



ELECTRONIC TUBE REFERENCE

4CX7500A

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

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
BEAMPOWER

Large forced-air ceramic power tetrode designed for high-power RF transmitter service, providing several kilowatts of plate dissipation for broadcast and industrial applications.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	300 V / 110 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Beam Power	
MAXIMUM PLATE VOLTAGE	7500 V
MAXIMUM SCREEN VOLTAGE	1500 V
MAXIMUM PLATE DISSIPATION	7500 W
MAXIMUM SCREEN DISSIPATION	165 W
MAXIMUM GRID DISSIPATION	50 W
Single electrical section; values mapped from printed ratings/characteristics.	

The EIMAC 4CX7500A is a compact ceramic/metal radial beam power tetrode intended for use in VHF power amplifier applications. It features a type of internal mechanical structure which results in high rf operating efficiency. Low rf losses in this structure permit operation at full ratings to 220 MHz. A dense mesh filament is used which contributes to the high performance capability.

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	500 a	The EIMAC 4CX7500A is a compact ceramic/metal radial beam power tetrode intended for use in VHF power amplifier applications. It features a type of
internal mechanical structure which results in high rf operating efficiency. Low rf losses	220 MHz	internal mechanical structure which results in high rf operating efficiency. Low rf losses in this structure permit operation at full ratings to 220 MHz. A dense
The	20 a	The 4CX7500A has a gain of over 20 dB in FM broadcast service, and is also recommended for rf linear power amplifier service and for VHF-TV linear
amplifier service. The anode is rated for	7500 watts	amplifier service. The anode is rated for 7500 watts of dissipation with forced air cooling.
CuIment, At	110 A	CuIment, At 7.0 VOIS ..\ oottt e e e e e 110 A
N oo	74.1 pF	N oo 74.1 pF
G0t .o e e	206 pF	G0t .o e e 206 pF
Maximum Frequency for Full Ratings (CW) i e e	220 MHz	Maximum Frequency for Full Ratings (CW) i e e 220 MHz
*Capacitance values are for a cold tube as measured in a special shielded fixture in accor	191 a	*Capacitance values are for a cold tube as measured in a special shielded fixture in accordance with Electronic Industries Association Standard RS-191.
Maximum Operating Temperature, Ceramic/Meta! Seals & Anode Core	250 °C	Maximum Operating Temperature, Ceramic/Meta! Seals & Anode Core 250°C
Available Screen Grid Bypass Capacitor Kit for SK	355 pF	Available Screen Grid Bypass Capacitor Kit for SK-350 or SK-360 (8000 pF @ S000DCWV) o iiiiiiiiiiiinnnnn.. EIMAC SK-355

