



ELECTRONIC TUBE REFERENCE

4CX1000A

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

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
TETRODE

Forced-air-cooled radial-beam tetrode designed for low-voltage, high-current Class-AB1 RF linear and audio-amplifier service with high power gain.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6 V / 9 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Tetrode	
TRANSCONDUCTANCE	0.037 S
MAXIMUM PLATE VOLTAGE	3000 V
MAXIMUM SCREEN VOLTAGE	400 V
MAXIMUM PLATE DISSIPATION	1000 W
MAXIMUM SCREEN DISSIPATION	12 W
<i>Published absolute maximum ratings promoted from the applicable service tables; pulse-service maxima are used only where explicitly noted in the tube note.</i>	

The EIMAC 8168/4CX1000A is a ceramic/metal, forced-air cooled, radial-beam tetrode with a rated maximum plate dissipation of 1000 watts. It is a low-voltage, high-current tube specifically designed for Class-AB1 linear-amplifier or audio-amplifier applications where its high gain may be used to advantage. At its rated maximum plate voltage of 3000 volts, it is capable of producing 1630 watts of peak-envelope output power. Two

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
radial-beam tetrode with a rated maximum plate dissipation of	1000 W	radial-beam tetrode with a rated maximum plate dissipation of 1000 watts.
It is a low-voltage, high-current tube specifically designed for Class-AB]	1	It is a low-voltage, high-current tube specifically designed for Class-AB]1
be used to advantage. At its rated maximum plate voltage of	3000 V	be used to advantage. At its rated maximum plate voltage of 3000 volts, it
is capable of producing	1630 W	is capable of producing 1630 watts of peak-envelope output power. Two
Heater: Voltage [1]	0	Heater: Voltage 00iiiiinnns 6.0 + 0.3
Heater: Voltage [2]	6	Heater: Voltage 00iiiiinnns 6.0 + 0.3
Heater: Voltage [3]	0.3	Heater: Voltage 00iiiiinnns 6.0 + 0.3
Current, at [1]	6 V	Current, at 6.0 volts o 9.0
Current, at [2]	9 V	Current, at 6.0 volts o 9.0
Direct Interelectrode Capacitances (grounded cathode)	2	Direct Interelectrode Capacitances (grounded cathode)2
Input [1]	500000005 pF	Input 500000005 0005300 0000005060 0φ0 81 pF
Input [2]	5300 pF	Input 500000005 0005300 0000005060 0φ0 81 pF
Input [3]	5060 pF	Input 500000005 0005300 0000005060 0φ0 81 pF
Input [4]	0 pF	Input 500000005 0005300 0000005060 0φ0 81 pF

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input [5]	0 pF	Input 500000005 0005300 0000005060 0φ0 81 pF
Input [6]	81 pF	Input 500000005 0005300 0000005060 0φ0 81 pF
Direct Interelectrode Capacitances (grounded grid and screen)	2	Direct Interelectrode Capacitances (grounded grid and screen)2
RADIO FREQUENCY LINEAR AMPLIFIER TYPICAL OPERATION (Frequencies to	30 MHz	RADIO FREQUENCY LINEAR AMPLIFIER TYPICAL OPERATION (Frequencies to 30 MHz)
Plate Voltage [1]	2000	Plate Voltage 2000 2500 3000 Vdc
Plate Voltage [2]	2500	Plate Voltage 2000 2500 3000 Vdc
Plate Voltage [3]	3000	Plate Voltage 2000 2500 3000 Vdc
Grid Voltage! . . ., [1]	-60	Grid Voltage! . . ., ... -60 -60 -60 Vdc
Grid Voltage! . . ., [2]	-60	Grid Voltage! . . ., ... -60 -60 -60 Vdc
Grid Voltage! . . ., [3]	-60	Grid Voltage! . . ., ... -60 -60 -60 Vdc
DCPLATEVOLTAGE .« v v v v vt v e v [1]	3000 V	DCPLATEVOLTAGE .« v v v v vt v e v 3000 VOLTS Zero-Signal Plate Current . . 358 250 5758) mZ«dc
DCPLATEVOLTAGE .« v v v v vt v e v [2]	358 V	DCPLATEVOLTAGE .« v v v v vt v e v 3000 VOLTS Zero-Signal Plate Current . . 358 250 5758) mZ«dc
DCPLATEVOLTAGE .« v v v v vt v e v [3]	250 V	DCPLATEVOLTAGE .« v v v v vt v e v 3000 VOLTS Zero-Signal Plate Current . . 358 250 5758) mZ«dc
DCPLATEVOLTAGE .« v v v v vt v e v [4]	5758 V	DCPLATEVOLTAGE .« v v v v vt v e v 3000 VOLTS Zero-Signal Plate Current . . 358 250 5758) mZ«dc
_____ [1]	400	_____ 400 L Single Tone Plate Current . . . 890 885 mAdc
_____ [2]	890	_____ 400 L Single Tone Plate Current . . . 890 885 mAdc
_____ [3]	885	_____ 400 L Single Tone Plate Current . . . 890 885 mAdc
gg \$LC\$EEN VO;;S.SE [1]	1	gg \$LC\$EEN VO;;S.SE 1.0 XI\OAPE:E Two-Tone Plate Current . . . 645 650 635 mAdc
gg \$LC\$EEN VO;;S.SE [2]	645	gg \$LC\$EEN VO;;S.SE 1.0 XI\OAPE:E Two-Tone Plate Current . . . 645 650 635 mAdc
gg \$LC\$EEN VO;;S.SE [3]	650	gg \$LC\$EEN VO;;S.SE 1.0 XI\OAPE:E Two-Tone Plate Current . . . 645 650 635 mAdc

