



ELECTRONIC TUBE REFERENCE

212E

Power - Triode (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

High-power filamentary transmitting triode for RF amplification and oscillator operation. Published ratings place it firmly in heavy transmitting service, with substantial plate voltage, dissipation, and output capability.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	4
NOMINAL HEATER	14 V / 6 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
PLATE RESISTANCE	1900 Ω
TRANSCONDUCTANCE	0.0085 S
AMPLIFICATION FACTOR	16
MAXIMUM PLATE VOLTAGE	3000 V
MAXIMUM PLATE DISSIPATION	325 W
MAXIMUM CATHODE CURRENT	350 mA
<i>Promoted fields mapped from published ratings/characteristics; additional published values preserved in parameter table.</i>	

RF/AF power amplifier, oscillator and modulator triode. The datasheet publishes maximum ratings, typical operating conditions and electrical characteristics.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1945 United Electronics

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

1945 UNITED ELECTRONICS

Section 1 · Triode

CHARACTERISTICS

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage	14 V	—
Filament current	6 A	—
Plate resistance	1900 ohm	—
Mutual conductance	8500 uS	—
Amplification factor	16	—

OTHER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate dissipation	325 W	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 Machlette Laboratories

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

1971 MACHLETTE LABORATORIES

Section 1 · Triode

OTHER

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
amperes apply. at frequencies up to	1.5 A	amperes apply. at frequencies up to 1.5 mc/sec; operation at hausted by a straight-line, high-voltage process assuring the

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published value	4.5 mA	4.5 mc/sec is permissible with plate voltage reduced to same high standards as characterize the Machlett line of
Published value	1	1 kVde. high- and super-voltage x-ray tubes.
Filament Voltage ..o	14 V	Filament Voltage ..o 14 volts
Filament Current at [1]	14 V	Filament Current at 14 volts 6 amperes
Filament Current at [2]	6 V	Filament Current at 14 volts 6 amperes
Grid-Plite Transconductance	8500 uS	Grid-Plite Transconductance 8500 uMhos
Direct Plate Voltage	3000 V	Direct Plate Voltage ... 3000 volts
Dircct Plate Current	350 A	Dircct Plate Current 350 milliamperes
Plate Dissipation	275 W	Plate Dissipation 275 watts
R.F. Grid Current	5 A	R.F. Grid Current 5 amperes
Dircet Plate Current [1]	170 A	Dircet Plate Current 170 200 milliamperes
Dircet Plate Current [2]	200 A	Dircet Plate Current 170 200 milliamperes
Load Impedance ..o, [1]	5000 ohm	Load Impedance ..o, . 5000 3000 ohms
Load Impedance ..o, [2]	3000 ohm	Load Impedance ..o, . 5000 3000 ohms
Urndistorted Output o e e e et ce e e s e snee s [1]	50	Urndistorted Output o e e e et ce e e s e snee s 50 40 watls
Urndistorted Output o e e e et ce e e s e snee s [2]	40	Urndistorted Output o e e e et ce e e s e snee s 50 40 watls
Foad Impedance .o s	8000 ohm	Foad Impedance .o s 8000 ohms
Plate Dissipation [1]	250 W	Plate Dissipation ... 250 250 watts
Plate Dissipation [2]	250 W	Plate Dissipation ... 250 250 watts
Load Resistance (plate-to-plate) o e [1]	8000 ohm	Load Resistance (plate-to-plate) o e 8000 5900 ohms
Load Resistance (plate-to-plate) o e [2]	5900 ohm	Load Resistance (plate-to-plate) o e 8000 5900 ohms
Lovad Resistance (per Tube) e [1]	2000 ohm	Lovad Resistance (per Tube) e 2000 1475 ohms
Lovad Resistance (per Tube) e [2]	1475 ohm	Lovad Resistance (per Tube) e 2000 1475 ohms
Recommended power for driving sEge e [1]	50 W	Recommended power for driving sEge e 50 50 watts
Recommended power for driving sEge e [2]	50 W	Recommended power for driving sEge e 50 50 watts
Dircct Plate Current [1]	300 A	Dircct Plate Current . 300 300 milliamperes

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Dirccct Plate Current [2]	300 A	Dirccct Plate Current . 300 300 milliamperes
Nominal P0wer OQUIPUL oo [1]	400 W	Nominal P0wer OQUIPUL oo 400 300 watts
Nominal P0wer OQUIPUL oo [2]	300 W	Nominal P0wer OQUIPUL oo 400 300 watts
Direct Grid Current [1]	75 A	Direct Grid Current 75 75 milliamperes
Direct Grid Current [2]	75 A	Direct Grid Current 75 75 milliamperes
Nominal Carrier Power Output for use with [1]	10095 W	Nominal Carrier Power Output for use with 10095 modulation ... 300 200 watts
Nominal Carrier Power Output for use with [2]	300 W	Nominal Carrier Power Output for use with 10095 modulation ... 300 200 watts
Nominal Carrier Power Output for use with [3]	200 W	Nominal Carrier Power Output for use with 10095 modulation ... 300 200 watts
Maximum ratings apply at frequencies of	1.5 mA	Maximum ratings apply at frequencies of 1.5 megacycles and should be employed so that the load may be evenly distrib-
woltage for frequencies between [1]	1.5 MHz	woltage for frequencies between 1.5 and 1.5 megacycles according to impedance classification.
woltage for frequencies between [2]	1.5 MHz	woltage for frequencies between 1.5 and 1.5 megacycles according to impedance classification.
hould be proportionately reduced. With a plate voltage of [1]	1500 V	hould be proportionately reduced. With a plate voltage of 1500 volts, a grid bias of -60 volts
hould be proportionately reduced. With a plate voltage of [2]	-60 V	hould be proportionately reduced. With a plate voltage of 1500 volts, a grid bias of -60 volts
Fach ML [1]	212	Fach ML-212E vacuum tube falls within one of four im- and a filament voltage of 14, the plate current will be as fol-
Fach ML [2]	14	Fach ML-212E vacuum tube falls within one of four im- and a filament voltage of 14, the plate current will be as fol-



