



ELECTRONIC TUBE REFERENCE

3CW5000H3

Power - Triode (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Water-cooled ceramic-metal industrial power triode for high-power RF generation, amplification, or modulation. Its manufacturer ratings emphasize continuous transmitting duty with high plate dissipation and substantial power handling.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	7.5 V / 53 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
AMPLIFICATION FACTOR	20
MAXIMUM PLATE VOLTAGE	6000 V
MAXIMUM PLATE DISSIPATION	5000 W
MAXIMUM GRID DISSIPATION	150 W
MAXIMUM CATHODE CURRENT	2.5 A
Single triode section; promoted values mapped from printed General Characteristics and Maximum Ratings headings.	

The EIMAC 3CW5000H3 is a water-cooled ceramic/metal industrial medium-mu power triode for rf heating service.

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 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The EIMAC 3CW5000H3 is a water-cooled, ceramic-metal power	3 a	The EIMAC 3CW5000H3 is a water-cooled, ceramic-metal power
reserve emission is available from its 375 watt filament. The grid struc	375 watt	reserve emission is available from its 375 watt filament. The grid struc
ture is rated at 150 watts making this tube an excellent choice for severe	150 watts	ture is rated at 150 watts making this tube an excellent choice for severe
Voltage	7.5 Volts	GeneralCharacteristics Voltage - - - - 7.5 Volts
Current	48 amps	GeneralCharacteristics Current - - - - 48 53 amps
Amplification Factor	20	GeneralCharacteristics Amplification Factor - - - - 20
Plate-Filament	0.6 uuf	GeneralCharacteristics Plate-Filament - - - - 0.60 120 uuf

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Operating Temperatures	250 °C	Maximum Operating Temperatures - - - - - . 250°C
(Effective 4-1-66) © 1966 Varian Printed in U.S.A	4 A	(Effective 4-1-66) © 1966 Varian Printed in U.S.A.
Class-C (Filtered DC Power Supply) DC Plate Voltage	4000 volts	RF INDUSTRIAL OSCILLATOR TYPICAL OPERATION* Class-C (Filtered DC Power Supply) DC Plate Voltage - 4000 6000 volts
DC Plate Current	2.5 amps	RF INDUSTRIAL OSCILLATOR TYPICAL OPERATION* DC Plate Current - 2.5 2.08 amps

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Grid Voltage	300 volts	RF INDUSTRIAL OSCILLATOR TYPICAL OPERATION* DC Grid Voltage - —300 —500 volts
DC Grid Current	245 amps	MaximumRatings DC Grid Current - - .245 .180 amps
DC PLATE VOLTAGE	6000 volts	MaximumRatings DC PLATE VOLTAGE - - - - - 6000 volts Peak Positive Grid Voltage 280 265 volts
DC PLATE CURRENT	2.5 amps	MaximumRatings DC PLATE CURRENT - - - - - 2.5 amps Driving Power - - 142 136 watts
DC GRID VOLTAGE	1000 volts	MaximumRatings DC GRID VOLTAGE - - - - - — 1000 volts Plate Input Power - - 10,000 12,500 kW
Plate Dissipation	2500 kW	MaximumRatings Plate Dissipation - - 2,500 2,500 kW
DC GRID CURRENT	0.4 amp	MaximumRatings DC GRID CURRENT - - - - - 0.4 amp Plate Output Power - 7 500 10,000 kW
PLATE INPUT POWER	12.5 kW	MaximumRatings PLATE INPUT POWER - - - 12.5 kW Approximate Load Impedance 910 1,625 ohms
PLATE DISSIPATION (NOMINAL)	5 kw	MaximumRatings PLATE DISSIPATION (NOMINAL) - - 5 kw *Loaded Conditions
is 7.5 volts. Filament voltage, as measured at either base up or down. A grid contact flange is	7.5 volts	is 7.5 volts. Filament voltage, as measured at either base up or down. A grid contact flange is
the tube, must be maintained at 7.5 volts plus provided for bolting to a strap or a grid deck	7.5 volts	the tube, must be maintained at 7.5 volts plus provided for bolting to a strap or a grid deck.
The grid current rating is 0.4 ampere dc. This Anode cooling is accomplished by circulating	0.4 ampere	The grid current rating is 0.4 ampere dc. This Anode cooling is accomplished by circulating
operate with more than 0.275 amperes grid cur- let water temperature must not exceed 70°C nor	0.275 amperes	operate with more than 0.275 amperes grid cur- let water temperature must not exceed 70°C nor
rent to obtain reasonable efficiency. Inindustrial should inlet water pressure exceed 60 psi. This	60	rent to obtain reasonable efficiency. Inindustrial should inlet water pressure exceed 60 psi. This