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
gg \$LC\$EEN VO;;S.SE [4]	635	gg \$LC\$EEN VO;;S.SE 1.0 XI\OAPE:E Two-Tone Plate Current 645 650 635 mAdc
TECURRENT vvvveens . Zero-Signa! Screen Current [1]	8	TECURRENT vvvveens . Zero-Signa! Screen Current . . 8 6 5 mAdc
TECURRENT vvvveens . Zero-Signa! Screen Current [2]	6	TECURRENT vvvveens . Zero-Signa! Screen Current . . 8 6 5 mAdc
TECURRENT vvvveens . Zero-Signa! Screen Current [3]	5	TECURRENT vvvveens . Zero-Signa! Screen Current . . 8 6 5 mAdc
PLATE DISSIPATION « [1]	1000 W	PLATE DISSIPATION «... 1000 WATTS Single-Tone Screen Current2. . 35 35 35 mAdc
PLATE DISSIPATION « [2]	35 W	PLATE DISSIPATION «... 1000 WATTS Single-Tone Screen Current2. . 35 35 35 mAdc
PLATE DISSIPATION « [3]	35 W	PLATE DISSIPATION «... 1000 WATTS Single-Tone Screen Current2. . 35 35 35 mAdc
PLATE DISSIPATION « [4]	35 W	PLATE DISSIPATION «... 1000 WATTS Single-Tone Screen Current2. . 35 35 35 mAdc
SCREEN DISSIPATION . . . v v v v vt v v v [1]	12 W	SCREEN DISSIPATION . . . v v v v vt v v v 12 WATTS Two-Tone Screen Currentz P 10 8 8 mAdc
SCREEN DISSIPATION . . . v v v v vt v v v [2]	10 W	SCREEN DISSIPATION . . . v v v v vt v v v 12 WATTS Two-Tone Screen Currentz P 10 8 8 mAdc
SCREEN DISSIPATION . . . v v v v vt v v v [3]	8 W	SCREEN DISSIPATION . . . v v v v vt v v v 12 WATTS Two-Tone Screen Currentz P 10 8 8 mAdc
SCREEN DISSIPATION . . . v v v v vt v v v [4]	8 W	SCREEN DISSIPATION . . . v v v v vt v v v 12 WATTS Two-Tone Screen Currentz P 10 8 8 mAdc
e [1]	0 W	e 0 WATT Plate Output Power 930 1300 1630 w
e [2]	930 W	e 0 WATT Plate Output Power 930 1300 1630 w
e [3]	1300 W	e 0 WATT Plate Output Power 930 1300 1630 w
e [4]	1630 W	e 0 WATT Plate Output Power 930 1300 1630 w
Published value	1	1. Adjust to specified zero-signal dc plate current.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage [1]	2000	 Plate Voltage 2000 2500 3000 Vdc
Plate Voltage [2]	2500	 Plate Voltage 2000 2500 3000 Vdc
Plate Voltage [3]	3000	 Plate Voltage 2000 2500 3000 Vdc
Class AB1. Grid Driven(Sinusoidal Wave) Screen Voltage [1]	325	Class AB1. Grid Driven(Sinusoidal Wave) Screen Voltage 325 325 325 Vds
Class AB1. Grid Driven(Sinusoidal Wave) Screen Voltage [2]	325	Class AB1. Grid Driven(Sinusoidal Wave) Screen Voltage 325 325 325 Vds
Class AB1. Grid Driven(Sinusoidal Wave) Screen Voltage [3]	325	Class AB1. Grid Driven(Sinusoidal Wave) Screen Voltage 325 325 325 Vds
Grid Voltage [1]	1.2	Grid Voltage 1.2, ... -0 -60 -60 Vdc
Grid Voltage [2]	0	Grid Voltage 1.2, ... -0 -60 -60 Vdc
Grid Voltage [3]	-60	Grid Voltage 1.2, ... -0 -60 -60 Vdc
Grid Voltage [4]	-60	Grid Voltage 1.2, ... -0 -60 -60 Vdc
MAXIMUM RATINGS (Per Tube) Zero-Signal Plate Current [1]	500	MAXIMUM RATINGS (Per Tube) Zero-Signal Plate Current .. 500 500 500 mAdc
MAXIMUM RATINGS (Per Tube) Zero-Signal Plate Current [2]	500	MAXIMUM RATINGS (Per Tube) Zero-Signal Plate Current .. 500 500 500 mAdc
MAXIMUM RATINGS (Per Tube) Zero-Signal Plate Current [3]	500	MAXIMUM RATINGS (Per Tube) Zero-Signal Plate Current .. 500 500 500 mAdc
Max Signal Plate Current [1]	1.78	Max Signal Plate Current.. 1.78 1.77 1.76 Adc
Max Signal Plate Current [2]	1.77	Max Signal Plate Current.. 1.78 1.77 1.76 Adc
Max Signal Plate Current [3]	1.76	Max Signal Plate Current.. 1.78 1.77 1.76 Adc
DC PLATE VOLTAGE e	3000 V	DC PLATE VOLTAGE e 3000 VOLTS Zero-Signal
Signal Screen Currentl	16	Signal Screen Currentl. .. 16
DC SCREEN VOLTAGE «+ [1]	400 V	DC SCREEN VOLTAGE «+.. 400 VOLTS Plate Output Power. 1860 2600 3260 W
DC SCREEN VOLTAGE «+ [2]	1860 V	DC SCREEN VOLTAGE «+.. 400 VOLTS Plate Output Power. 1860 2600 3260 W
DC SCREEN VOLTAGE «+ [3]	2600 V	DC SCREEN VOLTAGE «+.. 400 VOLTS Plate Output Power. 1860 2600 3260 W
DC SCREEN VOLTAGE «+ [4]	3260 V	DC SCREEN VOLTAGE «+.. 400 VOLTS Plate Output Power. 1860 2600 3260 W