2026 Western Electric 200s

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

2026 WESTERN ELECTRIC 200S
Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament Voltage	1 Volt	Filament Voltage 1 4 Vo l t s
Nominal Filament Current	6 Amperes	Nominal Filament Current 6 Amperes
Average Plate Resistance	1900 Ohms	Average Plate Resistance 1,900 Ohms
Average A m p l i fi c a t i o n Factor	16	Average A m p l i fi c a t i o n Factor 16
Average Grid Plate Transconductance	8500 Micromhos	Average Grid Plate Transconductance 8,500 Micromhos
With a plate voltage of	1500 volt	With a plate voltage of 1500, a grid bias of -60, and a filament voltage of 14, the plate current will be as
Plate Current	167 Milliamperes	Plate Current 167 Milliamperes
Approximate Grid Bias Voltage	-5 Volt	Approximate Grid Bias Voltage - 5 7 Vo l t s
Load Impedance	5000 Ohms	Load Impedance 5,000 Ohms
Undistorted Output	50 Watts	Undistorted Output 50 Watts
Approximate Grid Bias Voltage	-125 Volt	Approximate Grid Bias Voltage -125 Volts
Peak Output	400 Watts	Peak Output 400 Watts
Approximate Grid Bias Voltage	200 Volt	Approximate Grid Bias Voltage 200 Volts
Filament voltage	14 volt	Filament voltage 14 volts
Nominal fi l a m e n t current	6 amperes	Nominal fi l a m e n t current 6 amperes
Average thermionic emission	4 amperes	Average thermionic emission 4 amperes
Average Characteristics at	2000 volts	Average Characteristics at 2000 volts direct plate potential and minus 90 volts grid bias:
A m p l i fi c a t i o n factor	16	A m p l i fi c a t i o n factor 16
Plate resistance	1900 ohms	Plate resistance 1900 ohms

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid to plate transconductance	8500 micromhos	Grid to plate transconductance 8500 micromhos
With a plate voltage of	1500 volt	With a plate voltage of 1500 volts, a grid bias of —60 volts and a filament voltage of 14, the
Grid bias	-5 volts	Grid bias - 5 7 — 40 volts
Direct plate current	170 milliamperes	Direct plate current. 170 200 milliamperes
Load impedance	5000 ohms	Load impedance. ... 5000 3000 ohms
Undistorted output	50 watts	Undistorted output. 50 40 watts
Direct plate voltage	3000 volt	Direct plate voltage 3000 volts
Grid bias	-260 volts	Grid bias —260 volts
Plate dissipation	175 watts	Plate dissipation 175 watts
Load impedance	8000 ohms	Load impedance 8000 ohms
Peak power output	200 watts	Peak power output 200 watts
Direct plate voltage	2000 volt	Direct plate voltage 2000 2 0 010 5 0 0 1 5 0v
Grid bias	-105 volts	Grid bias —105 —1 70 55 — 75 v ovolts

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	2000 Volt	Maximum Plate Voltage 2,000 Volts
Maximum Plate Current	0.3 Ampere	Maximum Plate Current 0.300 Ampere
Maximum Plate Dissipation	250 Watts	Maximum Plate Dissipation 250 Watts
Maximum Plate Voltage	1500 Volt	Maximum Plate Voltage 1,500 Volts
Maximum Plate Voltage (D.C.)	2000 Volt	Maximum Plate Voltage (D.C.) 2,000 Volts
Maximum Plate Dissipation	275 Watts	Maximum Plate Dissipation 275 Watts
Maximum Plate Current (D.C.)	300 Milliamperes	Maximum Plate Current (D.C.) 300 Milliamperes
Maximum Modulated Plate Voltage (D.C.)	1500 Volt	Maximum Modulated Plate Voltage (D.C.) 1,500 Volts
Maximum Non-Modulated Plate Voltage (D.C.)	2000 Volt	Maximum Non-Modulated Plate Voltage (D.C.) 2,000 Volts
Maximum Plate Current	300 Milliamperes	Maximum Plate Current 300 Milliamperes
Maximum Radio-Frequency Charging Current in Grid and Plate Leads	5 Amperes	Maximum Radio-Frequency Charging Current in Grid and Plate Leads 5 Amperes
Maximum Output	500 Watts	Maximum Output 500 Watts
Max. direct plate voltage	3000 volt	Max. direct plate voltage 3000 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Max. direct plate current	350 milliamperes	Max. direct plate current 350 milliamperes
Max. plate dissipation	275 watts	Max. plate dissipation 275 watts
Max. direct grid current	75 milliamperes	Max. direct grid current 75 milliamperes
Max. r-f grid current	5 amperes	Max. r-f grid current 5 amperes
Max. frequency for the above ratings	1.5 megacycles	Max. frequency for the above ratings 1.5 megacycles
Max. plate voltage for upper frequency limit of	4.5 volt	Max. plate voltage for upper frequency limit of 4.5 Mc 1000 volts
Max. plate voltage for frequencies between	1.5 volt	Max. plate voltage for frequencies between 1.5 and 4.5 Mc in proportion.

TUBE TINKER

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