	Triode	Water	19.5F	415	24½	9½	B C·P C·T·A	— 15 15	15000 12500 17000	90000 50000 150000	— — —	150 1570 1800	61000 38000 100000
9C22	Triode	Forced-Air	19.5F	415	25	8½ ⁱ	C·T·A	5	17000	100000	—	1450	65000
9C25	Triode	Forced-Air	6F	285	173/8	71/8 ⁱ	B C·P C·T·A	— 30 30	11500 9000 11500	40000 26000 40000	— — —	1500 3000 3750	50000 18000 32500
207	Triode	Water	22F	52	20¼ ^j	615/32 ⁱ	C·T·A	1.6	15000	30000	—	235	15000
801A	Triode	Natural	7.5F	1.25	53/8	21/16	C·T·A	60	600	42	—	4	25
802	Pentode	Natural	6.3	0.9	5¾	21/16	• C·T·A	30	600	33	—	0.3	23
805	Triode	Natural	10F	3.25	8½	25/16	B C·P C·T·A	— 30 30	1500 1250 1500	315 220 315	— — —	6 16 8.5	300 140 215
807	Beam Power Tube	Natural	6.3	0.9	5¾	21/16	• AB ₂ • C·P • C·T·F	— 60 60	750 600 750	90 60 75	— 60 60	0.2 0.4 0.3	120 44 54
809	Triode	Natural	6.3F	2.5	69/16	27/16	• B • C·P • C·T·A	— 60 60	1000 750 1000	100 75 100	— — —	2.7 4.3 3.8	145 55 75
810	Triode	Natural	10F	4.5	8¾	2¼ ⁱ	• B • C·P • C·T·A	— 30 30	2750 2000 2500	510 500 750	— — —	13 35 19	725 380 575
811A	Triode	Natural	6.3F	4	615/32	27/16	• B • C·P • C·T·A	— 30 30	1500 1250 1500	235 175 260	— — —	6 10 7.1	310 135 200
812A	Triode	Natural	6.3F	4	615/32	27/16	• B • C·P • C·T·A	— 30 30	1500 1250 1500	235 175 260	— — —	5 7.6 6.5	340 130 190
813	Beam Power Tube	Natural	10F	5	7½	29/16	• AB ₁ • C·P • C·T·A	— 30 30	2500 2000 2250	450 400 500	— — —	0 4.3 4	490 300 375
814	Beam Power Tube	Natural	10F	3.25	711/16	21/16	• C·P • C·T·A	30 30	1250 1500	180 225	— —	2 1.5	130 160

For footnotes, see page 25.

RCA VACUUM POWER TUBES FOR CW APPLICATIONS

RCA Type	Description	Cooling	Filament (F) or Heater		Max. Dimensions Inches		Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings†		Typical Operating Conditions‡		
			Volts	Amp.	Length	Diam.			Volts	DC Input Watts	Frequency Mc	Approx. Driving Power Watts	Approx. Power Output Watts
815	Twin Beam Power Tube	Natural	6.3 12.6	1.6 0.8	4 ⁹ / ₁₆	1 ³ / ₁₆ ⁱ	• C-P • C-T-A	125 125	400 500	60 75	— —	0.16 0.18	45 56
827R	Beam Power Tube	Forced-Air	7.5F	25	6 ³ / ₈ ⁱ	4 ¹ / ₁₆	C-P C-T-F	110 110	3000 3500	1200 1500	— —	68 50	825 1050
828	Beam Power Tube	Natural	10F	3.25	7 ¹ / ₁₆	2 ¹ / ₁₆	• AB ₁ • C-P • C-T-A	— 30 30	2000 1250 1500	270 200 270	— — —	0 2.7 2.2	385 150 200
829B	Twin Beam Power Tube	Natural	6.3 12.6	2.25 1.125	4 ⁵ / ₁₆	2 ³ / ₈	AB ₁ • C-P • C-T-A	— 200 200	750 600 750	100 90 120	— — —	0 0.5 0.4	44 70 90
830B	Triode	Natural	10F	2	6 ¹ / ₁₆	2 ¹ / ₁₆	C-T-A	15	1000	150	—	7	90
832A	Twin Beam Power Tube	Natural	6.3 12.6	1.6 0.8	3 ⁵ / ₁₆	2 ⁵ / ₁₆	• C-P • C-T-A	200 200	600 750	36 50	— —	0.21 0.24	26 35
833A	Triode	Natural	10F	10	8 ¹³ / ₁₆	4 ¹⁹ / ₃₂	• B • C-P • C-T-A	— 30 30	3300 3000 3300	1300 1000 1500	— — —	30 26 25	1900 800 1150
		Forced-Air	10F	10	8 ¹³ / ₁₆	4 ¹⁹ / ₃₂	• B • C-P • C-T-A	— 20 20	4000 4000 4000	1800 1800 2000	— — —	38 42 35	2700 1500 1600
834	Triode	Natural	7.5F	3.1	6 ¹ / ₁₆	2 ¹ / ₁₆	C-P C-T-A	100 100	1000 1250	100 125	— —	6.5 4.5	58 75
837	Pentode	Natural	12.6	0.7	5 ³ / ₄	2 ¹ / ₁₆	C-P C-T-A	20 20	400 500	20 32	— —	0.3 0.4	11 22
845	Triode	Natural	10F	3.25	7 ⁷ / ₈	2 ⁵ / ₁₆	AB ₁	—	1250	150	—	—	115
860	Tetrode	Natural	10F	3.25	8 ³ / ₄ ⁱ	4 ¹ / ₄ ^{iv}	C-T-A	30	3000	300	—	7	165
880	Triode	Water	12.6F	320	11 ³ / ₈	7	B	—	10500	40000	—	540	46000
							C-P	25	10500	36000	—	1100	27000
							C-T-A	25	10500	60000	1.5	1500	40000
889A	Triode	Water	11F	125	10 ¹ / ₁₆	3 ⁵ / ₈	B	—	8500	12000	—	150	15000
							C-P	50	6000	6000	—	140	4000
							C-T-A	50	8500	16000	—	400	10000
889RA	Triode	Forced-Air	11F	125	11 ⁷ / ₈	5 ¹⁵ / ₃₂ ⁱ	B	—	8500	12000	—	150	15000
							C-P	40	6000	6000	—	140	4000
							C-T-A	40	8500	16000	—	400	10000
891	Triode	Water	22F	60	20 ⁷ / ₈	6 ¹⁵ / ₃₂ ⁱ	B	—	15000	20000	—	245	22000
							C-T-A	1.6	12000	18000	—	375	10000
891R	Triode	Forced-Air	22F	60	22	6 ¹⁵ / ₃₂ ⁱ	B	—	10000	10500	—	50	10000
							C-T-A	1.6	10000	15000	—	375	10000
892	Triode	Water	22F	60	20 ⁷ / ₈	6 ¹⁵ / ₃₂ ⁱ	B	—	15000	20000	—	160	22000
							C-P	1.6	10000	10000	—	460	6000
							C-T-A	1.6	15000	30000	—	565	14000
892R	Triode	Forced-Air	22F	60	22	6 ¹⁵ / ₃₂ ⁱ	B	—	12500	12000	—	84	10500
							C-P	1.6	10000	10000	—	430	5000
							C-T-A	1.6	12500	18000	—	495	10000
1624	Beam Power Tube	Natural	2.5F	2	5 ³ / ₄	2 ¹ / ₁₆	C-T-A	60	600	54	—	0.43	35
1625	Beam Power Tube	Natural	12.6	0.45	5 ³ / ₄	2 ¹ / ₁₆	Same as 807 except for heater rating, base, and dimensions.						
2029	Beam Power Tube	Liquid	2-Section 1.35F ^a 1000 ^a		8.25	11.38	C-P C-T-F	1000 1000	5500 9000	25000 60000	400 400	200 ^k 300 ^k	10000 ^l 25000 ^l
4037	Pencil Triode	Natural	6.3	0.145	3.125	1.312	C-T-O C-T-A	2000 2000	360 360	9 9	2000 500	— 2 ^k	0.45 ^l 5 ^l
4604	Quick-Heating Beam Power Tube	Natural	6.3F	0.65	3 ¹³ / ₁₆	1 ² / ₃₂	• C-T-F	60	750	90	175	4.5	30
4615	Ruggedized Cermolox Tube	Forced-Air	6.3	3.2	1.930	1.327	Same as 7457 except for radiator type.						
4618	Cermolox Tube	Forced-Air	Same as 7213 except for omitted grid-No. 2-to-plate shield.										
5556	Triode	Natural	4.5F	1.1	4 ¹ / ₂	1 ⁵ / ₈	A ₁ C-P C-T-F	— 6 6	350 350 350	— 14 14	For Existing Equipment		
5671	Triode	Forced-Air	11F	285	25	8.5 ⁱ	B C-P C-T-A	— 10 10	15000 12500 15000	90000 55000 100000	— 1.6 1.6	600 1960 2040	100000 40000 70000

