



ELECTRONIC TUBE REFERENCE

4CX35000D

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

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
TETRODE

Massive forced-air-cooled tetrode with 35 kW plate dissipation for 50-150 kW-class RF and audio/modulator service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	— / 290 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Tetrode	
AMPLIFICATION FACTOR	45
MAXIMUM PLATE VOLTAGE	20000 V
MAXIMUM SCREEN VOLTAGE	2500 V
MAXIMUM PLATE DISSIPATION	35000 W
MAXIMUM SCREEN DISSIPATION	1750 W
MAXIMUM GRID DISSIPATION	500 W
Single electrical section; values mapped from printed ratings/characteristics.	

The EIMAC 4CX35,000D0 is a ceramic/metal forced-air cooled power tetrode intended for use at the 50 to 150 kW output power level. It is recommended for use as a Class-C rf amplifier, a Class-AB rf linear amplifier, or a Class-AB push-pull audio amplifier or modulator. It is also useful as a plate and screen modulated Ctass-C rf amplifier, The tube utilizes a rugged thoriated tungsten mesh cathode. It is

interchangeable with the 8349/4CX35,000C and provides improved performance in many applications. The forced-air cooled anode is rated at 35 kW maximum dissipation.

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
The EIMAC	5000 a	The EIMAC 4CX35,000D0 is a ceramic/metal forced-air cooled power
Current, at	275 A	Current, at 10,0 volts . o « ¢ o ¢ o o o o « 275 A
COUL	51 a	COUL 4 o & o o o o s o s o o o a s s s o s o 51 pF
COP ¢ o o o o v s s v e e a s e e e e e e e y	2.3 a	COP ¢ o o o o v s s v e e a s e e e e e e e y 2.3 pF
CiN & o ¢ o o o o o o ¢ s o s s o o s o s o »	195 pF	CiN & o ¢ o o o o o o ¢ s o s s o o s o s o » 195 pF
COULt v o ¢ o o o o o ¢ o s s s o o s	55 pF	COULt v o ¢ o o o o o ¢ o s s s o o s 8 s o o 55 pF
CPK « ¢« ¢ o o ¢ o ¢ e° ¢ ¢ o o o	0.5 pF	CPK « ¢« ¢ o o ¢ o ¢ e° ¢ ¢ o o o 8 s s o o o o & 0.5 pF
Maximum Frequency for Full Ratings (CW) . . . « »	30 MHz	Maximum Frequency for Full Ratings (CW) . . . « » 30 MHz
Maximum Operating Temperature, Anode Core or Ceramic/Metal Seals . . . « » « ¢ .« &	250 °C	Maximum Operating Temperature, Anode Core or Ceramic/Metal Seals . . . « » « ¢ .« & 250°C
BASE » o« « o o s o o o o o s o s o o o s ¢ o s s s o 2 a s s a 2 o s s s o s s «	2 a	BASE » o« « o o s o o o o o s o s o o o s ¢ o s s s o 2 a s s a 2 o s s s o s s « Special, graduated rings
Available Screen Grid Bypass Capacitor Components . « ¢« o ¢ o « o ¢ o o o &	149089 pF	Available Screen Grid Bypass Capacitor Components . « ¢« o ¢ o « o ¢ o o o & 2300 pF - EIMAC P/N 149089
RADIO FREQUENCY LINEAR AMPLIFIER TYPICAL OPERATION (Frequencies to	30 MHz	RADIO FREQUENCY LINEAR AMPLIFIER TYPICAL OPERATION (Frequencies to 30 MHz)
DC PLATE CURRENT . ,	0.16 AMPERES	DC PLATE CURRENT . , . 15 AMPERES Single-Tone Screen Current * , , . . 0.23 0.16 Adc