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
heating service with varying loads, grid current table is based upon 15°C temperature rise inlet	15 °C	heating service with varying loads, grid current table is based upon 15°C temperature rise inlet
rating is 150 watts. MINIMUM WATER-COOLING REQUIREMENT	150 watts	rating is 150 watts. MINIMUM WATER-COOLING REQUIREMENT
Maximum plate voltage rating of 6000 volts Dissipation Flow Drop	6000 volts	Maximum plate voltage rating of 6000 volts Dissipation Flow Drop
and maximum plate current of 2.5 amperes dc (kw) (9pm) (psi)	2.5 amperes	and maximum plate current of 2.5 amperes dc (kw) (9pm) (psi)
wide variations in loading. contact ring by a 1% I.D. air duct arranged at	1 a	wide variations in loading. contact ring by a 1% I.D. air duct arranged at
Spark gaps from plate to ground should be a 45° angle with the center line of the tube will	45 a	Spark gaps from plate to ground should be a 45° angle with the center line of the tube will
The 3CW5000H3 is usable to 110 MHz. At write to Power Grid Division, EIMAC, Division	3 MHz	The 3CW5000H3 is usable to 110 MHz. At write to Power Grid Division, EIMAC, Division
4000 volts in Class C service. ifornia for information and recommendations	4000 volts	4000 volts in Class C service. ifornia for information and recommendations.



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 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The EIMAC [1]	3 W	The EIMAC 3CW5000H3 is a water-cooled, ceramic-metal power

