



ELECTRONIC TUBE REFERENCE

3CX10000H3

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

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Ceramic-metal industrial power triode designed for high-power RF amplifier, oscillator, or modulator service. Manufacturer data emphasize transmitting duty, substantial plate dissipation, and the cooling provisions required for continuous professional operation.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	7.5 V / 99 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	10000 V
MAXIMUM PLATE DISSIPATION	10000 W
MAXIMUM GRID DISSIPATION	250 W
MAXIMUM CATHODE CURRENT	4 A
<i>Single triode section; promoted values mapped from printed General Characteristics and Maximum Ratings headings.</i>	

The EIMAC 3CX10000H3 is a air-cooled ceramic/metal industrial medium-mu power triode for rf heating service.

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

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
reserve emission is available from its 750 watt filament. The grid structure	750 watt	reserve emission is available from its 750 watt filament. The grid structure
is rated at 250 watts, making this tube an excellent choice for severe appli	250 watts	is rated at 250 watts, making this tube an excellent choice for severe appli-
Voltage S 7.5 Volts	7.5 Volts	GeneralCharacteristics Voltage S 7.5 Volts
Current	94 Amps	GeneralCharacteristics Current - - - - - 94 104 Amps
Amplification Factor	20	GeneralCharacteristics Amplification Factor - - - - - 20
Grid-Plate	30 uuf	GeneralCharacteristics Grid-Plate - - - - - 30 38 uuf (

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Operating Temperature	250 °C	Maximum Operating Temperature - - - - - 250°C
Net Weight	12 Pounds	Net Weight - - - - - <« - - - - - 12 Pounds
Class-C (Filtered DC Power Supply) DC Plate Voltage 7000 9000 Volts	7000 Volts	RF INDUSTRIAL OSCILLATOR TYPICAL OPERATION* Class-C (Filtered DC Power Supply) DC Plate Voltage 7000 9000 Volts
DC Plate Current	4 Amps	RF INDUSTRIAL OSCILLATOR TYPICAL OPERATION* DC Plate Current - - 4.0 4.0 Amps
CURRENT	10000 VOLTS	MaximumRatings CURRENT -- 10,000 VOLTS : Current

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
4.0 AMPS Peak Positive Grid Voltage	4 AMPS	MaximumRatings 4.0 AMPS Peak Positive Grid Voltage
DC GRID VOLTAGE	1000 VOLTS	MaximumRatings DC GRID VOLTAGE - —1000 VOLTS 260 570 Watts
DC GRID CURRENT	0.6 AMP	MaximumRatings DC GRID CURRENT - 0.6 AMP Plate Input Power - - 28 36 kW
PLATE INPUT POWER 40 KW	40 KW	MaximumRatings PLATE INPUT POWER 40 KW
- - 9 7 kW	9 kW	MaximumRatings - - 9 7 kW
0 Kw Plate Output Power	0 Kw	MaximumRatings 0 Kw Plate Output Power - - 19 29 kw
*Loaded Conditions Approximate Load Impedance	720 Ohms	MaximumRatings *Loaded Conditions Approximate Load Impedance - 720 1100 Ohms
3CX10,000H3 is 7.5 volts. Filament voltage, as ed vertically, either base up or down. A grid	3 volts	3CX10,000H3 is 7.5 volts. Filament voltage, as ed vertically, either base up or down. A grid
vary from 7.5 volts by more than plus or minus Cooling	7.5 volts	vary from 7.5 volts by more than plus or minus Cooling — The maximum temperature rating
is 250°C. Sufficient forced-air cocling must be	250 °C	is 250°C. Sufficient forced-air cocling must be
ing is 0.6 ampere dc. This value should not be	0.6 ampere	ing is 0.6 ampere dc. This value should not be
seals below 250°C. Tube life is usually pro	250 °C	seals below 250°C. Tube life is usually pro-
will not be necessary to operate with more than and seal temperatures below 225°C with an	225 °C	will not be necessary to operate with more than and seal temperatures below 225°C with an
inlet-air temperature of 50°C are tabulated	50 °C	inlet-air temperature of 50°C are tabulated.
0.2 to 0.4 amp grid current to obtain reasonable	0.2 amp	0.2 to 0.4 amp grid current to obtain reasonable
efficiency. In industrial heating service with Sea Level 5000 Feet	5000	efficiency. In industrial heating service with Sea Level 5000 Feet
imum grid dissipation rating is 250 watts. 4000 85 0.18 105 0.21	250 watts	imum grid dissipation rating is 250 watts. 4000 85 0.18 105 0.21

