



ELECTRONIC TUBE REFERENCE

4019B

Voltage - Triode (single) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Directly heated oxide-filament triode with published audio operating conditions, load resistance, output, and harmonic-performance data for low-frequency amplifier service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	4
NOMINAL HEATER	4 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	5500 Ω
TRANSCONDUCTANCE	0.00127 S
AMPLIFICATION FACTOR	7
MAXIMUM PLATE VOLTAGE	190 V
<i>Published ratings/characteristics promoted; remaining useful source values represented as parameters.</i>	

Standard Valves 4019B 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 triode, Standard British 4-pin 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	5.4 pF	Published specification
Anode-Filament Capacitance	4.8 pF	Published specification
Grid-Filament Capacitance	7.3 pF	Published specification

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Characteristic Anode Voltage	130 V	For impedance/amplification factor/transconductance values
Characteristic Grid Bias	-8 V	For impedance/amplification factor/transconductance values

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output Power	54 mW	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-6V; AnodeCurrent=9.7mA; AnodeResistance=4800ohm; LoadResistance=4600ohm
Total Harmonics Below Fundamental	30 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-6V; AnodeCurrent=9.7mA; AnodeResistance=4800ohm; LoadResistance=4600ohm
Output Power	49 mW	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-6V; AnodeCurrent=9.7mA; AnodeResistance=4800ohm; LoadResistance=9200ohm

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Total Harmonics Below Fundamental	34 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-6V; AnodeCurrent=9.7mA; AnodeResistance=4800ohm; LoadResistance=9200ohm
Output Power	36 mW	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-6V; AnodeCurrent=9.7mA; AnodeResistance=4800ohm; LoadResistance=13800ohm
Total Harmonics Below Fundamental	37 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-6V; AnodeCurrent=9.7mA; AnodeResistance=4800ohm; LoadResistance=13800ohm
Output Power	83 mW	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-8V; AnodeCurrent=6.8mA; AnodeResistance=5500ohm; LoadResistance=5500ohm
Total Harmonics Below Fundamental	24 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-8V; AnodeCurrent=6.8mA; AnodeResistance=5500ohm; LoadResistance=5500ohm
Output Power	74 mW	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-8V; AnodeCurrent=6.8mA; AnodeResistance=5500ohm; LoadResistance=11000ohm
Total Harmonics Below Fundamental	30 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-8V; AnodeCurrent=6.8mA; AnodeResistance=5500ohm; LoadResistance=11000ohm
Output Power	61 mW	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-8V; AnodeCurrent=6.8mA; AnodeResistance=5500ohm; LoadResistance=16500ohm
Total Harmonics Below Fundamental	32 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-8V; AnodeCurrent=6.8mA; AnodeResistance=5500ohm; LoadResistance=16500ohm

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output Power	100 mW	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-10V; AnodeCurrent=4.3mA; AnodeResistance=6500ohm; LoadResistance=5500ohm
Total Harmonics Below Fundamental	16 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-10V; AnodeCurrent=4.3mA; AnodeResistance=6500ohm; LoadResistance=5500ohm
Output Power	85 mW	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-10V; AnodeCurrent=4.3mA; AnodeResistance=6500ohm; LoadResistance=11000ohm
Total Harmonics Below Fundamental	23 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-10V; AnodeCurrent=4.3mA; AnodeResistance=6500ohm; LoadResistance=11000ohm
Output Power	80 mW	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-10V; AnodeCurrent=4.3mA; AnodeResistance=6500ohm; LoadResistance=16500ohm
Total Harmonics Below Fundamental	27 dB	TypicalOperatingConditions; PlateVoltage=130V; GridBias=-10V; AnodeCurrent=4.3mA; AnodeResistance=6500ohm; LoadResistance=16500ohm
Output Power	150 mW	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-10V; AnodeCurrent=9.8mA; AnodeResistance=4700ohm; LoadResistance=4600ohm
Total Harmonics Below Fundamental	24 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-10V; AnodeCurrent=9.8mA; AnodeResistance=4700ohm; LoadResistance=4600ohm
Output Power	132 mW	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-10V; AnodeCurrent=9.8mA; AnodeResistance=4700ohm; LoadResistance=9200ohm

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Total Harmonics Below Fundamental	30 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-10V; AnodeCurrent=9.8mA; AnodeResistance=4700ohm; LoadResistance=9200ohm
Output Power	112 mW	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-10V; AnodeCurrent=9.8mA; AnodeResistance=4700ohm; LoadResistance=13800ohm
Total Harmonics Below Fundamental	37 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-10V; AnodeCurrent=9.8mA; AnodeResistance=4700ohm; LoadResistance=13800ohm
Output Power	180 mW	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-12V; AnodeCurrent=7.1mA; AnodeResistance=5300ohm; LoadResistance=5500ohm
Total Harmonics Below Fundamental	19 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-12V; AnodeCurrent=7.1mA; AnodeResistance=5300ohm; LoadResistance=5500ohm
Output Power	156 mW	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-12V; AnodeCurrent=7.1mA; AnodeResistance=5300ohm; LoadResistance=11000ohm
Total Harmonics Below Fundamental	23 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-12V; AnodeCurrent=7.1mA; AnodeResistance=5300ohm; LoadResistance=11000ohm
Output Power	130 mW	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-12V; AnodeCurrent=7.1mA; AnodeResistance=5300ohm; LoadResistance=16500ohm
Total Harmonics Below Fundamental	31 dB	TypicalOperatingConditions; PlateVoltage=160V; GridBias=-12V; AnodeCurrent=7.1mA; AnodeResistance=5300ohm; LoadResistance=16500ohm

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output Power	290 mW	TypicalOperatingConditions; PlateVoltage=190V; GridBias=-14V; AnodeCurrent=9.7mA; AnodeResistance=4900ohm; LoadResistance=5500ohm
Total Harmonics Below Fundamental	23 dB	TypicalOperatingConditions; PlateVoltage=190V; GridBias=-14V; AnodeCurrent=9.7mA; AnodeResistance=4900ohm; LoadResistance=5500ohm
Output Power	240 mW	TypicalOperatingConditions; PlateVoltage=190V; GridBias=-14V; AnodeCurrent=9.7mA; AnodeResistance=4900ohm; LoadResistance=11000ohm
Total Harmonics Below Fundamental	30 dB	TypicalOperatingConditions; PlateVoltage=190V; GridBias=-14V; AnodeCurrent=9.7mA; AnodeResistance=4900ohm; LoadResistance=11000ohm
Output Power	180 mW	TypicalOperatingConditions; PlateVoltage=190V; GridBias=-14V; AnodeCurrent=9.7mA; AnodeResistance=4900ohm; LoadResistance=16500ohm
Total Harmonics Below Fundamental	33 dB	TypicalOperatingConditions; PlateVoltage=190V; GridBias=-14V; AnodeCurrent=9.7mA; AnodeResistance=4900ohm; LoadResistance=16500ohm



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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	4 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament current	250 mA	—
Plate resistance	5500 ohm	—
Amplification factor	7	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum direct anode voltage	190 V	—

TUBE TINKER

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

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