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The EIMAC [2]	0 W	The EIMAC 3CW5000H3 is a water-cooled, ceramic-metal power
services. Its water-cooled anode is conservatively rated at	5	services. Its water-cooled anode is conservatively rated at 5 kilowatts of
Input of [1]	12.5	Input of 12.5 kilowatts is permissible up to 75 megahertz. Plentiful
Input of [2]	75	Input of 12.5 kilowatts is permissible up to 75 megahertz. Plentiful
reserve emission is available from its	375	reserve emission is available from its 375 watt filament. The grid stmc-
EiE Voltage	7.5 V	EiE Voltage---. 7.5 Volts
Current [1]	48 A	Current---. 48 53 amps
Current [2]	53 A	Current---. 48 53 amps
Grid-Filament [1]	-29.2	Grid-Filament---29.2 40.2
Grid-Filament [2]	40.2	Grid-Filament---29.2 40.2
Plate-Filament [1]	-0.6	Plate-Filament---0.60 1.20
Plate-Filament [2]	1.2	Plate-Filament---0.60 1.20
Grid-Plate [1]	-17.8	Grid-Plate----17.8 24.2
Grid-Plate [2]	24.2	Grid-Plate----17.8 24.2
Frequency for Maximum Ratings	75	Frequency for Maximum Ratings - 75
Maximum operating Temperatures	250	Maximum operating Temperatures ----- 250°C
Class-C (Filtered DC Power Supply) DC plate Voltage [1]	4000 V	Class-C (Filtered DC Power Supply) DC plate Voltage 4000 6000 volts
Class-C (Filtered DC Power Supply) DC plate Voltage [2]	6000 V	Class-C (Filtered DC Power Supply) DC plate Voltage 4000 6000 volts
DC Grid Voltage _ [1]	3265 V	DC Grid Voltage _3265 _2j88 ;T,?sS
DC Grid Voltage _ [2]	2 V	DC Grid Voltage _3265 _2j88 ;T,?sS
DC Grid Voltage _ [3]	8 V	DC Grid Voltage _3265 _2j88 ;T,?sS
DC Grid Current • [1]	288 A	DC Grid Current •288 .288::Pss
DC Grid Current • [2]	288 A	DC Grid Current •288 .288::Pss
DC PLATE VOLTAGE	6000 V	DC PLATE VOLTAGE - - - 6000 volts Peak Positive Grid
DC PLATE CURRENT [1]	2.5 A	DC PLATE CURRENT - - - 2.5 amps Driving Power - 142 136 watts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC PLATE CURRENT [2]	142 A	DC PLATE CURRENT - - - 2.5 amps Driving Power - 142 136 watts
DC PLATE CURRENT [3]	136 A	DC PLATE CURRENT - - - 2.5 amps Driving Power - 142 136 watts
Published value [1]	-1000 kW	-1000 volts Plate Input Power 10,00012,500 kw
Published value [2]	1000012500 kW	-1000 volts Plate Input Power 10,00012,500 kw
PlateDissipation [1]	2500 kW	PlateDissipation - - - 2,500 2,500kw
PlateDissipation [2]	2500 kW	PlateDissipation - - - 2,500 2,500kw
DC GRID CURRENT [1]	400 mA	DC GRID CURRENT - - - 0.4 amp Plateoutput power - - 7,50010,000 kw
DC GRID CURRENT [2]	750010000 A	DC GRID CURRENT - - - 0.4 amp Plateoutput power - - 7,50010,000 kw
PLATE INPUT POWER [1]	12.5 kW	PLATE INPUT POWER - - 12.5 kw Approximate Load Impedance 910 1,625 ohms
PLATE INPUT POWER [2]	910 kW	PLATE INPUT POWER - - 12.5 kw Approximate Load Impedance 910 1,625 ohms
PLATE INPUT POWER [3]	1625 kW	PLATE INPUT POWER - - 12.5 kw Approximate Load Impedance 910 1,625 ohms
PLATE DISSIPATION (NOMINAL)	5 kW	PLATE DISSIPATION (NOMINAL) 5kw
The rated filament voltage for the [1]	3 V	The rated filament voltage for the 3CW5000H3 The 3CW5000H3 must be mounted vertically,



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1975 Eimac Tube Manual

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

1975 EIMAC TUBE MANUAL

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	20	—
Heater/filament voltage	7.5 V	—
Heater/filament current	50.5 A	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	6000 V	—
Maximum plate dissipation	5000 W	—
Maximum grid dissipation	150 W	—
Maximum cathode/plate current	2.5 A	—
Frequency for maximum ratings	75 MHz	—
Plate input power maximum	12500 W	IndustrialRF
Typical plate output power	10000 W	ClassC

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input/grid-filament capacitance	29.2–40.2 pF	—
Output/plate-filament capacitance	0.6–1.2 pF	—
Feedback/grid-plate capacitance	17.8–24.2 pF	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling	Water and forced air	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1976 Eimac Tube Manual

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

1976 EIMAC TUBE MANUAL

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	20	—
Heater/filament voltage	7.5 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament current	50.5 A	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	6000 V	—
Maximum plate dissipation	5000 W	—
Maximum grid dissipation	150 W	—
Maximum cathode/plate current	2.5 A	—
Frequency for maximum ratings	75 MHz	—
Plate input power maximum	12500 W	IndustrialRF
Typical plate output power	10000 W	ClassC

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input/grid-filament capacitance	29.2–40.2 pF	—
Output/plate-filament capacitance	0.6–1.2 pF	—
Feedback/grid-plate capacitance	17.8–24.2 pF	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling	Water and forced air	—

TUBE TINKER

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

[Catalog](#) [Tube types](#) [Full books](#) [Blog](#) [Feedback & corrections](#)

© 2026 Tube Tinker