



ELECTRONIC TUBE REFERENCE

8158

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

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Eimac low-mu air-cooled power triode for high-power audio amplification, modulation, and voltage-regulator service. Approximately 12 kW plate dissipation and very low amplification factor favor high-current linear operation in large professional equipment.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	7.5 V / 10 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
TRANSCONDUCTANCE	0.02 S
AMPLIFICATION FACTOR	6.25
MAXIMUM PLATE VOLTAGE	7000 V
MAXIMUM PLATE DISSIPATION	12000 W
MAXIMUM GRID DISSIPATION	100 W
MAXIMUM CATHODE CURRENT	5 A
<i>Promoted maximum ratings/characteristics populated from published headings; service-specific values retained in parameters.</i>	

EIMAC 8158 is the explicit numeric co-designation printed for 3CX10000A1. Air-cooled low-mu power triode for audio/modulator and voltage-regulator applications.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 Eimac

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

1962 EIMAC

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The Eimac [1]	8158	The Eimac 8158/3CX10,000A1 is a ceramic and metal power triode
The Eimac [2]	3	The Eimac 8158/3CX10,000A1 is a ceramic and metal power triode
The Eimac [3]	0	The Eimac 8158/3CX10,000A1 is a ceramic and metal power triode
the [1]	3 kW	the 3CW20,000A1, is available with a 20 kw dissipation rating.
the [2]	0 kW	the 3CW20,000A1, is available with a 20 kw dissipation rating.
the [3]	20 kW	the 3CW20,000A1, is available with a 20 kw dissipation rating.
Voltage $\phi \ll v$ v	7.5	Voltage $\phi \ll v$.. 7.5 A
Current . v ol v e e e e e [1]	94	Current . v ol v e e e e e 94 104 A
Current . v ol v e e e e e [2]	104	Current . v ol v e e e e e 94 104 A
Amplification Factor [1]	5.5	Amplification Factor 5.5 7.0
Amplification Factor [2]	7	Amplification Factor 5.5 7.0
Output $\ll \ll v v v$ o o [1]	3.4 pF	Output $\ll \ll v v v$ o o 3.4 4.2 pF
Output $\ll \ll v v v$ o o [2]	4.2 pF	Output $\ll \ll v v v$ o o 3.4 4.2 pF
Transconductance (Ib=	2 A	Transconductance (Ib= 2.0 amps, Eb
DC Plate Voltage [1]	7000 V	DC Plate Voltage 7000 7000 volts
DC Plate Voltage [2]	7000 V	DC Plate Voltage 7000 7000 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Grid Voltage" [1]	-1300 V	DC Grid Voltage" —1300 —1300 volts
DC Grid Voltage" [2]	-1300 V	DC Grid Voltage" —1300 —1300 volts
MAXIMUM RATINGS (Per Tube) Zero-Sig DC Plate Current [1]	1.5 A	MAXIMUM RATINGS (Per Tube) Zero-Sig DC Plate Current. . 1.5 1.5 amps
MAXIMUM RATINGS (Per Tube) Zero-Sig DC Plate Current [2]	1.5 A	MAXIMUM RATINGS (Per Tube) Zero-Sig DC Plate Current. . 1.5 1.5 amps
DC Plate Voltage [1]	7000 V	DC Plate Voltage 7000 volts Max-Sig DC Plate Current-. . 5.8 7.0 amps
DC Plate Voltage [2]	5.8 V	DC Plate Voltage 7000 volts Max-Sig DC Plate Current-. . 5.8 7.0 amps
DC Plate Voltage [3]	7 V	DC Plate Voltage 7000 volts Max-Sig DC Plate Current-. . 5.8 7.0 amps
DC Plate Current	5 A	DC Plate Current 5.0 amps Load Resistance,
*Adjust for zero-signal plate current (Per Tube) [1]	1300 V	*Adjust for zero-signal plate current (Per Tube) 1300 1300 volts
*Adjust for zero-signal plate current (Per Tube) [2]	1300 V	*Adjust for zero-signal plate current (Per Tube) 1300 1300 volts
** At max-signal without negative feedback Max [1]	8 W	** At max-signal without negative feedback Max-8ig Driving Power . . . 0 0 watts
** At max-signal without negative feedback Max [2]	0 W	** At max-signal without negative feedback Max-8ig Driving Power . . . 0 0 watts
** At max-signal without negative feedback Max [3]	0 W	** At max-signal without negative feedback Max-8ig Driving Power . . . 0 0 watts
Effective grid circuit resistance must not exceed Output Power [1]	24400 W	Effective grid circuit resistance must not exceed Output Power 24,400 29,100 watts
Effective grid circuit resistance must not exceed Output Power [2]	29100 W	Effective grid circuit resistance must not exceed Output Power 24,400 29,100 watts
DC Plate Voltage [1]	7000 V	DC Plate Voltage 7000 wvoits DC Plate Voltage 2500 volts
DC Plate Voltage [2]	2500 V	DC Plate Voltage 7000 wvoits DC Plate Voltage 2500 volts
DC Plate Current See Class-A derating DC Grid Voitage* ~	290 V	DC Plate Current See Class-A derating DC Grid Voitage* ~290 volts
table on Page [1]	3 A	table on Page 3 DC Plate Current 4.0 amps