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PLATE DISSIPATION	335 KILOWATTS	PLATE DISSIPATION . . 35 KILOWATTS Peak rf Grid Driving Voltage * ., ., . . 287 335 v
SCREEN DISSIPATION	0 WATTS	SCREEN DISSIPATION . 1750 WATTS Peak Driving Power * « ¢ « ¢ . 0 0 w
GRID DISSIPATION	33 WATTS	GRID DISSIPATION . . 500 WATTS Plate Dissipation * , . 5 00 0 O 30 33 kW
* Approximate; will vary tube to tube. Resonant Load Impedance	1019 Ohms	* Approximate; will vary tube to tube. Resonant Load Impedance . 593 1019 Ohms
varian EIMAC /	94070 A	varian EIMAC / 301 Industrial Way / San Carlos, CA 94070 / U.S.A.
RADIO FREQUENCY POWER AMPLIFIER TYPICAL OPERATION (Frequencies to	30 MHz	RADIO FREQUENCY POWER AMPLIFIER TYPICAL OPERATION (Frequencies to 30 MHz)
DC PLATE CURRENT	25 AMPERES	DC PLATE CURRENT . . 15 AMPERES Plate Dissipation * ., . . . « « & 14,7 15 25 kW
PLATE DISSIPATION	140 KILOWATTS	PLATE DISSIPATION . . 35 KILOWATTS Plate Output Power * ., . . . + «. « & 56.6 85 140 kW
SCREEN DISSIPATION ,	1750 WATTS	SCREEN DISSIPATION , 1750 WATTS
GRID DISSIPATION	500 WATTS	GRID DISSIPATION . . 500 WATTS * Approximate; will vary tube to tube.
PLATE MODULATED RADIO-FREQUENCY TYPICAL OPERATION (Frequencies to	30 MHz	PLATE MODULATED RADIO-FREQUENCY TYPICAL OPERATION (Frequencies to 30 MHz)
DC PLATE CURRENT	655 AMPERES	DC PLATE CURRENT . . 15 AMPERES Peak rf Grid Driving Voltage * , ... 640 655 v
PLATE DISSIPATION **	120 KILOWATTS	PLATE DISSIPATION ** 23 KILOWATTS Calculated Driving Power * , , . . . « « & 130 120 W
SCREEN DISSIPATION #	13.6 WATTS	SCREEN DISSIPATION # 1750 WATTS Plate Dissipation * . . . ¢ ¢ « ¢ ¢ « o « o & 10.6 13.6 kW
GRID DISSIPATION #	90 WATTS	GRID DISSIPATION # 500 WATTS Plate Output Power * . . ¢ ¢ ¢ ¢ o o o o & 60 90 kW
Resonant Load Impedance . . « +« ¢ ¢ & &	1110 Ohms	Resonant Load Impedance . . « +« ¢ ¢ & & 705 1110 Ohms
** Corresponds to	100 kilowatts	** Corresponds to 35 kilowatts at 100% sine-wave modulation,
DC PLATE CURRENT	33 AMPERES	DC PLATE CURRENT . . 15 AMPERES Max.Signal Plate Dissipation * ## 30.3 33 kW

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PLATE DISSIPATION	170 KILOWATTS	PLATE DISSIPATION . . 35 KILOWATTS Plate Output Power *, , , . . e e e s e s 113 170 kW
SCREEN DISSIPATION	2040 WATTS	SCREEN DISSIPATION . 1750 WATTS Load Resistance (plate to p)ate) « s e s e 1190 2040 Ohms
GRID DISSIPATION . ,	500 WATTS	GRID DISSIPATION . , . 500 WATTS
Filament Current, at	290 A	Filament Current, at 10,0 VOItS & o &« v & φ & o o « o & e s s s s e s e s e s e 260 290 A
CiN o o o o o o « o o	480 pF	CiN o o o o o o « o o 5 o o o s s s o o s o s o o s o s o 5 s s s 8 s s o o 410 480 pF
COUt &« & o o φ o o o o o o o o o	56 pF	COUt &« & o o φ o o o o o o o o o 6 s o o o o o 6 6 6 5 6 5 6 6 2 0 06 0 0 0 s 46 56 pF
COP o« o o o o o o o o o o s s s s s o s s s o o TQr e e e e e e e e e	3.2 pF	COP o« o o o o o o o o o o s s s s s o s s s o o TQr e e e e e e e e e 1.5 3.2 pF
CiN o	215 a	CiN o 4 o o o o o a o o o o o o o o 58 o s o o a s 8 s s o 6 s o s s 06 o o o o 185 215 pF
COUL	60 a	COUL 4 o φ 4 o o o o o o o o o s o o o o 06 o 0 o 6 86 s o 6 06 0 s v s 06 8 06.a o 50 60 pF
CPK o o o φ o o o o o o o o o o o s o o o φ o s a o s s o	0.6 a	CPK o o o φ o o o o o o o o o o s o o o φ o s a o s s o 8 o 6 s 06 8 s s 06 o o 0 - 0.6 pF
external surfaces of the tube is	250 °C	external surfaces of the tube is 250°C. Sufficient ing variation in the equipment itself, It does not
ceramic/metal seals, below	250 °C	ceramic/metal seals, below 250°C.
erature at	40 °C	erature at 225°C with 40°C ambient cooling air are
tabulated below (for operation below	30 MHz	tabulated below (for operation below 30 MHz). This
maintain envelope temperatures less than	250 °C	maintain envelope temperatures less than 250°C,
be Vimited to	15 volts	be Vimited to 100 volts {peak). at voltages higher than 15 kilovoits produce
pation is	500 watts	pation is 500 watts, determined approximately by its rated voltages and currents, is a potential
pation is	1750 watts	pation is 1750 watts., With no ac applied to the on all sides of tubes operating at these voltages
A current path from the screen to cathode in the ent on frequency. Under	300 A	A current path from the screen to cathode in the ent on frequency. Under 300 MHz most of the energy

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
for the tube is	35000 watts	for the tube is 35,000 watts. When operated as a by many variables in most applications, such as
watts, which corresponds to	100 watts	watts, which corresponds to 35,000 watts at 100% tween tube terminals, and wiring effects. To con-
Standard RS	191 a	Standard RS-191. This requires use of a specially
of #	94070 A	of #30 AWG copper wire. The wire will remain Way; San Carlos, CA 94070 U.S.A.