For footnotes, see page 25.

RCA VACUUM POWER TUBES FOR CW APPLICATIONS

RCA Type	Description	Cooling	Filament (F) or Heater		Max. Dimensions Inches		Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings†		Typical Operating Conditions†		
			Volts	Amp.	Length	Diam.			Volts	DC Input Watts	Frequency Mc	Approx. Driving Power Watts	Approx. Power Output Watts
5675	Pencil Triode	Natural	6.3	0.135	2.252	0.817	C-T-O	1700	300	5	1700	—	0.475 ^l
5713	Triode	Forced-Air	3.3	11.5	4 ⁷ / ₈	2 ¹ / ₁₆	C-T-A	220	1500	450	220	65	325
5762/ 7C24	Triode	Forced-Air	12.6F	29	7 ¹ / ₈ ⁱ	4 ¹¹ / ₁₆	B C-P C-T-F	— 30 30	6200 5000 6200	8700 5000 8700	— 30 30	195 720 1225	8800 4200 7000
5762A	Triode	Forced-Air	12.6F	29	7 ¹ / ₈ ⁱ	4 ¹¹ / ₁₆	■ B-T C-P C-T-F	216 30 30	4500 5000 6200	9000 5000 8700	216 30 30	983 720 1225	6350 4200 7000
5770	Triode	Water	11F	285	24 ¹ / ₂	9 ¹ / ₂	B C-P C-T-A	— 20 20	15000 12500 17000	90000 60000 150000	— — —	688 2160 11200	117000 45000 114000
5771	Triode	Water	7.5F	170	11 ⁵ / ₁₆	7	B C-P C-T-A	— 25 25	12500 10000 12500	45000 40000 60000	— — 25	430 1010 1050	55000 29000 44000
5786	Triode	Forced-Air	11F	12.5	9 ⁵ / ₈	2.895	B C-P C-T-F	— 160 160	4000 2500 3000	1500 1000 1500	— — —	30 75 36	1640 810 1000
5876	Pencil Triode	Natural	6.3	0.135	2.252	0.817	C-M-D C-T-O C-T-A	1700 1700 1700	330 360 360	7.5 9 9	960 3000 500	2 ^k — 2 ^k	2 ^l 0.1 ^l 5 ^l
5876A	Pencil Triode	Natural	Same as 5876 except for additional environmental requirements.										
5893	Pencil Triode	Natural	6	0.28	2.297	0.817	C-M-D C-T-O C-T-A	2000 2000 2000	260 320 320	8.5 11 11	1000 500 1000	3.2 ^k — 1.9 ^k	2.75 ^l 5 ^l 5.5 ^l
6146	Beam Power Tube	Natural	6.3	1.25	3 ¹³ / ₁₆	1 ²³ / ₃₂	• AB ₂ • C-P • C-T-F	— 60 60	750 600 750	90 67.5 90	60 60 60	0.4 0.4 0.2	131 52 70
6146A	Beam Power Tube	Natural	6.3	1.25	3 ¹³ / ₁₆	1 ²¹ / ₃₂	Same as 6146 except for base controlled zero-bias plate current and controlled power output at reduced heater voltage.						
6146W/ 7212	Ruggedized Beam Power Tube	Natural	6.3	1.25	3 ¹³ / ₁₆	1 ²¹ / ₃₂	• AB ₂ • C-P • C-T-F	— 60 60	750 600 750	90 67.5 90	60 60 60	0.4 0.4 0.2	131 52 70
6155	Beam Power Tube	Forced-Air	5F	6.5	5 ³ / ₆₄	2 ¹ / ₁₆	C-P C-T-F	120 120	2500 3000	415 625	For Existing Equipment		
6156	Beam Power Tube	Forced-Air	5F	14.1	5 ³¹ / ₃₂	3 ³ / ₆₄	AB ₂ C-P C-T-F	— 75 75	4000 3200 4000	1000 825 1250	For Existing Equipment		
6159	Beam Power Tube	Natural	26.5	0.3	Same as 6146 except for heater rating.								
6159W/ 7357	Ruggedized Beam Power Tube	Natural	26.5	0.3	Same as 6146W/7212 except for heater rating.								
6161	Triode	Forced-Air	6.3	3.4	3 ¹³ / ₃₂	1.76	■ B-T C-M-D C-T-F	900 900 900	1000 1600 1600	500 400 400	900 900 900	75 ^k 140 ^k 80 ^k	230 ^l 140 ^l 180 ^l
6166	Beam Power Tube	Forced-Air	5F	168	11.63	6.38	▲ B-T C-P C-T-F	216 60 60	6000 5000 6900	22000 10000 18000	216 60 60	800 ^k 180 ^k 75 ^k	12000 ^l 5500 ^l 11600 ^l
6166A/ 7007	Beam Power Tube	Forced-Air	5F	168	11.50	6.38	▲ B-T C-P C-T-F	220 220 220	7500 5500 7500	24000 10000 20000	216 60 216	1500 ^k 125 ^k 750 ^k	14000 ^l 6000 ^l 10000 ^l
6181	Beam Power Tube	Forced-Air	120 Max.	1.6	7 ¹ / ₄	5 ¹ / ₃₂	◆ B-T C-P C-T-F	900 900 900	2000 1600 2000	3500 1650 2500	900 400 900	200 ^k 250 ^k 150 ^k	1200 ^l 950 ^l 600 ^l
6263A	Pencil Triode	Natural	6	0.28	2.63	1.01	C-P C-T-O C-T-A	500 500 500	275 330 330	9 13 13	500 1700 500	2 ^k — 2.2 ^k	6.7 ^l 0.9 ^l 7 ^l
6264A	Pencil Triode	Natural	6	0.28	2.63	1.01	C-M-T C-T-O C-T-A	500 500 500	300 330 330	9.9 13 13	510 1700 500	2.75 ^k — 2.4 ^k	2.1 ^l 1 ^l 7.5 ^l
6448	Beam Power Tube	Liquid	2-Section 1.35F ^a 1000 ^a		8.02	11.38	△ B-T C-P C-T-F	225 to 1000 225 to 1000 225 to 1000	7000 4500 8500	49000 20250 45500	800 900 900	1000 ^k 1000 ^k 800 ^k	12000 ^l 4500 ^l 11000 ^l
6524	Twin Beam Power Tube	Natural	6.3	1.25	3 ⁹ / ₁₆	1 ¹¹ / ₁₆	• C-M-T • C-P • C-T-F	100 100 100	400 500 600	45 55 85	462 462 462	4 ^k 7 ^k 7 ^k	8.5 ^l 12 ^l 20 ^l

For footnotes, see page 25.

