



ELECTRONIC TUBE REFERENCE

2A3

Power - Triode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Classic directly heated low-mu audio power triode for single-ended and push-pull output stages. Its low plate resistance, roughly 15 W plate dissipation, and typical 250 V operating conditions made it a standard high-quality audio output tube.

GENERAL CHARACTERISTICS

BASE DESIGNATION	4D	BASE PINS	4
NOMINAL HEATER	2.5 V / 2.5 A	PARALLEL HEATER	– / –
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
PLATE RESISTANCE	800 Ω
TRANSCONDUCTANCE	0.00525 S
AMPLIFICATION FACTOR	4.2
MAXIMUM PLATE VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	15 W
MAXIMUM CATHODE CURRENT	100 mA
Class A1 power triode; representative characteristics at 250 V plate.	

Directly heated power-amplifier triode for Class-A and push-pull Class-AB audio output service.

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	300 V	Published datasheet rating
Plate voltage	250 V	ClassA
Control-grid bias	45 V	ClassA
Plate current	60 mA	ClassA
Load resistance	2500 ohm	ClassA
Power output	3.5 W	ClassA
Push-pull plate voltage	300 V	ClassAB PushPull TwoTubes
Push-pull fixed-bias grid voltage	62 V	ClassAB PushPull TwoTubes
Push-pull no-signal plate current per tube	40 mA	ClassAB PushPull TwoTubes
Push-pull load resistance fixed bias	3000 ohm	ClassAB PushPull TwoTubes
Push-pull power output fixed bias	15 W	ClassAB PushPull TwoTubes
Push-pull load resistance self bias	5000 ohm	ClassAB PushPull TwoTubes
Push-pull power output self bias	10 W	ClassAB PushPull TwoTubes

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	800 ohm	Published datasheet characteristic
Transconductance	5250 μS	Published datasheet characteristic
Amplification factor	4.2	Published datasheet characteristic
Heater/filament voltage	2.5 V	Published heater/filament rating

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament current	2.5 A	Published heater/filament rating



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1940 RCA

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1940 RCA
Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
FiLaMENT VoLTAGE (A. C.or D. C)..ovviiinnn,	2.5 V	FiLaMENT VoLTAGE (A. C.or D. C)..ovviiinnn, 2.5 Volts
FILAMENT CURRENT oc	2.5 A	FILAMENT CURRENT oc0n... esseisneanas 2.5 Amperes
FILAMENT VOLTAGE (A. C).vvvveiniinenennns	2.5 V	FILAMENT VOLTAGE (A. C).vvvveiniinenennns 2.5 Volts
PLATE VOLTAGE .+ iviveineareenananenrnonnennns	250 V	PLATE VOLTAGE .+ iviveineareenananenrnonnennns 250 max. Volts
GRID VOLTAGE¥* c.civvvanns e —	45 V	GRID VOLTAGE¥* c.civvvanns e —45 Volts
PLATE CURRENT ttvvivnuneennnerrnnennnnnnnnnnns	50	PLATE CURRENT ttvvivnuneennnerrnnennnnnnnnnnns 50 Milliamperes
AMPLIFICATION FACTOR ceviinenvenennns	2	AMPLIFICATION FACTOR ceviinenvenennns 4,2
SELF-BIAS RESISTOR . ..vivvcnvnrrnnenrennnnnennnn	750 ohm	SELF-BIAS RESISTOR . ..vivvcnvnrrnnenrennnnnennnn 750 Ohms
UNDISTORTED POWER OUTPUT....cvvvvvvvnnennnn	35 W	UNDISTORTED POWER OUTPUT....cvvvvvvvnnennnn. 35 Watts
FILAMENT VOLTAGE (A. C.)...ovuvnvvn	2.5 V	FILAMENT VOLTAGE (A. C.)...ovuvnvvn.. 2.5 2.5 Volts
Prate VoLTAGE (Maximum).....v	300 V	Prate VoLTAGE (Maximum).....v..... 300 300 Volts
GRID VOLTAGE* vevercovanerconns —	62 V	GRID VOLTAGE* vevercovanerconns —62 — Volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
SELF-BIAS RESISTOR ..ecvnvevenn. teeeraenn —	780 ohm	SELF-BIAS RESISTOR ..ecvnvevenn. teeeraenn — 780 Ohms
ZEerO-SIGNAL PLATE CURRENT (Per tube)	40	ZEerO-SIGNAL PLATE CURRENT (Per tube)... 40 40 Milliamperes
POWER OUTPUT .i.vvereennnccesonnnnns	10 W	POWER OUTPUT .i.vvereennnccesonnnnns 15 10 Watts
* Grid volts measured from m}d;;;r;ir;t'	1 V	* Grid volts measured from m}d;;;r;ir;t' 1;{' ;- c operated filament.
As a power amplifier (Class A;), the	2	As a power amplifier (Class A;), the 2A3 is usable either singly or in push-
value makes the	2	value makes the 2A3 somewhat critical as to grid-bias voltage, since a very small
grid circuit should not exceed	0.5	grid circuit should not exceed 0.5 megohm. With fixed-bias, however, the d-c