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
over at the load. In addition current limiting **Since the power dissipated by the filament is about 750 watts and since grid	750 watts	over at the load. In addition current limiting **Since the power dissipated by the filament is about 750 watts and since grid
dissipation can, under some circumstances, represent another 25 watts, allow	25 watts	dissipation can, under some circumstances, represent another 25 watts, allow-
power supply resistors should be used. These ance has been made in preparing this tabulation for an additional 1000 watts	1000 watts	power supply resistors should be used. These ance has been made in preparing this tabulation for an additional 1000 watts
Spark gaps from plate to ground should be tact ring by a 1%' 1.D. air duct arranged at a	1 a	Spark gaps from plate to ground should be tact ring by a 1%' 1.D. air duct arranged at a
is usable to 140 Mc. At this frequency, plate volt- Eimac, A Division of Varian Associates Inc., 301	140 Mc	is usable to 140 Mc. At this frequency, plate volt- Eimac, A Division of Varian Associates Inc., 301
age must be reduced to 7000 volts in Class C Industrial Way, San Carlos, Calif. for informa	7000 volts	age must be reduced to 7000 volts in Class C Industrial Way, San Carlos, Calif. for informa-
A 6.928 7.050	6.928 A	A 6.928 7.050
V .2s0	2 V	V .2s0
V) /2 HILES	2 V	V) /2 HILES



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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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	20	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament voltage	7.5 V	—
Heater/filament current	99 A	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	10000 V	—
Maximum plate dissipation	10000 W	—
Maximum grid dissipation	250 W	—
Maximum cathode/plate current	4 A	—
Frequency for maximum ratings	140 MHz	—
Plate input power maximum	40000 W	IndustrialRF
Typical plate voltage	9000 V	ClassC

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input/grid-filament capacitance	48–58 pF	—
Output/plate-filament capacitance	1.2–1.5 pF	—
Feedback/grid-plate capacitance	30–38 pF	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling	Forced air	—



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1976 Eimac Tube Manual

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1976 EIMAC TUBE MANUAL

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	20	—
Heater/filament voltage	7.5 V	—
Heater/filament current	99 A	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	10000 V	—
Maximum plate dissipation	10000 W	—
Maximum grid dissipation	250 W	—
Maximum cathode/plate current	4 A	—
Frequency for maximum ratings	140 MHz	—
Plate input power maximum	40000 W	IndustrialRF
Typical plate voltage	9000 V	ClassC

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input/grid-filament capacitance	48–58 pF	—
Output/plate-filament capacitance	1.2–1.5 pF	—
Feedback/grid-plate capacitance	30–38 pF	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling	Forced air	—



SOURCE DATA APPENDIX

199X Svetlana

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

199X SVETLANA
Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Current @	7.5 V	amplifier, oscillator, or modulator service. The
Input	53 pF	amplifier, oscillator, or modulator service. The
Output	1.5 pF	amplifier, oscillator, or modulator service. The
Feedback	34 pF	amplifier, oscillator, or modulator service. The
Maximum frequency for full ratings (CW)	90 MHz	amplifier, oscillator, or modulator service. The

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC plate voltage	10000 V	Maximum Ratings
DC plate current	5 A	Maximum Ratings
Plate dissipation	10000 W	Maximum Ratings
Grid dissipation	250 W	Maximum Ratings
DC grid voltage	-1000 V	Maximum Ratings
DC grid current	600 mA	Maximum Ratings
Plate input power	40000 W	Maximum Ratings
(Frequencies to	30 MHz	Typical Operation
DC plate voltage 7000	9000 V	Typical Operation
DC plate current 4.0	4 A	Typical Operation
DC grid voltage* -670	-930 V	Typical Operation
DC grid current* 275	430 mA	Typical Operation
Peak RF grid voltage* 340	390 V	Typical Operation
Driving Power* 260	570 W	Typical Operation
Plate input power 28,000	36000 W	Typical Operation
Plate dissipation 9000	7000 W	Typical Operation
Plate output power 19,000	29000 W	Typical Operation

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Approximate load impedance 720	1100 Ohms	Typical Operation
DC plate voltage	7500 V	Maximum Ratings (per tube)
DC plate current	5 A	Maximum Ratings (per tube)
Plate dissipation	12000 W	Maximum Ratings (per tube)
Grid dissipation	250 W	Maximum Ratings (per tube)
obtained to	140 MHz	obtained to 140 MHz. Class C service at
the ceramic/metal seals below	250 °C	obtained to 140 MHz. Class C service at
temperatures below	225 °C	obtained to 140 MHz. Class C service at
air temperature of	40 °C	obtained to 140 MHz. Class C service at
leads. At frequencies above	30 MHz	obtained to 140 MHz. Class C service at

TUBE TINKER

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