RCA VACUUM POWER TUBES FOR CW APPLICATIONS

RCA Type	Description	Cooling	Filament (F) or Heater		Max. Dimensions Inches		Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings†			Typical Operating Conditions†		
			Volts	Amp.	Length	Diam.			Volts	DC Input Watts	Frequency Mc	Approx. Driving Power Watts	Approx. Power Output Watts	
6562/5794A	Integral-Cavity Pencil Triode	Natural	6	0.16	3.256 ^j	0.865 ⁱ	C·T·O	1692	120	4	1680	—	0.6 ^l	
6806	Beam Power Tube	Water	2-Section 1.35F ^a 1000 ^a		8.02	11.38	△ B·T C·P C·T·F	1000 1000 1000	9000 5500 9000	70000 25000 60000	800 400 900	1000 ^k 300 ^k 750 ^k	19000 ^l 10000 ^l 13500 ^l	
6816	Cermolox Tube	Forced-Air	6.3	2.1	1.930	1.265	AB ₂ C·P C·T·F	— 1215 1215	1000 800 1000	180 120 180	— 400 1215	0.3 ^k 3 ^k 5 ^k	140 ^l 45 ^l 40 ^l	
6850	Twin Beam Power Tube	Natural	12.6	0.625	Same as 6524 except for heater rating.									
6883	Beam Power Tube	Natural	12.6	0.625	3 ¹³ / ₁₆	1 ¹ / ₃₂	Same as 6146 except for heater rating, base and dimensions.							
6884	Cermolox Tube	Forced-Air	26.5	0.52	Same as 6816 except for heater rating.									
6893	Beam Power Tube	Natural	12.6	0.4	Same as 2E26 except for heater rating.									
6897	Lighthouse Triode	Forced-Air	6.3	1.03	2 ³ / ₄	1 ¹⁷ / ₆₄	C·T·O	2500	1000	—	For Existing Equipment			
6949	Shielded-Grid Beam-Triode	Water	7.3 to 7.8F	1120 to 1160	40	10.06	C·T·F	75	20000	1000000	0.425	2000	500000	
7034/4X150A	Beam Power Tube	Forced-Air	6	2.6	2.404	1.640	AB ₂ C·P C·T·F	— 150 150	2000 1600 2000	— — —	150 150 150	0.2 3 2.5	630 230 370	
7035/4X150D	Beam Power Tube	Forced-Air	26.5	0.58	Same as 7034/4X150A except for heater rating.									
7094	Beam Power Tube	Forced-Air	6.3	2.85	5	2.56	• AB ₁ • C·P • C·T·F	— 60 60	2000 1200 1500	400 335 500	— 60 60	0 5 ^k 4 ^k	560 240 ^l 340 ^l	
7203/4CX250B	Beam Power Tube	Forced-Air	6	2.6	2.464	1.640	§ B·T C·P C·T·F	216 500 500	2000 1500 2000	— — —	216 175 500	1.2 0.7 18 ^k	440 235 250 ^l	
7204/4CX250F	Beam Power Tube	Forced-Air	26.5	0.58	Same as 7203/4CX250B except for heater rating.									
7213	Cermolox Tube	Forced-Air	5.5	17.3	3.34	3.75	C·P C·T·F	1215 1215	2000 2500	1700 2500	600 600	55 ^k 75 ^k	800 ^l 1350 ^l	
7271	Beam Power Tube	Forced-Air	11.8 to 14.85	1.25 at 13.5 volts	4.73	2.06	• AB ₁ • C·P • C·T·F	— 60 60	1350 1100 1350	250 210 315	— 60 60	0 4 ^k 4 ^k	270 130 ^l 225 ^l	
7457	Ruggedized Cermolox Tube	Forced-Air	6.3	3.2	1.930	1.265	AB ₂ C·P C·T·F	— 1215 1215	1000 800 1000	180 120 180	— 400 1215	0.3 3 ^k 5 ^k	140 45 ^l 40 ^l	
7533	Integral-Cavity Pencil Triode	Natural	6	0.16	3.23 ^j	0.865 ⁱ	C·T·O	1700	130 ^m	4	1680	—	0.575 ^l	
7552	Pencil Triode	Natural	6.3	0.225	1.62	0.557	RF	1500	250	—	1100	—	16db ⁿ	
7553	Pencil Triode	Natural	6.3	0.225	1.62	0.557	RF	1500	250	—	1100	—	20db ^p	
7554	Pencil Triode	Natural	6.3	0.225	1.62	0.557	C·M·D C·M·T C·T·O C·T·A	2000 2000 5000 3000	250 250 250 250	— — — —	1000 1000 5000 1000	0.8 ^k 0.6 ^k — 0.2 ^k	0.9 ^l 0.4 ^l — 0.03 ^l 1.4 ^l	
7580	Beam Power Tube	Forced-Air	6	2.6	2.464	1.640	A·M·T S·S·B	500 500	2000 2000	— —	500 500	3 ^k 12 ^k	90 ^l 360 ^l	
7650	Ruggedized Cermolox Tube	Forced-Air	6.3	7.5	2.40	2.09	AB ₁ C·P C·T·F	— 1215 1215	3000 2000 2500	1500 1000 1250	— 400 400	0 35 ^k 35 ^k	1600 600 ^l 800 ^l	
7801	Cermolox Tube	Conduction	12.6	0.5	1.195	0.740	C·P C·T·F	— —	750 750	45 52.5	3000 3000 1200 400	1 ^k 1 ^k 1 ^k 1 ^k	1.7 ^l 3.2 ^l 15 ^l 27 ^l	
7842	Ruggedized Cermolox Tube	Conduction	6.3	3.2	Same as 7844 except for heater rating.									
7843	Cermolox Tube	Conduction	26.5	0.52	Same as 7844 except for heater rating.									
7844	Cermolox Tube	Conduction	6.3	2.1	1.930	1.119	AB ₂ C·P C·T·F	— 1215 1215	1000 800 1000	180 120 180	— 400 1215	0.3 3 ^k 5 ^k	140 45 ^l 40 ^l	
7870	Cermolox Tube	Conduction	6.3	1	Same as 7801 except for heater rating.									
8000	Triode	Natural	10F	4.5	8 ³ / ₄	2 ¹ / ₄ ⁱ	• B • C·P • C·T·A	— 30 30	2750 2000 2500	510 500 750	— — —	7.9 20 18	725 380 575	

For footnotes, see page 25.