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
table on Page [2]	4 A	table on Page 3 DC Plate Current 4.0 amps
Plate Dissipation [1]	12000 V	Plate Dissipation 12,000 watts Peak AF Grid Driving Voltage 290 volts
Plate Dissipation [2]	290 V	Plate Dissipation 12,000 watts Peak AF Grid Driving Voltage 290 volts
Load Resistance	2120 ohm	Load Resistance 2120 ohms
*Adjust to give listed zero-signal DC plate current Plate Output Power	1800 W	*Adjust to give listed zero-signal DC plate current Plate Output Power 1800 watts
MAXIMUM RATINGS DC Plate Voltage (tube drop) [1]	0 V	MAXIMUM RATINGS DC Plate Voltage (tube drop) 0-5000 volts
MAXIMUM RATINGS DC Plate Voltage (tube drop) [2]	-5000 V	MAXIMUM RATINGS DC Plate Voltage (tube drop) 0-5000 volts
DC Plate Voitage [1]	10000 V	DC Plate Voitage 10,000 volts DC Plate Current 0-5 amps
DC Plate Voitage [2]	0 V	DC Plate Voitage 10,000 volts DC Plate Current 0-5 amps
DC Plate Voitage [3]	-5 V	DC Plate Voitage 10,000 volts DC Plate Current 0-5 amps
Plate Dissipation	12000 W	Plate Dissipation 12,000 watts (These values are chosen according to
Grid Dissipation [1]	100 W	Grid Dissipation 100 watts Class-A derating tabie on Page 3)
Grid Dissipation [2]	3 W	Grid Dissipation 100 watts Class-A derating tabie on Page 3)
**Since the power dissipated by the filament is about	750 W	**Since the power dissipated by the filament is about 750 watts and since grid dissipation can, under
tion for an additional	850 W	tion for an additional 850 watts dissipation.
current and voltage are restricted according to the external surfaces of the [1]	3	current and voltage are restricted according to the external surfaces of the 3CX10,000A1 is 250°C, Suf-
current and voltage are restricted according to the external surfaces of the [2]	0	current and voltage are restricted according to the external surfaces of the 3CX10,000A1 is 250°C, Suf-
current and voltage are restricted according to the external surfaces of the [3]	250	current and voltage are restricted according to the external surfaces of the 3CX10,000A1 is 250°C, Suf-

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
the [1]	3 V	the 3CX10,000A1 is 7.5 volts. Filament voltage, as given here, write to Power Grid Tube Marketing,
the [2]	0 V	the 3CX10,000A1 is 7.5 volts. Filament voltage, as given here, write to Power Grid Tube Marketing,
the [3]	7.5 V	the 3CX10,000A1 is 7.5 volts. Filament voltage, as given here, write to Power Grid Tube Marketing,



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1975 Eimac Tube Manual

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

1975 EIMAC TUBE MANUAL

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	7	—
Transconductance	20000 μ S	—
Heater/filament voltage	7.5 V	—
Heater/filament current	104 A	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	10000 V	—
Maximum plate dissipation	12000 W	—
Maximum grid dissipation	100 W	—
Maximum cathode/plate current	5 A	—
Frequency for maximum ratings	110 MHz	—
Audio-service maximum plate voltage	7000 V	Audio

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical push-pull plate voltage	7000 V	ClassB

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input/grid-filament capacitance	51–51 pF	—
Output/plate-filament capacitance	4.1–4.1 pF	—
Feedback/grid-plate capacitance	28.5–28.5 pF	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling	Forced air	—



SOURCE OPERATING CONDITIONS

1976 Eimac Tube Manual

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CHARACTERISTIC		
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Heater/filament current	104 A	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	10000 V	—
Maximum plate dissipation	12000 W	—
Maximum grid dissipation	100 W	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum cathode/plate current	5 A	—
Frequency for maximum ratings	110 MHz	—
Audio-service maximum plate voltage	7000 V	Audio
Typical push-pull plate voltage	7000 V	ClassB

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input/grid-filament capacitance	51–51 pF	—
Output/plate-filament capacitance	4.1–4.1 pF	—
Feedback/grid-plate capacitance	28.5–28.5 pF	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling	Forced air	—

TUBE TINKER

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