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DCPLATECURRENT ..o v v vn v e v v v v	1 A	DCPLATECURRENT ..o v v vn v e v v v v 1.0 AMPERE Load Resistance
PLATE DISSIPATION v v i v v v n [1]	1000 W	PLATE DISSIPATION v v i v v v n 1000 WATTS (plate to plate) 2040 2850 3860 Q
PLATE DISSIPATION v v i v v v n [2]	2040 W	PLATE DISSIPATION v v i v v v n 1000 WATTS (plate to plate) 2040 2850 3860 Q
PLATE DISSIPATION v v i v v v n [3]	2850 W	PLATE DISSIPATION v v i v v v n 1000 WATTS (plate to plate) 2040 2850 3860 Q
PLATE DISSIPATION v v i v v v n [4]	3860 W	PLATE DISSIPATION v v i v v v n 1000 WATTS (plate to plate) 2040 2850 3860 Q
SCREEN DISSIPATION [1]	12 W	SCREEN DISSIPATION 12 WATTS 1. Approximate value.
SCREEN DISSIPATION [2]	1 W	SCREEN DISSIPATION 12 WATTS 1. Approximate value.
GRID DISSIPATION . . . v v v v vt et v s [1]	0 W	GRID DISSIPATION . . . v v v v vt et v s 0 WATT 2. Adjust to give stated zero-signal plate current.
GRID DISSIPATION . . . v v v v vt et v s [2]	2 W	GRID DISSIPATION . . . v v v v vt et v s 0 WATT 2. Adjust to give stated zero-signal plate current.
Heater: Current at6 [1]	0 V	Heater: Current at6.0 volts v v v v v vt e 8.1 9.9
Heater: Current at6 [2]	8.1 V	Heater: Current at6.0 volts v v v v v vt e 8.1 9.9
Heater: Current at6 [3]	9.9 V	Heater: Current at6.0 volts v v v v v vt e 8.1 9.9
Input e e [1]	75 pF	Input e e . 75 88 pF
Input e e [2]	88 pF	Input e e . 75 88 pF
dissipation at sea level and with inlet air tem- tion double amplitude is	25	dissipation at sea level and with inlet air tem- tion double amplitude is .25 inch.
difference across the tube and socket of	0.2	difference across the tube and socket of 0.2 within specification for grid bias voltage and
At higher altitudes and at VHF increased air [1]	4 V	At higher altitudes and at VHF increased air 4CX1000A is 6.0 volts. The voltage, as measured
At higher altitudes and at VHF increased air [2]	0 V	At higher altitudes and at VHF increased air 4CX1000A is 6.0 volts. The voltage, as measured

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
At higher altitudes and at VHF increased air [3]	6 V	At higher altitudes and at VHF increased air 4CX1000A is 6.0 volts. The voltage, as measured
drop across tube and socket of [1]	0.3	drop across tube and socket of 0.3 inch of water voltage be allowed to exceed 5% above the rated
drop across tube and socket of [2]	5	drop across tube and socket of 0.3 inch of water voltage be allowed to exceed 5% above the rated
lesser degree depending on individual tube de- bleeder current should approximate	70	lesser degree depending on individual tube de- bleeder current should approximate 70 milliam-
Published value [1]	4	4CX1000A and, under some operating condi- It should be observed that this bleeder power
Published value [2]	0	4CX1000A and, under some operating condi- It should be observed that this bleeder power
The product of the peak screen voltage and the dissipation power is	1000 W	The product of the peak screen voltage and the dissipation power is 1000 watts, Except for
Published value [1]	50 V	50 SCREEN VOLTAGE — 325 VOLTS
Published value [2]	325 V	50 SCREEN VOLTAGE — 325 VOLTS

TUBE TINKER

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