RCA VACUUM POWER TUBES FOR CW APPLICATIONS

RCA Type	Description	Cooling	Filament (F) or Heater		Max. Dimensions Inches		Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings†		Typical Operating Conditions‡		
			Volts	Amp.	Length	Diam.			Volts	DC Input Watts	Frequency Mc	Approx. Driving Power Watts	Approx. Power Output Watts
8005	Triode	Natural	10F	3.25	6 ¹¹ / ₁₆	2 ⁷ / ₁₆	• B • C·P • C·T·A	— 60 60	1500 1250 1500	250 240 300	— — —	5.5 9 7.5	330 170 220
8032	Beam Power Tube	Forced-Air	13.5	0.585	3 ¹³ / ₁₆	1 ²¹ / ₃₂	Same as 6146 except for heater rating.						
8072	Beam Power Tube	Conduction	12 to 15	1.3 at 13.5 volts	2.26	1.44	C·T·F	500	2200	660	50 470	1.2 ^k 5 ^k	110 ^l 85 ^l
8121	Beam Power Tube	Forced-Air	13.5	1.3	2.20	1.48	C·T·F	500	2200	660	50 470	2 ^k 5 ^k	275 ^l 235 ^l
8122	Beam Power Tube	Forced-Air	13.5	1.3	2.26	1.64	C·T·F	500	2200	660	50 470	2 ^k 5 ^k	375 ^l 300 ^l
8165/ 4-65A	Beam Power Tube	Forced-Air	6F	3.5	4 ³ / ₁₆	2 ³ / ₈	AB ₁ C·P C·T·F	— 150 150	3000 2500 3000	— — —	For Existing Equipment		
8166/ 4-1000A	Beam Power Tube	Forced-Air	7.5F	2 ¹	9 ⁵ / ₈	5 ¹ / ₄	C·T·F	110	6000	—	For Existing Equipment		
8168/ 4CX1000A	Beam Power Tube	Forced-Air	6	9.5 to 11.5	4.75	3.36	S·S·B	30	3000	—	For Existing Equipment		
8170/ 4CX5000A	Beam Power Tube	Forced-Air	7.5	7 ³ to 7 ⁸	9.125	4.938	C·T·A	110	6500	—	For Existing Equipment		
8226	Cermolox Tube	Forced-Air	6.3	3.2	2.71	1.64	C·T·F	1215	2500	625	1215 400	10 ^k 5 ^k	105 ^l 340 ^l
8239/ 3X3000F1	Triode	Forced-Air	7.5	49 to 54	10.539 ^j	4.156	AB ₁	—	6000	—	For Existing Equipment		
8437	Cermolox Tube	Forced-Air	8.5F	88	6.19	6.24	C·T·F	500	7000	28000	400	1000 ^k	10000 ^l
8462	Quick-Heating Beam Power Tube	Conduction	2.4F	4	Same as 8072 except for heater rating.								

FOOTNOTES:

* CLASS OF SERVICE AS FOLLOWS:

- A₁ — Class A₁ AF Modulator Service.
- AB₁ — Class AB₁ Push-Pull AF Modulator Service.
- AB₂ — Class AB₂ Push-Pull AF Modulator Service.
- A·M·T — Linear RF Power Amplifier — AM Telephone Service.
- B — Class B Push-Pull AF Modulator Service.
- B·T — Class B Television Service.
- C·G·T — Class C Grid-Modulated Television Service.
- C·M·D — Class C Frequency-Doubler Service.
- C·M·T — Class C Frequency-Tripler Service.
- C·P — Class C Plate-Modulated Telephone Service.
- C·T·A — Class C Telegraph Service; amplifier.
- C·T·F — Class C Telegraph or FM Telephone Service.
- C·T·O — Class C Telegraph Service; oscillator.
- RF — Class A, RF Amplifier Service.
- S·S·B — Linear RF Power Amplifier, Single-Sideband, Suppressed-Carrier Service.

In the Push-Pull Classes of Service (AB₁, AB₂, and B), the values shown under Maximum Plate Ratings are for one tube; and, except for twin-unit types, those under Typical Operating Conditions are for two tubes. In all other Classes of Service, the values shown are for one tube unless otherwise stated.

† Unless otherwise specified, all values shown are for Continuous Commercial Service.

• Intermittent Commercial and Amateur Service.

■ Typical operating data shown for this service are for synchronizing-level conditions per tube for a bandwidth of 6 Mc.

▲ Typical operating data shown for this service are for synchronizing-level conditions per tube for a bandwidth of 8.5 Mc.

◆ Typical operating data shown for this service are for synchronizing-level conditions per tube for a bandwidth of 8 Mc.

△ Typical operating data shown for this service are for synchronizing-level conditions per tube for a bandwidth of 7 Mc.

§ Typical operating data shown for this service are for synchronizing-level conditions per tube for a bandwidth of 5 Mc.

^a Per section.

ⁱ Maximum radius.

^j Excluding flexible leads.

^k Driver power output.

^l Useful power output.

^m Plate-to-grid volts.

ⁿ Minimum power gain for 10 Mc bandwidth and 12.5 db maximum noise figure.

^p Minimum power gain for 4 Mc bandwidth and 11.5 db maximum noise figure.

^l Design-center values.

RCA HARD-TUBE MODULATORS

RCA Type	Description	Cooling	Heater		Max. Dimensions Inches		Max. Plate Ratings†				Typical Operating Conditions†		
			Volts	Amp.	Length	Diam.	DC Plate Volts	Peak Plate Amp.‡	Duty Factors§	Time Interval μsec.	Pulse Duration μsec.	Duty Factor	Approx. Peak Power Output Kw
3E29	Twin Beam Power Tube	Natural	6.3	2.25	4 ⁵ / ₁₆	2 ³ / ₈	5000	10	Up to 0.001	1200	1.2	0.001	40
			12.6	1.125				5		0.004			
4610	Twin Triode	Natural	6.3	2.25	4 ⁵ / ₁₆	2 ³ / ₈	3500	3	Up to 0.003	10000	100	0.01	3.4
			12.6	1.125				1		0.04			
6293	Beam Power Tube	Natural	6.3	1.25	3 ¹³ / ₁₆	1 ²³ / ₃₂	3500	0.2	1	10000			

† Unless otherwise specified, all values shown are for Continuous Commercial Service.

‡ Points taken from Plate Current Versus Duty Factor rating chart.

RCA VACUUM GAUGE TUBES

RCA Type	Description	Filament (F) or Heater		Max. Dimension Inches		Pressure Range	Typical Values
		Volts	Amp.	Length	Diam.	Torr	
1946	Thermocouple Type	1	0.070	6 ¹ / ₄	1 ¹¹ / ₁₆	1 to 10 ⁻⁴	Thermocouple Resistance 5 ohms, (Approx.)
1947	Pirani Type	10F	0.070 to 0.100	7 ⁹ / ₁₆	1 ³ / ₁₆	0.5 to 10 ⁻²	Resistance between Filament Terminals for a vacuum of better than 3 × 10 ⁻³ torr; 135.8 ohms.
1949	Ionization Type	5F	3.3	11 ¹ / ₂	2 ³ / ₁₆ ⁱ	10 ⁻³ to 10 ⁻⁷	DC Ion Collector Volts, -22.5; DC Grid Volts, +160; Grid Current, 10 ma; Sensitivity 140 μa/micron.

ⁱ Maximum radius.

