



ELECTRONIC TUBE REFERENCE

4020A

Voltage - Triode (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Directly heated high-mu oxide-filament triode with published audio operating conditions, load resistance, output, and harmonic-performance data.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	4
NOMINAL HEATER	2 V / 250 mA	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
PLATE RESISTANCE	50000 Ω
TRANSCONDUCTANCE	0.0006 S
AMPLIFICATION FACTOR	30
<i>Published ratings/characteristics promoted; remaining useful source values represented as parameters.</i>	

Standard Valves 4020A is an oxide-coated directly heated triode. The sheet publishes its filament rating, static constants, interelectrode capacitances, and a table of typical anode/grid/load operating conditions with output and harmonic performance. Oxide-coated filament high-mu triode, medium 4-pin bayonet-thrust base.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1937 Standard Valves

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

1937 STANDARD VALVES

Section 1 · Triode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-Anode Capacitance	6.3 pF	Published specification
Anode-Filament Capacitance	4.4 pF	Published specification
Grid-Filament Capacitance	6.2 pF	Published specification

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Characteristic Anode Current	0.8 mA	For impedance/amplification factor/transconductance values

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output Voltage Peak	18.5 V	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1V; AnodeCurrent=1.26mA; AnodeResistance=43000ohm; LoadResistance=43000ohm
Total Harmonics Below Fundamental	34.5 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1V; AnodeCurrent=1.26mA; AnodeResistance=43000ohm; LoadResistance=43000ohm
Output Voltage Peak	20.3 V	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1V; AnodeCurrent=1.26mA; AnodeResistance=43000ohm; LoadResistance=86000ohm
Total Harmonics Below Fundamental	37 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1V; AnodeCurrent=1.26mA; AnodeResistance=43000ohm; LoadResistance=86000ohm

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output Voltage Peak	20.6 V	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1V; AnodeCurrent=1.26mA; AnodeResistance=43000ohm; LoadResistance=129000ohm
Total Harmonics Below Fundamental	37 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1V; AnodeCurrent=1.26mA; AnodeResistance=43000ohm; LoadResistance=129000ohm
Output Voltage Peak	21.4 V	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1.5V; AnodeCurrent=0.92mA; AnodeResistance=46000ohm; LoadResistance=46000ohm
Total Harmonics Below Fundamental	30 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1.5V; AnodeCurrent=0.92mA; AnodeResistance=46000ohm; LoadResistance=46000ohm
Output Voltage Peak	25.4 V	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1.5V; AnodeCurrent=0.92mA; AnodeResistance=46000ohm; LoadResistance=92000ohm
Total Harmonics Below Fundamental	35.3 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1.5V; AnodeCurrent=0.92mA; AnodeResistance=46000ohm; LoadResistance=92000ohm
Output Voltage Peak	26.2 V	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1.5V; AnodeCurrent=0.92mA; AnodeResistance=46000ohm; LoadResistance=138000ohm
Total Harmonics Below Fundamental	37 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-1.5V; AnodeCurrent=0.92mA; AnodeResistance=46000ohm; LoadResistance=138000ohm
Output Voltage Peak	12.1 V	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-2V; AnodeCurrent=0.64mA; AnodeResistance=52000ohm; LoadResistance=52000ohm

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Total Harmonics Below Fundamental	21.7 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-2V; AnodeCurrent=0.64mA; AnodeResistance=52000ohm; LoadResistance=52000ohm
Output Voltage Peak	14.8 V	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-2V; AnodeCurrent=0.64mA; AnodeResistance=52000ohm; LoadResistance=104000ohm
Total Harmonics Below Fundamental	28 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-2V; AnodeCurrent=0.64mA; AnodeResistance=52000ohm; LoadResistance=104000ohm
Output Voltage Peak	17.6 V	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-2V; AnodeCurrent=0.64mA; AnodeResistance=52000ohm; LoadResistance=156000ohm
Total Harmonics Below Fundamental	30.5 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-2V; AnodeCurrent=0.64mA; AnodeResistance=52000ohm; LoadResistance=156000ohm
Output Voltage Peak	24 V	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-1.5V; AnodeCurrent=1.63mA; AnodeResistance=41000ohm; LoadResistance=41000ohm
Total Harmonics Below Fundamental	35.2 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-1.5V; AnodeCurrent=1.63mA; AnodeResistance=41000ohm; LoadResistance=41000ohm
Output Voltage Peak	30.2 V	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-1.5V; AnodeCurrent=1.63mA; AnodeResistance=41000ohm; LoadResistance=82000ohm
Total Harmonics Below Fundamental	38.2 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-1.5V; AnodeCurrent=1.63mA; AnodeResistance=41000ohm; LoadResistance=82000ohm

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output Voltage Peak	35 V	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-1.5V; AnodeCurrent=1.63mA; AnodeResistance=41000ohm; LoadResistance=123000ohm
Total Harmonics Below Fundamental	38.5 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-1.5V; AnodeCurrent=1.63mA; AnodeResistance=41000ohm; LoadResistance=123000ohm
Output Voltage Peak	37 V	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-2V; AnodeCurrent=1.28mA; AnodeResistance=44000ohm; LoadResistance=44000ohm
Total Harmonics Below Fundamental	29 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-2V; AnodeCurrent=1.28mA; AnodeResistance=44000ohm; LoadResistance=44000ohm
Output Voltage Peak	42 V	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-2V; AnodeCurrent=1.28mA; AnodeResistance=44000ohm; LoadResistance=88000ohm
Total Harmonics Below Fundamental	35 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-2V; AnodeCurrent=1.28mA; AnodeResistance=44000ohm; LoadResistance=88000ohm
Output Voltage Peak	45.6 V	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-2V; AnodeCurrent=1.28mA; AnodeResistance=44000ohm; LoadResistance=132000ohm
Total Harmonics Below Fundamental	36 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-2V; AnodeCurrent=1.28mA; AnodeResistance=44000ohm; LoadResistance=132000ohm



1946 Standard Telephone and Cables

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

1946 STANDARD TELEPHONE AND CABLES

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament voltage	2 V	—
Heater/filament current	250 mA	—
Plate resistance	50000 ohm	—
Transconductance	0.0006 A/V	—
Amplification factor	30	—

TUBE TINKER

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

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