



ELECTRONIC TUBE REFERENCE

20

Power - Triode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Directly heated power-amplifier triode for the audio output stage of battery-operated receivers.

GENERAL CHARACTERISTICS

BASE DESIGNATION	4D	BASE PINS	4
NOMINAL HEATER	3.3 V / 132 mA	PARALLEL HEATER	– / –
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
PLATE RESISTANCE	6300 Ω
TRANSCONDUCTANCE	0.000425 S
AMPLIFICATION FACTOR	3.3
MAXIMUM PLATE VOLTAGE	135 V
MAXIMUM CATHODE CURRENT	6.5 mA
<i>Published ratings and characteristics promoted from the approved datasheet.</i>	

Directly heated triode power amplifier for the output stage of battery-operated receivers. The supplied Raytheon manual page provides the ratings and operating characteristics used for the technical extraction.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1932 Cunningham Radio Tubes

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1932 CUNNINGHAM RADIO TUBES

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-plate capacitance	4.1 pF	Published direct interelectrode capacitance
Grid-filament capacitance	2 pF	Published direct interelectrode capacitance
Plate-filament capacitance	2.3 pF	Published direct interelectrode capacitance
Load resistance	9600 ohm	Published operating characteristic

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1937 Raytheon Radio Receiving Tubes

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1937 RAYTHEON RADIO RECEIVING TUBES

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	135 V	Published ratings
Plate Voltage	90 V	ClassA; Column1
Plate Voltage	135 V	ClassA; Column2
Grid Bias	-16.5 V	ClassA; Column1
Grid Bias	-22.5 V	ClassA; Column2
Amplification Factor	3.3	ClassA; Column1
Amplification Factor	3.3	ClassA; Column2
Plate Resistance	8000 ohm	ClassA; Column1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Resistance	6300 ohm	ClassA; Column2
Transconductance	415 uS	ClassA; Column1
Transconductance	525 uS	ClassA; Column2
Plate Current	3 mA	ClassA; Column1
Plate Current	6.5 mA	ClassA; Column2
Load Resistance	9600 ohm	ClassA; Column1
Load Resistance	6500 ohm	ClassA; Column2
Power Output	5 mW	ClassA; Column1
Power Output	45 mW	ClassA; Column2
Power Output	110 mW	ClassA; Column3

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to Plate	4.1 pF	Published capacitance
Input	2 pF	Published capacitance
Output	2.3 pF	Published capacitance


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

193X Cunningham

Published test conditions and operating points. Values on this page are preserved as reported by this source.

193X CUNNINGHAM

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament voltage	3.3 V	Published nominal
Heater/filament current	132 mA	Published nominal
Transconductance	425 uS	Published characteristic
Amplification factor	20	Published characteristic
Plate resistance	47000 Ohm	Published characteristic



SOURCE OPERATING CONDITIONS

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1940 RCA

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1940 RCA

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterVoltageNominal	3.3 V	Nominal
HeaterCurrentNominal	132 mA	Nominal
Maximum Plate Voltage	135 V	—
Maximum Cathode Current	6.5 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	525 μ S	Typical
Amplification Factor	3.3	Typical
Plate Resistance	6300 ohm	Typical



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

195X General Electric Essential Characteristics

Published test conditions and operating points. Values on this page are preserved as reported by this source.

195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input capacitance	2 pF	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output capacitance	2.3 pF	—
Grid-to-plate capacitance	4.1 pF	—
Plate resistance	6300 ohm	ClassA; OperatingPoint1
Transconductance	525 uS	ClassA; OperatingPoint1
Amplification factor	3.3	ClassA; OperatingPoint1

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	135 V	ClassA; OperatingPoint1
Control-grid bias	22.5 V	ClassA; OperatingPoint1
Plate current	6.5 mA	ClassA; OperatingPoint1
Load resistance	6500 ohm	ClassA; OperatingPoint1
Power output	0.11 W	ClassA; OperatingPoint1
Maximum plate voltage	135 V	—

TUBE TINKER

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and their source documents.

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