RCA VACUUM POWER TUBES FOR SPECIAL APPLICATIONS

RCA Type	Description	Cooling	Heater		Max. Dimensions Inches		Class of Service	Maximum Ratings
			Volts	Amp.	Length	Diam.		
2K26	Klystron	Natural	6.3	0.44	3.5	1 ⁵⁵ / ₆₄ ⁱ	CW Oscillator	DC Resonator Volts, 330; DC Reflector Voltage: Positive Value, 0 Volts; Negative Value, 350 Volts; DC Resonator Current, 35 ma; Typical Power Output at 6600 Mc, 100 mw.
3C33	Twin Triode	Natural	12.6	1.125	3 ¹¹ / ₁₆	2 ³ / ₈	Voltage Regulator	Max. Values per Unit: Peak Plate Volts, ±2000; Peak Cathode ma, 500; Average Plate ma, 120; Plate Dissipation, 15 watts.
4600A	Cermolox Tube	Forced-Air	5.5	17.3	3.405	3.76	Voltage Regulator	Max. Values: DC Plate Volts, 3500; DC Plate Amperes, 1; Plate Dissipation, 1750 watts; Grid-Circuit Resistance, 30000 ohms.
4614	Cermolox Tube	Forced-Air	6.3	7.5	2.40	2.09	Voltage Regulator	Max. Values: DC Plate Volts, 2500; DC Plate Amperes, 0.5; Dissipation, 400 watts; Grid-Circuit Resistance, 15000 ohms.
6173	Pencil Diode	Natural	6.3	0.135	2.227	0.320	Pulse Detection	Max. Values: Peak Inverse Plate Volts, 1000; Peak Pulse Plate Volts, 150; Peak Pulse Plate Amperes, 1; Average Plate ma, 1.

ⁱ Maximum radius.

RCA Type	Max. Dimensions Inches		Class of Service	RMS Supply Volts	Maximum Anode Ratings						Maximum Ignitor Ratings					Minimum Ignition Requirements		
	Rigid Length	Diam.			Kva Demand	Peak Inverse or Forward Volts	Peak Amperes		Average Amperes		Peak Volts		Amperes			Peak Volts	Peak Amperes	Starting Time μ sec. ^r
							Welder Service	Rectifier Service	Welder Service	Rectifier Service	Neg.	Pos.	Peak	Ave. ^q	RMS			
5550	9 ¹³ / ₁₆	2 ¹ / ₂	Resistance Welding Control ^s	250	150	—	846	—	4.86	—	5	900	100	1	10	200	30	100
				600	150	—	354	—	4.86	—								
5551A	13	2 ⁷ / ₈ ⁱ	Resistance Welding Control ^s	250	200	—	1130	—	56	—	5	Equal to anode volts	100	1	10	200	30	100
				600	200	—	466	—	56	—								
			250	600	—	3400	—	30.2	—									
			600	600	—	1410	—	30.2	—									
Intermittent Rectifier and Frequency- Changer Welding Service	—	—	500	—	700	—	40	—										
	—	—	1200	—	600	—	22.5	—										
5552A	14	3 ⁵ / ₈ ⁱ	Resistance Welding Control ^s	250	400	—	2260	—	140	—	5	Equal to anode volts	100	1	10	200	30	100
				600	400	—	945	—	140	—								
			250	1200	—	6800	—	75.6	—									
			600	1200	—	2830	—	75.6	—									
Intermittent Rectifier Service	—	—	500	—	1600	—	100	—										
5553B	19 ¹ / ₄	4 ¹¹ / ₁₆ ⁱ	Resistance Welding Control ^s	250	800	—	4530	—	355	—	5	Equal to anode volts	100	1	10	200	30	100
				600	800	—	1890	—	355	—								
			250	2400	—	13600	—	192	—									
			600	2400	—	5660	—	192	—									
Frequency- Changer Welding Service	—	—	600	—	4000	—	190	—										
	—	—	1200	—	3000	—	140	—										
	—	—	1500	—	2400	—	112	—										

ⁱ Maximum radius.

^r At specified peak-voltage or peak-current value.

^q Over any interval of 5 seconds max.

^s For two tubes in inverse-parallel circuit.



RCA Type	Filament (F) or Heater		Max. Dimensions Inches		Tube Voltage Drop	Max. Plate or Anode Ratings — For Supply Frequency of 60 cps [‡]					Operating Conditions Single-Phase Full-Wave [‡] (With 2 Tubes)			
	Volts	Amp.	Length	Diam.		Temp. Range Condensed Mercury °C	Peak Inverse Volts	Peak Amperes	Average Amperes	Fault Amperes	Peak Inverse Volts	Max. AC Plate-to-Plate Supply Volts	Approx. DC Output Volts To Filter	Max. DC Output Amperes
MERCURY-VAPOR TYPES — Half-Wave Types (except as noted)														
575A	5F	10	11 $\frac{1}{8}$	3 $\frac{1}{8}$	10	20 to 50 20 to 60 20 to 50 20 to 60	15000 10000 15000 10000	6 7 10 10	1.5 1.75 2.5 2.5	100 100 100 100	15000 10000 — —	10600 7000 — —	4800 3200 — —	3 3.5 — —
604/7014[*]	2.5F	11.5	7 $\frac{1}{2}$	2 $\frac{1}{16}$	10	0 to 90	900	10	2.5	150	For Existing Equipment			
615/7018	2.5F	7	6 $\frac{3}{8}$	2 $\frac{1}{16}$	12	35 to 80	2000	10	2.5	250	For Existing Equipment			
635/7019	2.5F	18	9 $\frac{1}{2}$	2 $\frac{1}{16}$	9	-40 to 100	1000	77	6.4	770	For Existing Equipment			
635L/7020	2.5F	18	9 $\frac{1}{2}$	2 $\frac{3}{16}$	Same as Type 635/7019 except for Lug-type base									
673	5F	10	11 $\frac{7}{16}$	3 $\frac{1}{8}$	10	For maximum ratings and operating conditions, refer to Type 575A.								
816	2.5F	2	4 $\frac{11}{16}$	1 $\frac{9}{16}$	15	20 to 60	7500	0.5	0.125	5	7500	5200	2400	0.25
857B	5F	30	19 $\frac{7}{8}$	7 $\frac{1}{8}$	15	30 to 40 25 to 60	22000 10000	40 40	10 10	400 400	22000 10000	15400 7000	7000 3200	20 20
866A	2.5F	5	6 $\frac{9}{16}$	2 $\frac{7}{16}$	15	20 to 60 20 to 70 20 to 80	10000 5000 2500	1 1 2	0.25 0.25 0.5	20 20 20	10000 5000 2500	7000 3400 1600	3200 1600 800	0.5 0.5 1
869B	5F	19	14 $\frac{7}{16}$	5 $\frac{1}{8}$	15	30 to 40 30 to 50 30 to 60 30 to 40 30 to 50 30 to 60	20000 15000 10000 20000 15000 10000	10 10 10 10 20 20	2.5 2.5 2.5 2.5 5 5	100 100 100 100 100 100	20000 15000 10000 — — —	14000 10600 7000 — — —	6300 4700 3200 — — —	5 5 5 — — —
872A	5F	7.5	8 $\frac{1}{2}$	2 $\frac{5}{16}$	10	20 to 60 20 to 70	10000 5000	5 5	1.25 1.25	50 50	10000 5000	7000 3400	3200 1600	2.5 2.5
4620	Same as Type 857-B except for added filament shield.													

