

ELECTRONIC TUBE REFERENCE

4CX35000A

Power - Tetrode (NOT beam) (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TETRODE

Forced-air ceramic power tetrode for roughly 50 kW transmitter output, supporting Class-C and AB RF amplification, oscillation, and push-pull AF amplifier or modulator service to about 110 MHz.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	10 V / 300 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Tetrode	
AMPLIFICATION FACTOR	5.5
MAXIMUM PLATE VOLTAGE	10000 V
MAXIMUM SCREEN VOLTAGE	2500 V
MAXIMUM PLATE DISSIPATION	35000 W
MAXIMUM SCREEN DISSIPATION	1500 W
MAXIMUM GRID DISSIPATION	450 W
MAXIMUM CATHODE CURRENT	10 A
Single electrical section; values mapped from printed ratings/characteristics.	

The Eimac 4CX35,000A and 4CX35,000C ceramic-metal power tetrodes are intended for use at the fifty kilowatt output power level, The 4CX35,000A is recommended for use as a Class-C r-f amplifier or oscillator, Class-ABy r-f amplifier, or Class-AB] push-pull a-f amplifier or modulator. The 4CX35,000C is a

special version with a longer screen-anode insulator intended specifically for use as a plate-and screen-modulated Class-C r-f amplifier. Both types carry full ratings to 110 megacycles,

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 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
for use at the fifty kilowatt output power level, The	5000 kilowatt	for use at the fifty kilowatt output power level, The 4CX35,000A is recommended
Class-AB] push-pull a-f amplifier or modulator. The	5000 a	Class-AB] push-pull a-f amplifier or modulator. The 4CX35,000C is a special version
Voltage	10 Volts	Voltage - - - - - 10.0 Volts
Current	300 Amperes	Current - - - - - 300 Amperes
Feedback	2.3 uuf	Feedback - - - 2,3 2.3 uuf
Frequency for Maximum Ratings	110 Megacycles	Frequency for Maximum Ratings - - - - 110 Megacycles
Maximum Seal Temperature	250 °C	Maximum Seal Temperature - - - 250°C
Maximum Anode Core Temperature	250 °C	Maximum Anode Core Temperature - - - - 250°C
D-C PLATE VOLTAGE	10000 VOLTS	D-C PLATE VOLTAGE - - - - - 10,000 VOLTS
D-C SCREEN VOLTAGE	2500 VOLTS	D-C SCREEN VOLTAGE - - - - - 2500 VOLTS
D-C PLATE CURRENT	10 AMPERES	D-C PLATE CURRENT - - - - - 10.0 AMPERES
PLATE DISSIPATION	35000 WATTS	PLATE DISSIPATION - - - - - 35,000 WATTS
SCREEN DISSIPATION	1500 WATTS	SCREEN DISSIPATION - - - - - 1500 WATTS
GRID DISSIPATION	450 WATTS	GRID DISSIPATION - - - - - 450 WATTS
D-C Plate Voltage	10000 Volts	D-C Plate Voltage - - - - - 10,000 Volts
D-C Screen Voltage	750 Volts	D-C Screen Voltage - - - - - 750 Volts
D-C Grid Voltage	425 Volts	D-C Grid Voltage - - - - - 425 Volts
D-C Plate Current	6.8 Amperes	D-C Plate Current - - - - - 6.80 Amperes
D-C Screen Current	925 Ma	D-C Screen Current - - - - - 925 Ma
D-C Grid Current	320 Ma	D-C Grid Current - - - - - 320 Ma

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak R-F Grid Voltage	575 Volts	Peak R-F Grid Voltage - - - - 575 Volts
Driving Power	185 Watts	Driving Power - - - - 185 Watts
Plate Dissipation	11700 Watts	Plate Dissipation - - - - 11,700 Watts
Plate Output Power	56500 Watts	Plate Output Power - - - - 56,500 Watts
D-C PLATE VOLTAGE	10000 VOLTS	D-C PLATE VOLTAGE - - - . 10,000 VOLTS
D-C SCREEN VOLTAGE	1250 VOLTS	D-C SCREEN VOLTAGE - - - - 1250 VOLTS
D-C PLATE CURRENT	10 AMPERES	D-C PLATE CURRENT - - - - 10.0 AMPERES
PLATE DISSIPATION	23500 WATTS	PLATE DISSIPATION - - - - 23,500 WATTS
SCREEN DISSIPATION	1500 WATTS	SCREEN DISSIPATION - - - - 1500 WATTS
GRID DISSIPATION	450 WATTS	GRID DISSIPATION - - - - 450 WATTS
D-C Plate Voltage	10000 Volts	D-C Plate Voltage - - - - 10,000 Volts
D-C Screen Voltage	750 Volts	D-C Screen Voltage - - - - 750 Volts
Peak A-F Screen Voltage (for	705 A	Peak A-F Screen Voltage (for 100-percent modulation)* - 705 Volts
D-C Grid Voltage	525 Volts	D-C Grid Voltage - - - - -525 Volts
D-C Plate Current	6.7 Amperes	D-C Plate Current - - - - 6.70 Amperes
D-C Screen Current	1.05 Amperes	D-C Screen Current - - - - 1.05 Amperes
D-C Grid Current	315 Ma	D-C Grid Current - - - - 315 Ma
Peak R-F Grid Voltage	680 Volts	Peak R-F Grid Voltage - - - - 680 Volts
Driving Power	215 Watts	Driving Power - - - - 215 Watts
Plate Dissipation (at	17100 Watts	Plate Dissipation (at 100% Modulation)* - - - 17,100 Watts
Plate Output Power	55600 Watts	Plate Output Power - - - - 55,600 Watts
D-C PLATE VOLTAGE	10000 VOLTS	D-C PLATE VOLTAGE - - - - 10,000 VOLTS
D-C SCREEN VOLTAGE	2500 VOLTS	D-C SCREEN VOLTAGE - - - - 2500 VOLTS
D-C PLATE CURRENT	10 AMPERES	D-C PLATE CURRENT - - - - 10.0 AMPERES
PLATE DISSIPATION	35000 WATTS	PLATE DISSIPATION - - - - 35,000 WATTS
SCREEN DISSIPATION	1500 WATTS	SCREEN DISSIPATION - - - - 1500 WATTS
GRID DISSIPATION	450 WATTS	GRID DISSIPATION - - - - 450 WATTS
D-C Plate Voltage	10000 Volts	D-C Plate Voltage - - - - 10,000 Volts
D-C Screen Voltage	1500 Volts	D-C Screen Voltage - - - - 1500 Volts
D-C Grid Voltage *	290 Volts	D-C Grid Voltage * - - - - -290 Volts
Zero-Sig D-C Plate Current	2 Amperes	Zero-Sig D-C Plate Current - - - - 2.00 Amperes

