

ELECTRONIC TUBE REFERENCE

4CX3500A

Power - Beam (NOT sweep) (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
BEAMPOWER

High-power ceramic/metal tetrode for RF transmitter amplification and modulation service, combining kilowatt-class dissipation with high plate voltage for broadcast and industrial transmitters.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	24 V / —	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Beam Power	
MAXIMUM PLATE VOLTAGE	6000 V
MAXIMUM SCREEN VOLTAGE	1500 V
MAXIMUM PLATE DISSIPATION	3500 W
MAXIMUM SCREEN DISSIPATION	165 W
MAXIMUM GRID DISSIPATION	50 W
Single electrical section; values mapped from printed ratings/characteristics.	

The EIMAC 4CX3500A 1s a compact ceramic/metal radia! beam power tetrode intended for use in VHF power amplifier applications. I+t features a type of Internal mechanical structure which results In high rf operating efficiency. Low rf losses In this structure per- mit operation at full ratings to 220 MHz. The 4CX3500A has a galn of over 18 dB in FM broadcast service, and is also recommended for rf |linear power amp!ifier service and for VHF-TV linear amplifier service. The anode is rated for 3500 watts of dissipation with forced-alr cooling.

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 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The EIMAC	1 a	The EIMAC 4CX3500A 1s a compact ceramic/metal radia! beam power
mit operation at full ratings to	220 MHz	mit operation at full ratings to 220 MHz.
The	18 a	The 4CX3500A has a galn of over 18 dB in FM broadcast service,
Current, at	90 volts	Current, at 5.0 volts « ¢ o o o ¢ o o o o & 90 A
CIN ¢ o o o o o o o o s	0 pF	CIN ¢ o o o o o o o o s 6 s ¢ o o ¢ o s o o o s 0 s s o o & = « o e e T pF
COUt o o o o e o o o o o ¢ ¢ o o o o	12 pF	COUt o o o o e o o o o o ¢ ¢ o o o o 8 o o 0 0 s 086 0 9 0 0 0o 12 pF
COP o ¢ ¢ o o o o ¢ o o o o o ¢ s s o o s s » ¢ o e o o o o e o o	0.5 pF	COP o ¢ ¢ o o o o ¢ o o o o o ¢ s s o o s s » ¢ o e o o o o e o o 0.5 pF
CiN o o o o o ¢ e o s o o o o o a o ¢ s o o o	58.5 a	CiN o o o o o ¢ e o s o o o o o a o ¢ s o o o 8 6 06 8 s s o e o o s 58.5 pF
CoOUT o o o ¢ o o o o s o o o	10 a	CoOUT o o o ¢ o o o o s o o o 6 o a 5 s s o s 8 8 0 o 0 5 0 0 c e e 10 pF
CPK e o o o o o o o ¢ o ¢ o o s s s o o s s s o o	0.4 pF	CPK e o o o o o o o ¢ o ¢ o o s s s o o s s s o o 6 o 2 o o o « s o e 0.4 pF
Maximum Frequency for Full Ratings (CW) =« « o o o ¢ o ¢ ¢ ¢« o o @ e e o	220 MHz	Maximum Frequency for Full Ratings (CW) =« « o o o ¢ o ¢ ¢ ¢« o o @ e e o 220 MHz
CoOLING o o o o o ¢ o o « o o o ¢ o ¢ o o	8 a	CoOLING o o o o o ¢ o o « o o o ¢ o ¢ o o 8 s o 6 o o ¢ 8 a s o o o Forced Air
RADIO FREQUENCY POWER AMPLIFIER TYPICAL OPERATION (frequencies t+o	30 MHz	RADIO FREQUENCY POWER AMPLIFIER TYPICAL OPERATION (frequencies t+o 30 MHz)

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC PLATE VOLTAGE	21 VOLTS	DC PLATE VOLTAGE 6000 VOLTS GridCurrent * o o ¢ s o s s o & 59 21 mAdc
DC GRID VOLTAGE ~	7 VOLTS	DC GRID VOLTAGE ~-500 VOLTS Calculated Driving Power « « . « 25 7 W
DC PLATE CURRENT	640 AMPERES	DC PLATE CURRENT 2.0 AMPERES Plate Dissipation ®* .« « 4 « « & 1320 640 L)
PLATE DISSIPATION	3360 WATTS	PLATE DISSIPATION 3500 WATTS Plate Output Power * « ¢ « « & « « & 5280 3360 W
SCREEN DISSIPATION	2700 WATTS	SCREEN DISSIPATION 165 WATTS Load Impedance e s e o s s o 1700 2700 Ohms
GRID DISSIPATION	50 WATTS	GRID DISSIPATION 50 WATTS
RADIO FREQUENCY POWER AMPLIFIER MEASURED DATA AT	100.5 MHZ	RADIO FREQUENCY POWER AMPLIFIER MEASURED DATA AT 100.5 MHZ
DC PLATE VOLTAGE	123 VOLTS	DC PLATE VOLTAGE 6000 VOLTS Screen Current ®* . ¢ ¢ o & o & 140 123 mAdc
DC SCREEN VOLTAGE	400 VOLTS	DC SCREEN VOLTAGE 1500 VOLTS Grid Voltage « « ¢ « ¢ « ¢ « o & -300 -400 Vdc
DC GRID VOLTAGE	63 VOLTS	DC GRID VOLTAGE -500 VOLTS Grid Current ® .« ¢ « ¢ ¢ o « o & 84 63 mAdc
DC PLATE CURRENT	5531 AMPERES	DC PLATE CURRENT 2.0 AMPERES Useful Power Out * # « 3838 5531 w
PLATE DISSIPATION	68 WATTS	PLATE DISSIPATION 3500 WATTS Efficiency ¥ « o o o ¢ o o o & 64 68 b4
SCREEN DISSIPATION	66 WATTS	SCREEN DISSIPATION 165 WATTS Driving Power * o « ¢ o ¢ « ¢ & 56 66 W
GRID DISSIPATION	19.2 WATTS	GRID DISSIPATION 50 WATTS Power Gain ®* « « « o o ¢ o « o 18.4 19.2 a8
level and with cooling air at	50 A	level and with cooling air at 50 Deg.C maximum, service. A reduction in filament voltage will
for frequencies below	110 MHZ	for frequencies below 110 MHz, and with the tube lower the filament temperature, which will sub-
a chimney in place, a minimum of	241 a	a chimney in place, a minimum of 241 CFM of air value of filament voltage should be determined for
dissipation is	50 watts	dissipation is 50 watts, determined approximately by
dissipation is	165 watts	dissipation is 165 watts. With no ac applied to the switches must not be bypassed or "cheated" +to

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
present, since screen dissipation ratings will be ent on frequency. Under	300 MHz	present, since screen dissipation ratings will be ent on frequency. Under 300 MHz most of the energy
indictions on the screen current meter. This Is a to	10 a	indictions on the screen current meter. This Is a to 10 mil iwatts per square centimeter.
supply and to discharge high-voltage capacltors San Carlos, CA	94070 A	supply and to discharge high-voltage capacltors San Carlos, CA 94070 U.S.A.
'EE%	4 A	'EE%4Q@&»A



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

199X Svetlana

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

199X SVETLANA

Section 1 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Voltage	6000 V	—
Maximum Screen Voltage	1500 V	—
Maximum Plate Dissipation	3500 W	—
Maximum Screen Dissipation	165 W	—

TUBE TINKER

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

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