

ELECTRONIC TUBE REFERENCE

50

Power - Triode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TRIODE

Classic directly heated low-mu audio power triode for single-ended Class A output stages. With about 15 W plate dissipation and amplification factor near 3.8, published 450 V operation provides approximately 4.6 W output.

GENERAL CHARACTERISTICS

BASE DESIGNATION	4D	BASE PINS	4
NOMINAL HEATER	7.5 V / 1.25 A	PARALLEL HEATER	– / –
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Triode	
PLATE RESISTANCE	1800 Ω
TRANSCONDUCTANCE	0.0021 S
AMPLIFICATION FACTOR	3.8
MAXIMUM PLATE VOLTAGE	450 V
MAXIMUM PLATE DISSIPATION	15 W
MAXIMUM CATHODE CURRENT	55 mA
Published ratings and characteristics promoted from the approved datasheet.	

Directly heated Type 50 audio power triode. The supplied Emission Labs sheet was read for filament data, maximum ratings, representative operating points, gm/rp/mu, output conditions, capacitances, and rectifier filter conditions as applicable.



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	9 pF	Published direct interelectrode capacitance
Grid-filament capacitance	5 pF	Published direct interelectrode capacitance
Plate-filament capacitance	3 pF	Published direct interelectrode capacitance
Grid-cathode capacitance	3.2 pF	Published direct interelectrode capacitance
Plate-cathode capacitance	2.2 pF	Published direct interelectrode capacitance
Load resistance	4100 ohm	Published operating characteristic



SOURCE OPERATING CONDITIONS

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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

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Capacitance	4.2 pF	—
Output Capacitance	3.4 pF	—
Grid-Plate Capacitance	7.1 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	450 V	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid Voltage	-84 V	ClassA
Plate Current	55 mA	ClassA
Load Resistance	4350 ohm	ClassA
Power Output	4.6 W	ClassA


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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	7.5 V	Published nominal
Heater/filament current	1.25 A	Published nominal
Transconductance	2100 μ S	Published characteristic
Amplification factor	3.8	Published characteristic
Plate resistance	1800 Ohm	Published characteristic


SOURCE DATA APPENDIX

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	7.5 V	Nominal

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterCurrentNominal	1.25 A	Nominal
Maximum Plate Voltage	450 V	—
Maximum Cathode Current	55 mA	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Transconductance	2100 μ S	Typical
Amplification Factor	3.8	Typical
Plate Resistance	1800 ohm	Typical
UndistortedPowerOutput	4.6 W	450 V plate



SOURCE OPERATING CONDITIONS

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195X General Electric Essential Characteristics

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195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 1 · Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input Capacitance	4.2 pF	—
Output Capacitance	3.4 pF	—
Grid-Plate Capacitance	7.1 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	450 V	ClassA
Grid Voltage	-84 V	ClassA
Plate Current	55 mA	ClassA
Load Resistance	4350 ohm	ClassA
Power Output	4.6 W	ClassA



SOURCE OPERATING CONDITIONS

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1961 Tung Sol

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

1961 TUNG SOL

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	350 V	ClassA
Power Output	4.6 W	ClassA

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid To Filament Capacitance	4.2 pF	—
Plate To Filament Capacitance	3.4 pF	—



SOURCE OPERATING CONDITIONS

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2026 Emission Labs

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

2026 EMISSION LABS

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage	7.5 V	—
Filament current	1.25 A	—
Plate resistance	1800 ohm	ClassA
Amplification factor	3.8	ClassA
Transconductance	2100 uS	ClassA

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	400 V	ClassA
Plate current	55 mA	ClassA
Grid voltage	-70 V	ClassA
Load resistance	3670 ohm	ClassA
Output power	3.4 W	ClassA
High-power Class A output power	6.7 W	PlateVoltage=485V;PlateCurrent=57mA;Load=5k

TUBE TINKER

An independent reference for electronic tubes, vacuum tubes, and their source documents.

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