RCA Type	Description	Filament (F) or Heater		Max. Dimensions Inches		Max. Plate or Anode Ratings		
		Volts	Amp.	Length	Diam.	Peak Inverse Volts	Peak Amperes	Average Amperes
VACUUM TYPES—Half-Wave Types								
2X2A	For equipment subject to severe shock and vibration.	2.5	1.75	4 $\frac{17}{32}$	1 $\frac{9}{16}$	12500 [†]	0.06 [†]	0.0075 [†]
579B	For high-voltage low-current uses.	2.5F	6	7 $\frac{7}{16}$	2 $\frac{1}{8}$	20000	0.27	0.025
836	For use in transmitting and industrial equipment.	2.5	5	6 $\frac{9}{16}$	2 $\frac{7}{16}$	5000	1	0.25
1616	For use in transmitting and industrial equipment.	2.5F	5	6 $\frac{13}{16}$	2 $\frac{1}{16}$	6000	0.8	0.13
5825	For rf-operated high-voltage low-current power supplies.	1.6F	1.25	5 $\frac{27}{32}$	2 $\frac{1}{16}$	60000	0.04	0.002
6173	For use where space is at a premium.	6.3	0.135	2.227	0.320	375	0.05	0.0055
8013A	For high-voltage low-current uses.	2.5F	5	6 $\frac{1}{16}$	2 $\frac{1}{16}$	40000 [‡]	0.15	0.02
8020	For high-voltage low-current uses.	5F	6.5	8	2 $\frac{5}{16}$	40000	1.5	0.1

RCA Type	Filament (F) or Heater		Max. Dimensions Inches		Tube Voltage Drop	Max. Plate or Anode Ratings — For Supply Frequency of 60 cps [‡]					Operating Conditions Single-Phase Full-Wave [†] (With 2 Tubes)			
	Volts	Amp.	Length	Diam.		Temp. Range Condensed Mercury °C	Peak Inverse Volts	Peak Amperes	Average Amperes	Fault Amperes	Peak Inverse Volts	Max. AC Plate-to-Plate Supply Volts	Approx. DC Output Volts To Filter	Max. DC Output Amperes
MERCURY-VAPOR TYPES — Half-Wave Types (except as noted)														
5558	5	4.5	7	1 ⁵ / ₁₆	12	35 to 60 35 to 80	5000 2000	15 15	2.5 2.5	200 200	For Existing Equipment			
5561	5	10	11 ¹ / ₄	3 ¹³ / ₁₆	15	40 to 80	3000	40	6.4	400	For Existing Equipment			
											Welder-Control Ratings		25 to 50	10000
6894	5F	10	10 ¹⁷ / ₃₂	2 ⁵ / ₈	10	20 to 50	20000	8.3	1.8	100	20000	14000	6300	3.6
						20 to 55	15000	8.3	1.8	100	15000	10600	4700	3.6
						20 to 60	10000	8.3	1.8	100	10000	7000	3200	3.6
						20 to 50	20000	11.5	2.5	100	—	—	—	—
						20 to 55	15000	11.5	2.5	100	—	—	—	—
6895	5F	10	10 ¹³ / ₃₂	2 ⁵ / ₈	For maximum ratings and operating conditions, refer to Type 6894.									
8008	5F	7.5	8 ³ / ₄	2 ⁵ / ₁₆	For maximum ratings and operating conditions, refer to Type 872A.									
GAS TYPES — Half-Wave Types														
3B25	2.5F	5	6 ³ / ₁₆	2 ¹ / ₁₆	10	-75 to +90 ^w	4500	2	0.5	20	4500	3000	1400	1
3B28	2.5F	5	6.15	2 ¹ / ₁₆	10	-75 to +90 ^w	10000	1	0.25	20	10000	7000	3200	0.5
							5000	2	0.5	20	5000	3400	1600	1

‡ Values shown in italics are for quadrature operation; other values are for in-phase operation.

† Conditions assumed; (1) sine wave supply (2) zero voltage drop (3) pure resistive load (4) no filter.

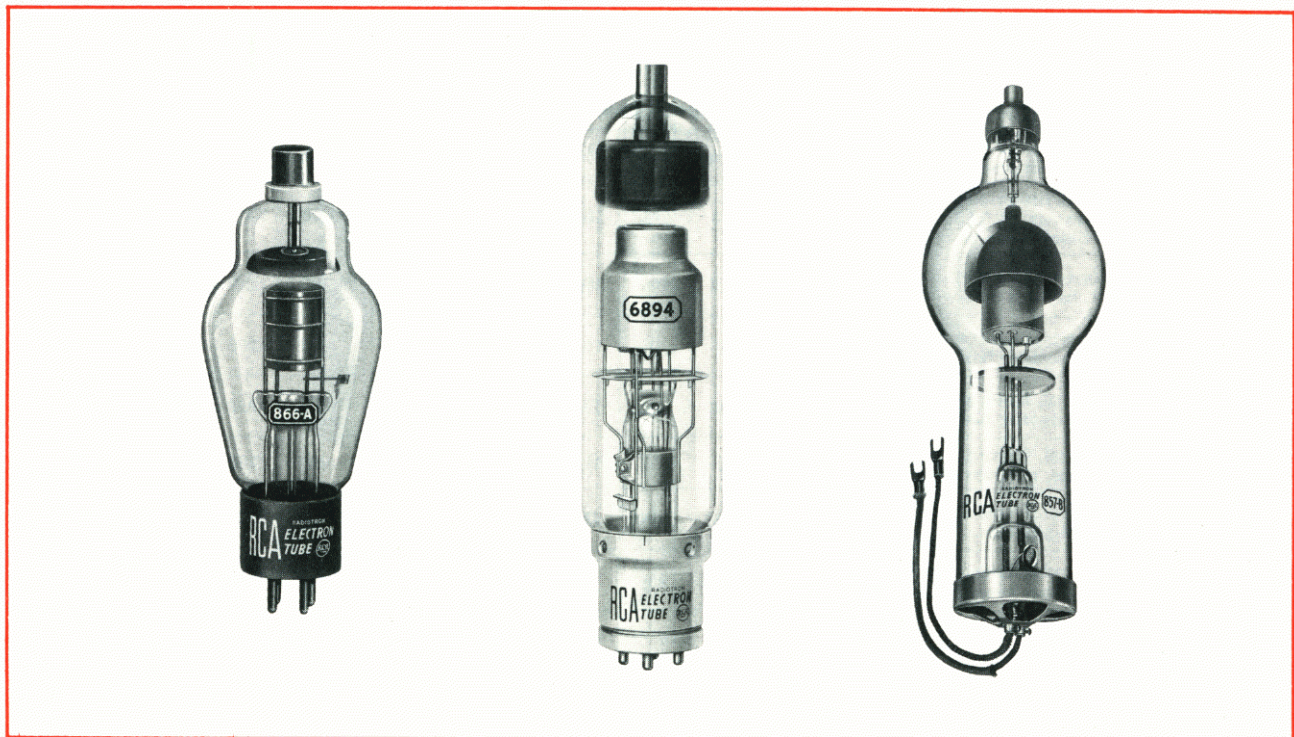
ⁱ Excluding flexible leads.

^l Design-center values.

^w For oil-immersed operation, a maximum rating of 55,000 volts applies.

^v Full-wave type.

^w Ambient temperature.