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Class C Telegraphy or FM (Measured data in EIMAC CV	100.5 MHz	Class C Telegraphy or FM (Measured data in EIMAC CV2228 FM cavity at 100.5 MHz)
DCPLATEVOLTAGE vte	24 VOLTS	DCPLATEVOLTAGE vte 7500 VOLTS Plate Current 2.1 22 24 Adc
DCSCREENVOLTAGE	140 VOLTS	DCSCREENVOLTAGE 1500 VOLTS ScreenCurrent 195 128 140 mAdc
DCGRIDVOLTAGE covivenn	95 VOLTS	DCGRIDVOLTAGE covivenn 500 VOLTS GridCurrent 185 90 95 mAdc
DCPLATECURRENT cco..e	130 AMPERES	DCPLATECURRENT cco..e. 3.0 AMPERES Driving Power 247 100 130 w
PLATE DISSIPATION	77 WATTS	PLATE DISSIPATION 7500 WATTS Efficiency 79.3 776 77.0 %
SCREEN DISSIPATION	121 WATTS	SCREEN DISSIPATION 165 WATTS Useful Output Power 10.8 1.1 121 kW
GRIDDISSIPATION ciennn	19.7 WATTS	GRIDDISSIPATION ciennn. 50 WATTS Power Gain 16 20 19.7 dB
Class AB	30 MHz	Class AB1 Conditions (frequencies below 30 MHz)
DCPLATEVOLTAGE	22 VOLTS	DCPLATEVOLTAGE 7500 VOLTS Max. Signal Plate Current 22 Adc
DCSCREENVOLTAGE	1250 VOLTS	DCSCREENVOLTAGE 1500 VOLTS ScreenVoltage l 1250 Vde
DCGRIDVOLTAGE o..t	500 VOLTS	DCGRIDVOLTAGE o..t -500 VOLTS Screen Current g5 mAdc
DCPLATECURRENT	190 AMPERES	DCPLATECURRENT 3.0 AMPERES Grid Bias Voltage™ -190 Vde
PLATE DISSIPATION	0 WATTS	PLATE DISSIPATION 7500 WATTS Grid Current' 0 mAdc
SCREEN DISSIPATION	10 WATTS	SCREEN DISSIPATION 165 WATTS Useful Power Out™ 10 KW
GRID DISSIPATION t	0 WATTS	GRID DISSIPATION t 50 WATTS Driving Power o i 0 W
* Approximate Value	32 dB	* Approximate Value 3rdOrderProducts c.ov... -32 dB
» Adjust to specified zero- signal plate current SthOrderProducts	44 dB	» Adjust to specified zero-signal plate current SthOrderProducts -44 dB

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
and SK	350 Watts	and SK-350 are designed especially for the concentric base terminals of Watts CFM In. Water
selected in a given application must be capable of supplying the desired	1.8 a	selected in a given application must be capable of supplying the desired 5000 280 1.8
air flow at a back pressure sufficient for the tube, plus any drop caused	79 a	air flow at a back pressure sufficient for the tube, plus any drop caused 7500 592 79
Inlet Air Temperature =	25 °C	Inlet Air Temperature = 25°C Watts CEM In. Water
Watts CEM In. Water With operation at plate dissipation below	5 Watts	Watts CEM In. Water With operation at plate dissipation below 5.0 kW and lower air flow
Watts CFM in. Water Application Bulletin #	20 Watts	Watts CFM in. Water Application Bulletin #20 titled TEMPERATURE MEASUREMENTS WITH
Inlet Air Temperature =	35 °C	Inlet Air Temperature = 35°C filters, rf seal heating, and dirty anode cooling fins if the tube has been
rechecked after	300 MHz	rechecked after 24 hours. Filament voltage should be closely regulated is dependent on frequency. Under 300 MHz most of the energy will pass
GRID OPERATION - The maximum control grid dissipation is	50 watts	GRID OPERATION - The maximum control grid dissipation is 50 watts, INTERELECTRODE CAPACITANCE - The actual internal interelectrode
connected tube. A series regulated power supply can be used only when Grid & X-Ray Tube Pr	301 A	connected tube. A series regulated power supply can be used only when Grid & X-Ray Tube Products, Attn: Product Manager; 301 Industrial Way;
an adequate bleeder resistor is provided. San Carlos, CA	94070 A	an adequate bleeder resistor is provided. San Carlos, CA 94070 U.S.A.
SCREEN VOLTAGE =	500 VOLTS	SCREEN VOLTAGE = 500 VOLTS
SCREEN VOLTAGE =	650 VOLTS	SCREEN VOLTAGE =650 VOLTS
T LSRRIR IR IR afanst B	11 A	T LSRRIR IR IR afanst B 11 B oR A cE D
v e e ee I	19 A	v e e ee I 19 SR SR A — > N s



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
HeaterVoltageNominal	7 V	Nominal
HeaterCurrentNominal	110 A	Nominal
Maximum Plate Voltage	7500 V	—
Maximum Screen Voltage	1500 V	—
Maximum Plate Dissipation	7500 W	—
Maximum Screen Dissipation	165 W	—