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Max-Sig D-C Plate Current	8.75 Amperes	Max-Sig D-C Plate Current - - - - 8.75 Amperes
Max-Sig D-C Screen Current	270 Ma	Max-Sig D-C Screen Current - - - - 270 Ma
Peak R-F Grid Voltage	265 Volts	Peak R-F Grid Voltage - - - - - 265 Volts
Driving Power	0 Watts	Driving Power - - - - - 0 Watts
Plate Dissipation	32500 Watts	Plate Dissipation - - - - - 32,500 Watts
Max-Sig Plate Output Power	55000 Watts	Max-Sig Plate Output Power . - - - - 55,000 Watts
Resonant Load Impedance	590 Ohms	Resonant Load Impedance - - - - - 590 Ohms
D-C PLATE VOLTAGE	10000 VOLTS	D-C PLATE VOLTAGE - - - - - 10,000 VOLTS
D-C SCREEN VOLTAGE	2500 VOLTS	D-C SCREEN VOLTAGE - - - - - 2500 VOLTS
D-C PLATE CURRENT	10 AMPERES	D-C PLATE CURRENT - - - - - 10.0 AMPERES
PLATE DISSIPATION	35000 WATTS	PLATE DISSIPATION - - - - - 35,000 WATTS
SCREEN DISSIPATION	1500 WATTS	SCREEN DISSIPATION - - - - - 1500 WATTS
GRID DISSIPATION	450 WATTS	GRID DISSIPATION - - - - - 450 WATTS
D-C Plate Voltage - - - Co	10000 Volts	D-C Plate Voltage - - - Co- - 10,000 Volts
D-C Screen Voltage	1500 Volts	D-C Screen Voltage - - - - 1500 Volts
D-C Grid Voltage *	290 Volts	D-C Grid Voltage * - - - - -290 Volts
Zero-Sig D-C Plate Current	4 Amperes	Zero-Sig D-C Plate Current - - - 4.00 Amperes
Max-Sig D-C Plate Current	17.5 Amperes	Max-Sig D-C Plate Current - - - - 17.5 Amperes
Max-Sig D-C Screen Current	540 Ma	. Max-Sig D-C Screen Current - - - - 540 Ma
Peak A-F Driving Voltage (Per Tube)	265 A	Peak A-F Driving Voltage (Per Tube) - - - 265 Volts
Driving Power	0 Watts	Driving Power - - - - - 0 Watts
Load Resistance, Plate-to-Plate	1180 Ohms	Load Resistance, Plate-to-Plate - - 1180 Ohms
Plate Dissipation (Per Tube)	32500 Watts	Plate Dissipation (Per Tube) - - - 32,500 Watts
Max-Sig Plate OOutput Power	110000 Watts	Max-Sig Plate OOutput Power - - - 110,000 Watts
and the	250 °C	and the 4CX35,000C is 250°C, Sufficient forced-air cooling must be provided to
seals below	250 °C	seals below 250°C. Tube life is usually prolonged if these areas are maintained
maintain anode-core and seal temperatures below	225 °C	maintain anode-core and seal temperatures below 225°C with an inlet-air temper-
ature of	30 °C	ature of 50°C are tabulated below for operation below 30 Mc. These data are for

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
*% Since the power dissipated by the filament represents about	3000 watts	*% Since the power dissipated by the filament represents about 3000 watts and since
watts, allowance has been made in preparing this tabulation for an additional	5000 watts	watts, allowance has been made in preparing this tabulation for an additional 5000



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1965 Eimac Tube Manual

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

1965 EIMAC TUBE MANUAL Section 1 · Tetrode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/Filament Voltage	10 V	—
Heater/Filament Current	300 A	—
Amplification Factor	5.5	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum DC Plate Voltage	10000 V	—
Maximum DC Screen Voltage	2500 V	—
Maximum Plate/Cathode Current	10 A	—
Maximum Plate Dissipation	35000 W	—
Maximum Screen Dissipation	1500 W	—
Maximum Grid Dissipation	450 W	—
Frequency for Maximum Ratings	110 MHz	—
Typical Plate Output Power	56.5 W	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling	Forced air	—