RCA THYRATRONS

Type	Description	Filament (F) or Heater		Max. Dimensions Inches		Approx. Tube Drop Volts	Maximum Ratings†						
		Volts	Amp.	Length	Diam.		Temperature Range		Peak Forward Anode Volts	Peak Inverse Anode Volts	Peak Anode Amperes	Average Anode Amperes	Fault Amperes
							Condensed Mercury °C Except as Noted						
TRIODES (Mercury-Vapor Types)—For Control Service (except as noted)													
3C23	Gas and mercury-vapor tube of the negative-control, filament type. Small 4-pin bayonet base, medium cap.	2.5F	7	6 $\frac{1}{8}$	2 $\frac{1}{16}$	15	-40 to +80 ^{wp}	1250	1250	6	1.5	120	
627	Negative-control, filament type. Super-jumbo 4-pin base, medium cap.	2.5F	5	6 $\frac{5}{8}$	2 $\frac{1}{16}$	12	25 to 70	2500	5000	2.5	0.64	25	
676	Negative-control, heater-cathode type. Super-jumbo 4-pin base, medium cap.	5	10	11 $\frac{3}{4}$	3 $\frac{13}{16}$	12	40 to 80	2500	2500	40	6.4	200	
		Welder-Control Ratings						40 to 90	750	750	77	2.5	200
677	Negative-control, heater-cathode type. Super-jumbo 4-pin base, medium cap.	5	10	11 $\frac{11}{16}$	3 $\frac{13}{16}$	12	30 to 50	10000	10000	16	4	16	
710/6011	Gas and mercury-vapor tube of the negative-control, filament type. Small 4-pin bayonet base, medium cap.	2.5F	9	6 $\frac{1}{4}$	1 $\frac{5}{8}$	10	-40 to +80	1500	1500	30	2.5	250	
714/7021	Gas and mercury-vapor tube of the negative-control, filament type. Small 4-pin bayonet base, medium cap.	2.5F	5	6 $\frac{1}{8}$	2 $\frac{1}{16}$	15	-40 to +80	1250	1250	3	1.0	50	
716/6855	Gas and mercury-vapor tube of the negative-control, filament type. Small 4-pin bayonet base.	2.5F	6.3	4 $\frac{3}{8}$	1 $\frac{9}{16}$	8	-40 to +80	1250	1250	8.0	1.0	80	
760/6858	Gas and mercury-vapor tube of the negative-control, filament type. Super-jumbo 4-pin bayonet base, medium cap.	2.5F	21	9 $\frac{1}{2}$	2 $\frac{9}{16}$	12	-40 to +80	1500	1500	77	6.4	770	
5557	Negative-control, filament type. Small 4-pin bayonet base, medium cap.	2.5F	5	6 $\frac{1}{8}$	2 $\frac{1}{16}$	15	40 to 60	5000	10000	1	0.25	50	
							40 to 80	2500	5000	2	0.5	50	
							40 to 90	1250	1250	3	1	50	
5559	Negative-control, heater-cathode type. Small 4-pin bayonet base, medium cap.	5	4.5	7 $\frac{1}{4}$	3	16	40 to 80	1000	1000	15	2.5	200	
5563A	Negative-control, filament type. Values in italics are for quadrature operation. Jumbo 4-pin, bayonet base, medium cap.	5F	10	10 $1\frac{17}{32}$	2 $\frac{5}{8}$	15	25 to 50	20000	20000	6.4	1.6	70	
							25 to 55	15000	15000	10	1.8	70	
							25 to 50	20000	20000	11.5	2.5	70	
							25 to 55	15000	15000	11.5	2.5	70	
TRIODES (Gas Types)—For Control Service (except as noted)													
629	Not recommended for new equipment design. Small 5-pin base.	2.5	2.6	4 $\frac{1}{4}$	1 $\frac{9}{16}$	15	-40 to +70 ^{wp}	350	350	0.2	0.04	2	
6130/3C45	Positive-control, heater-cathode, hydrogen type. Full ratings to 50,000 feet. Pulse modulator. Small 4-pin base, small cap.	6.3	2.3	5 $\frac{3}{16}$	1 $\frac{9}{16}$	150	-50 to +90 ^{wp}	3000	3000	35	0.045	—	
C1K/6014	Negative-control, filament, xenon type. Small 4-pin, bayonet base.	2.5F	6.3	4 $\frac{5}{16}$	1 $\frac{9}{16}$	8	-55 to +75 ^{wp}	1000	1250	8	1	77	
C3J/5632	Negative-control, filament, xenon type. Small 4-pin, bayonet base, medium cap.	2.5F	9	6	1 $\frac{5}{8}$	10	-55 to +75 ^{wp}	900	1250	30	2.5	300	
C3JA/5684	Negative-control, filament, xenon type. Small 4-pin, bayonet base, medium cap.	2.5F	9	6	1 $\frac{5}{8}$	10	-55 to +75 ^{wp}	1000	1250	30	2.5	300	
C3JL	Negative-control, filament, xenon type. Special lug base, medium cap.	2.5F	9	6 $\frac{3}{4}$	2 $\frac{3}{16}$	10	-55 to +75 ^{wp}	900	1250	30	2.5	300	
C6J/5C21	Negative-control, filament, xenon type. Super-jumbo 4-pin base, medium cap.	2.5F	21	9 $\frac{1}{2}$	2 $\frac{1}{32}$	9	-55 to +75 ^{wp}	750	1250	77	6.4	770	
C6JA/5685	Negative-control, filament, xenon type. Super-jumbo 4-pin base, medium cap.	2.5F	21	9 $\frac{1}{2}$	2 $\frac{1}{32}$	9	-55 to +75 ^{wp}	1000	1250	77	6.4	770	
C16J/5665	Negative-control, filament, xenon type. Base bracket and flexible leads.	2.5F	31	10 $\frac{1}{2}$ ⁱ	2 $\frac{9}{16}$ ^z	11	-55 to +75 ^{wp}	1000	1250	160	16	1000	
								1000	1250	100	18	1000	

For footnotes, see page 31.

Type	Description	Filament (F) or Heater		Max. Dimensions Inches		Approx. Tube Drop Volts	Maximum Ratings†						
		Volts	Amp.	Length	Diam.		Temperature Range		Peak Forward Anode Volts	Peak Inverse Anode Volts	Peak Anode Amperes	Average Anode Amperes	Fault Amperes
							Condensed Mercury °C Except as Noted						
TETRODES (Mercury-Vapor Types)—For Control Service (except as noted)													
105	Negative-control, heater-cathode type. Super-jumbo 4-pin, bayonet base, two large caps.	5	10	11¼	2½ ⁱ	16	40 to 80	2500	2500	40	6.4	400	
		Max. Ratings for Intermittent Service						25 to 50	10000	10000	16	4	160
172	Negative-control, heater-cathode type. Special terminal connections.	5	10	10 ²⁷ / ₃₂	2 ⁵ / ₈ ⁱ	16	40 to 80	2000	2000	40	6.4	400	
		5.5	11	Welder-Control Ratings			30 to 95	750	750	77	2.5	400	
632B	Negative-control, heater-cathode type. Ignitor firing applications. Small 4-pin bayonet base, two medium caps.	5	5	8 ⁵ / ₁₆	1¾ ⁱ	12	40 to 80	1500	1500	30	2.5	150	
672A	Negative-control, heater-cathode type. Ignitor firing applications. Super-jumbo 4-pin bayonet base, medium cap.	5	5	8 ³ / ₈	2 ⁵ / ₁₆	12	40 to 80	2500	2500	40	3.2	150	
5560	Negative-control, heater-cathode type. Ignitor firing applications. Small 4-pin bayonet base, two medium caps.	5	4.5	7 ¹⁵ / ₁₆	2¼ ⁱ	16	40 to 80	1000	1000	15	2.5	200	
TETRODES (Gas Types)—For High-Sensitivity Control Service													
3D22A	Negative-control, heater-cathode type. Giant 7-pin, bayonet base.	6.3	2.6	4 ⁵ / ₈	2 ³ / ₈	10	-75 to +90 ^w	650	1500	8	0.8	30	
								Grid-No. 1 Circuit Resistance, 2 megohms max.					