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PLATE RESISTANCE . ..iiviiernennnnennrnnnnnns	800 ohm	PLATE RESISTANCE . ..iiviiernennnnennrnnnnnns 800 Ohms
TRANSCONDUCTANCE .. .ivnrvvnnnanecnnnancanns	5250 μS	TRANSCONDUCTANCE .. .ivnrvvnnnanecnnnancanns 5250 Micromhos
LOAD RESISTANCE + ..t vvvvrccccnnnnnnnnennennsnns	2500 ohm	LOAD RESISTANCE + ..t vvvvrccccnnnnnnnnennennsnns 2500 Ohms
ErrecTIVE LoAD RESISTANCE (Plate-to-plate)	5000 ohm	ErrecTIVE LoAD RESISTANCE (Plate-to-plate) 3000 5000 Ohms
very high transconductance of these tubes—	5250 μS	very high transconductance of these tubes— 5250 micromhos. This very high
resistance should not exceed	50000 ohm	resistance should not exceed 50000 ohms.







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SOURCE OPERATING CONDITIONS

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1948 Brimar Radio Valve Manual

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

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
HeaterOrFilamentVoltage	2.5 V	—
HeaterOrFilamentCurrent	2.5 A	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power Output	3.5 W	ClassA



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1950 Sylvania

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CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tension filament CA. ou CC. 2,5 Volts	2.5 V	Tension filament CA. ou CC. 2,5 Volts
Courant filament 0 e 2,5 ampères	2.5 A	Courant filament 0 e 2,5 ampères



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1958 Brimar Radio Valve No 7

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OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power output	3.5 W	ClassA



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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	7.5 pF	Section1
Output capacitance	5.5 pF	Section1
Grid-to-plate capacitance	16.6 pF	Section1

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	250 V	ClassA
Control-grid voltage	-45 V	ClassA
Plate current	60 mA	ClassA
Load resistance	2500 Ω	ClassA
Power output	3.5 W	ClassA
Plate voltage	300 V	ClassAB PushPull TwoTubes
Plate current	80 mA	ClassAB PushPull TwoTubes
Load resistance	3000 Ω	ClassAB PushPull TwoTubes
Power output	15 W	ClassAB PushPull TwoTubes

Characteristic		
Parameter	Published Value	Condition / Note
Plate resistance	800 Ω	ClassA
Transconductance	5250 μS	ClassA
Amplification factor	4.2	ClassA



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1961 Tung Sol

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1961 TUNG SOL

Section 1 · Triode

Capacitance		
Parameter	Published Value	Condition / Note
Grid To Plate Capacitance	16.5 pF	DirectInterelectrode
Input Capacitance	7.5 pF	DirectInterelectrode
Output Capacitance	5.5 pF	DirectInterelectrode

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