



ELECTRONIC TUBE REFERENCE

3CW40000H3

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	10 V / 160 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	12000 V
MAXIMUM PLATE DISSIPATION	40000 W
MAXIMUM GRID DISSIPATION	750 W
MAXIMUM CATHODE CURRENT	9 A
<i>Single triode section; promoted values mapped from printed General Characteristics and Maximum Ratings headings.</i>	

The EIMAC 3CW40000H3 is a water-cooled ceramic/metal industrial power triode with 40 kw plate 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 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The EIMAC 3CW40,000H3 is a water-cooled, ceramic-metal power	3 a	The EIMAC 3CW40,000H3 is a water-cooled, ceramic-metal power
reserve emission is available from its 1500 watt filament. The grid struc	1500 watt	reserve emission is available from its 1500 watt filament. The grid struc-
ture is rated at 750 watts, making this tube an excellent choice for	750 watts	ture is rated at 750 watts, making this tube an excellent choice for
Voltage	10 volts	GeneralCharacteristics Voltage - - - - - 10 volts
Current	152 amps	GeneralCharacteristics Current - - - - - 152 168 amps
Amplification Factor	20	GeneralCharacteristics Amplification Factor - - - - 20
Grid-Filament	65 pF	GeneralCharacteristics Grid-Filament - - - - 65 75 pF
Plate-Filament	2 pF	GeneralCharacteristics Plate-Filament - - - - = 2.0 2.6 pF
Grid Plate	38 PF	GeneralCharacteristics Grid Plate - - - - - 38 48 PF

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ceramic-to-Metal Seals S R ST S T T T S 250°C	250 °C	Ceramic-to-Metal Seals S R ST S T T T S 250°C
Net Weight	14 pounds	Net Weight - - - - - =« =« == - - - - - 14 pounds

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
(Effective 8-1-67) © 1967 Varian Printed in U.S.A	8 A	(Effective 8-1-67) © 1967 Varian Printed in U.S.A.
DC Plate Voltage	-7000 volts	RF INDUSTRIAL OSCILLATOR TYPICAL OPERATION* DC Plate Voltage - - -7000 10,000 volts
Class-C (Filtered DC Power Supply) DC Plate Current	77 amps	RF INDUSTRIAL OSCILLATOR TYPICAL OPERATION* Class-C (Filtered DC Power Supply) DC Plate Current - - - 77 9.0 amps
DC Grid Voltage	700 volts	RF INDUSTRIAL OSCILLATOR TYPICAL OPERATION* DC Grid Voltage - - -700 -850 volts
DC PLATE VOLTAGE	12000 VOLTS	MaximumRatings DC PLATE VOLTAGE - - - - 12,000 VOLTS Peak Positive Grid Voltage - 240 550 volts
DC PLATE CURRENT	9 AMPS	MaximumRatings DC PLATE CURRENT - - - - 9.0 AMPS Driving Power - - - 1040 watts
Plate Input Power	54 kW	MaximumRatings Plate Input Power - - - 54 90 kW
DC GRID VOLTAGE	-1200 VOLTS	MaximumRatings DC GRID VOLTAGE - - - - -1200 VOLTS Plate Dissipation - - - 16 20 kw
DC GRID CURRENT	1.2 AMPS	MaximumRatings DC GRID CURRENT - - - - 1.2 AMPS Plate Output Power - - - 37.7 70 kW
PLATE INPUT POWER	100 KW	MaximumRatings PLATE INPUT POWER - - - - 100 KW Approximate Load Impedance - 408 526 ohms
PLATE DISSIPATION	40 KW	MaximumRatings PLATE DISSIPATION - - - - 40 KW *Loaded Conditions
the 3CW40,000H3 is 10.0 volts. Filament volt-mounted vertically, either base up or down	3 volts	the 3CW40,000H3 is 10.0 volts. Filament volt-mounted vertically, either base up or down.
allowed to vary from 10.0 volts by more than gral anode-water jacket. The table below lists	10 volts	allowed to vary from 10.0 volts by more than gral anode-water jacket. The table below lists
Control Grid Operation	15 °C	Control Grid Operation — The grid current temperature rise of 15°C.
rating is 1.2 ampere dc. This value should not be	1.2 ampere	rating is 1.2 ampere dc. This value should not be
0.3 to 0.6 amp grid current to obtain reasonable	0.3 amp	0.3 to 0.6 amp grid current to obtain reasonable

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
efficiency. In industrial heating service with 20 5.25 4.0	20	efficiency. In industrial heating service with 20 5.25 4.0
continuously with a dc current meter. The maxi- 40 10.2 13.0	40 a	continuously with a dc current meter. The maxi- 40 10.2 13.0
mum grid dissipation rating is 750 watts	750 watts	mum grid dissipation rating is 750 watts.
rating of 12,000 volts and maximum plate cur- Since power dissipated by the filament repre	12000 volts	rating of 12,000 volts and maximum plate cur- Since power dissipated by the filament repre
rent of 9.0 amps should not be applied simulta- sents 1500 watts and grid dissipation can reach	9 amps	rent of 9.0 amps should not be applied simulta- sents 1500 watts and grid dissipation can reach
neously as rated plate dissipation may be ex- 750 watts, 2250 watts has been added to anode	750 watts	neously as rated plate dissipation may be ex- 750 watts, 2250 watts has been added to anode
no modulation. outlet-water temperature will be below 70°C to	70 °C	no modulation. outlet-water temperature will be below 70°C to
important in industrial service with its wide contact ring by a 132" 1.D. air duct arranged at a	132 a	important in industrial service with its wide contact ring by a 132" 1.D. air duct arranged at a
used to prevent transient voltages from flashing of 30 MHz, 50°C ambient, and 5000 ft. altitude	30 MHz	used to prevent transient voltages from flashing of 30 MHz, 50°C ambient, and 5000 ft. altitude.
000H3 is usable to 120 MHz. At this frequency, Product Manager, EIMAC Division of Varian,	0 MHz	000H3 is usable to 120 MHz. At this frequency, Product Manager, EIMAC Division of Varian,
plate voltage must be reduced to 7000 volts in 301 Industrial Way, San Carlos, California	7000 volts	plate voltage must be reduced to 7000 volts in 301 Industrial Way, San Carlos, California
A 578	578 A	A 578
(M5.29/66	29 A	(M5.29/66 - A€ EQUIV.)
Z. 3 M7 HOLES A/ M7, FLINGE	3 A	Z. 3 M7 HOLES A/ M7, FLINGE
(1]1) A	1 A	(1]1) A

SOURCE OPERATING CONDITIONS

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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	10 V	—
Heater/filament current	160 A	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	12000 V	—
Maximum plate dissipation	40000 W	—
Maximum grid dissipation	750 W	—
Maximum cathode/plate current	9 A	—
Frequency for maximum ratings	120 MHz	—
Plate input power maximum	100000 W	IndustrialRF
Typical plate output power	37700 W	ClassC

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input/grid-filament capacitance	65–65 pF	—
Output/plate-filament capacitance	2–2 pF	—
Feedback/grid-plate capacitance	38–38 pF	—

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



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1976 EIMAC TUBE MANUAL

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

TUBE TINKER

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and their source documents.

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