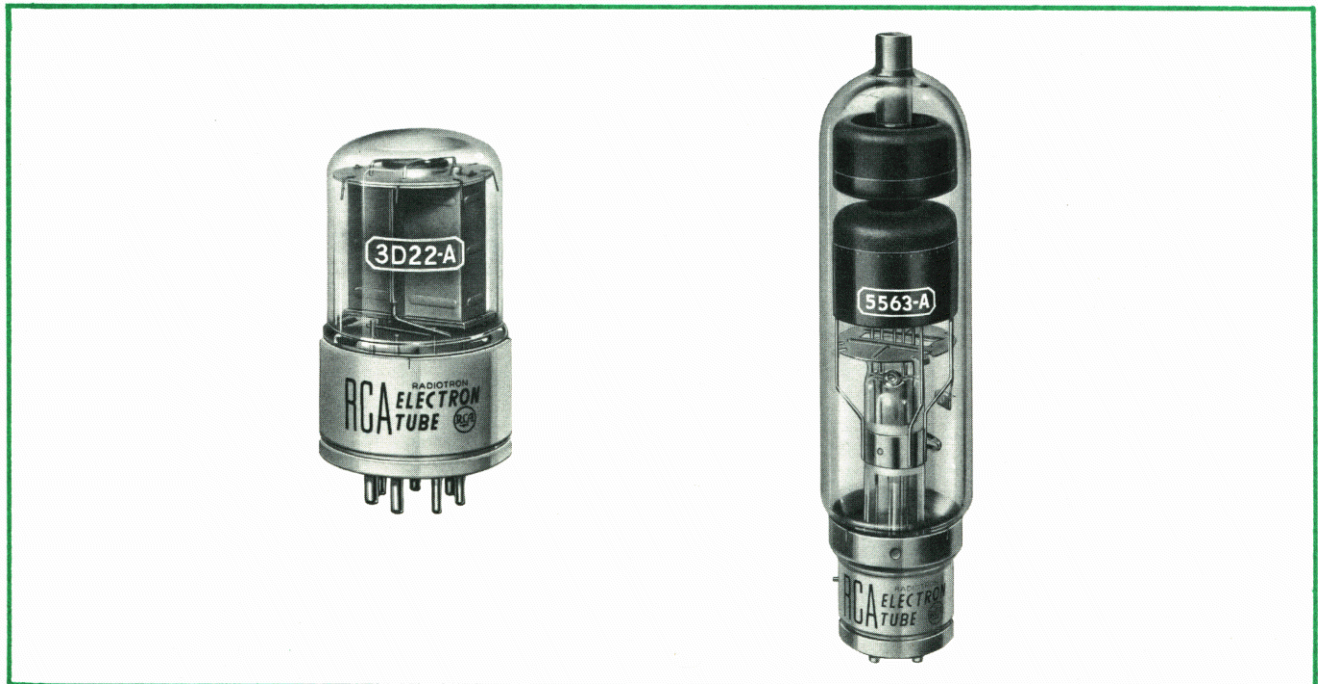
† Values shown in italics are for quadrature operation; other values are for in-phase operation.

ⁱ Maximum radius.

^j Excluding flexible leads.

^z Bulb diameter.

^w Ambient temperatures.



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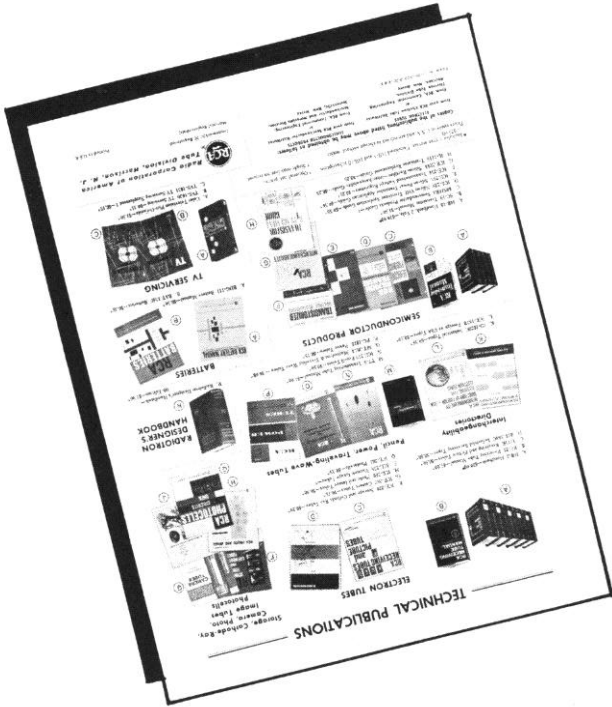
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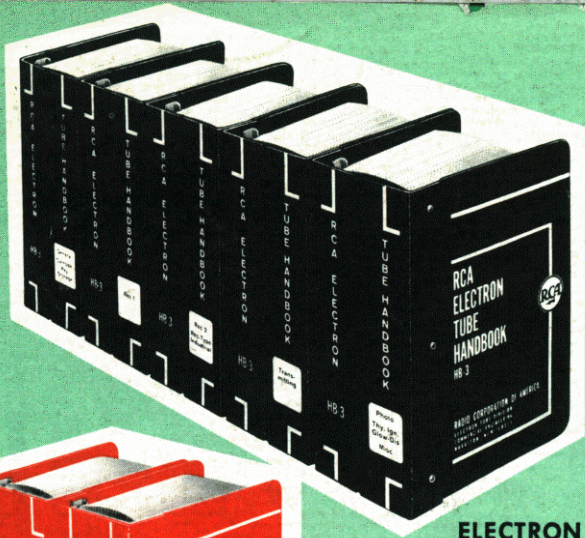


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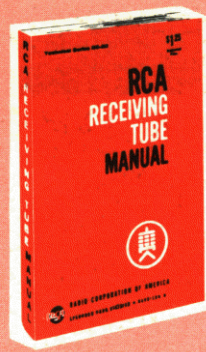
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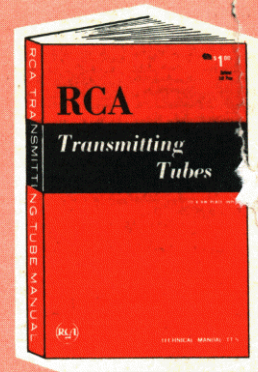
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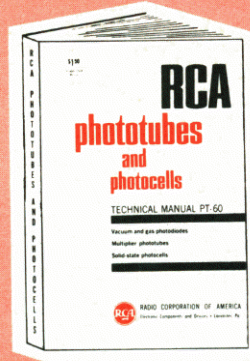
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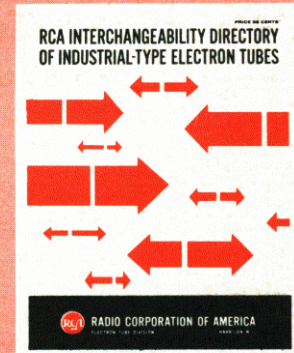
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