



ELECTRONIC TUBE REFERENCE

3CV30000H3

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	6.3 V / 172 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	10000 V
MAXIMUM PLATE DISSIPATION	30000 W
MAXIMUM GRID DISSIPATION	500 W
<i>Single triode section; promoted values mapped from printed General Characteristics and Maximum Ratings headings.</i>	

The EIMAC 3CV30,000H3 is a vapor-cooled, ceramic-metal power triode designed primarily for use in industrial radio-frequency heating service. Its vapor-cooled anode is conservatively rated at 30 kilowatts of plate dissipation when mounted in an EIMAC BR-200 boiler. Full input of 60 kilowatts is permissible up to 100 megahertz. Large reserve emission is available from its one kilowatt filament and the grid structure is rated at one ampere making this tube an excellent choice for severe applications. It is also recommended as an audio amplifier, a conventional plate-modulated amplifier or as a linear amplifier in new equipment designs.

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 3CV30,000H3 is a vapor-cooled, ceramic-metal power triode	3 a	The EIMAC 3CV30,000H3 is a vapor-cooled, ceramic-metal power triode
Current	152 A	GeneralCharacteristics Current - - - - -« 152 172 A
Amplification Factor	20	GeneralCharacteristics Amplification Factor - - - - 20
Grid-Filament	48 pF	GeneralCharacteristics Grid-Filament - - - - 48 58 pF
Plate-Filament	1.2 pF	GeneralCharacteristics Plate-Filament - - - - 1.2 1.5 pF
Grid-Plate	30 pF	GeneralCharacteristics Grid-Plate - - - - - 30 38 pF

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ceramic-to-metal Seals	250 °C	Ceramic-to-metal Seals - - - - - « - - =« « - - « « . - - - - 250°C
Net Weight S T S T I R S	18 pounds	Net Weight S T S T I R S - - - 18 pounds
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	8 amps	RF INDUSTRIAL OSCILLATOR TYPICAL OPERATION Class-C (Filtered DC Power Supply) DC Plate Current - - - - - 8.0 6.0 amps
DC Grid Voltage	-600 volts	RF INDUSTRIAL OSCILLATOR TYPICAL OPERATION DC Grid Voltage - - - - - -600 -800 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC PLATE CURRENT	6 AMPS	MaximumRatings DC PLATE CURRENT - - - - - - 6.0 AMPS Plate Input Power - - - - - 42 60 KW
DC GRID CURRENT	1 AMPS	MaximumRatings DC GRID CURRENT - - - - - - 1.0 AMPS Plate Dissipation - - - - - 12 18 kW
PLATE INPUT POWER	60 Kw	MaximumRatings PLATE INPUT POWER - - - - - - 60 Kw Plate Output Power - - - - - 30 42 kW
PLATE DISSIPATION	30 KW	MaximumRatings PLATE DISSIPATION - - - - - 30 KW Approximate Load Impedance - - 600 750 ohms
(Effective 5-1-68) (©) 1968 Varian Printed in U.S.A	5 A	MaximumRatings (Effective 5-1-68) (©) 1968 Varian Printed in U.S.A.
DC Plate Voltage	5000 volts	Class-C TYPICAL OPERATION DC Plate Voltage - - - - - 5000 7000 volts
DC PLATE VOLTAGE	7000 VOLTS	MaximumRatings DC PLATE VOLTAGE - - - - - 7000 VOLTS DC Plate Current - - - - - 5.0 5.0 amps
DC PLATE CURRENT	5 AMPS	MaximumRatings DC PLATE CURRENT - - - - - - 5.0 AMPS DC Grid Current - - - - - 600 600 mA
PLATE DISSIPATION	20 Kw	MaximumRatings PLATE DISSIPATION - - - - - 20 Kw Driving Power - - - - - 600 750 watts
GRID DISSIPATION	500 WATTS	MaximumRatings GRID DISSIPATION - - - - - 500 WATTS Plate Output Power - - - . 17.8 27.5 kW
Class-AB, DC Grid Voltage*	-280 volts	AUDIC AMPLIFIER TYPICAL OPERATION (two tubes) Class-AB, DC Grid Voltage* - - - - - -280 -480 volts
Zero-Sig Plate Current	5 amps	AUDIC AMPLIFIER TYPICAL OPERATION (two tubes) Zero-Sig Plate Current - - - .5 .25 amps
Max-Sig DC Plate Current	4.2 amps	AUDIC AMPLIFIER TYPICAL OPERATION (two tubes) Max-Sig DC Plate Current - - 4.2 3.1 amps
DC PLATE VOLTAGE	10000 VOLTS	MaximumRatings DC PLATE VOLTAGE - - - - - 10,000 VOLTS Peak Driving Voltage- - - - 480 590 wnlgtg
DC PLATE CURRENT	6 AMPS	MaximumRatings DC PLATE CURRENT - - - - - - 6.0 AMPS Drive Power - - - - - 140 50 watts
PLATE DISSIPATION	30 Kw	MaximumRatings PLATE DISSIPATION - - - - - 30 Kw Plate-to-Plate Load Resistance
1300 2740 ohms	1300 ohms	MaximumRatings - 1300 2740 ohms
GRID DISSIPATION	500 WATTS	MaximumRatings GRID DISSIPATION - - - - - 500 WATTS Power Output - - - - - 31 36 kW

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
3CV30,000H3 is 6.3 volts. Filament voltage, as input is reduced to 7000 volts at 5.0 amperes dc	3 volts	Note: "TYPICAL OPERATION® data are obtained by calculation from published characteristic curves. No allowance for circuit losses has been made. 3CV30,000H3 is 6.3 volts. Filament voltage, as input is reduced to 7000 volts at 5.0 amperes dc.
operate with more than 0.4 to 0.6 amperes grid cur- service with its wide variations in loading	0.4 amperes	Note: "TYPICAL OPERATION® data are obtained by calculation from published characteristic curves. No allowance for circuit losses has been made. operate with more than 0.4 to 0.6 amperes grid cur- service with its wide variations in loading.
er rating is 60 kilowatts at 10,000 volts and 6.0 Division of Varian, 301 Industrial Way, San Carlos,	60 volts	Note: "TYPICAL OPERATION® data are obtained by calculation from published characteristic curves. No allowance for circuit losses has been made. er rating is 60 kilowatts at 10,000 volts and 6.0 Division of Varian, 301 Industrial Way, San Carlos,
Mounting The 3CV30,000H3 must be mounted The water in the boiler must be maintained at a	3 a	Mounting The 3CV30,000H3 must be mounted The water in the boiler must be maintained at a
a vapor-tight seal against the rubber 'O' ring and an EIMAC CB-202 Control Box to sense water level	202 a	a vapor-tight seal against the rubber 'O' ring and an EIMAC CB-202 Control Box to sense water level
of the anode in a distilled water-filled BR-200 boiler. a switch is closed in the control box, energizing a	200 a	of the anode in a distilled water-filled BR-200 boiler. a switch is closed in the control box, energizing a
cooled and condenses into water. Condensate is then the solenoid valve. A second switch in the CB-202	202 A	cooled and condenses into water. Condensate is then the solenoid valve. A second switch in the CB-202
temperature at approximately 100°C. In a properly For reliable operation, it is essential that the	100 °C	temperature at approximately 100°C. In a properly For reliable operation, it is essential that the
will ever exceed 125°C	125 °C	will ever exceed 125°C — well below the rated max- Separate cooling of the tube base is required and
A 5.812	5.812 A	A 5.812
DO NOT CUNTACT—\ v .265	265 v	DO NOT CUNTACT—\ v .265



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