

E I M A C

Division of Varian
SAN CARLOS
CALIFORNIA

8159

3CX10,000A3

**MEDIUM-MU
POWER TRIODE**

The EIMAC 3CX10,000A3 is a ceramic and metal power triode intended primarily for use as a power oscillator in industrial-heating applications. It is also recommended for use as a grounded-grid FM amplifier, as a conventional plate-modulated amplifier, or as a linear amplifier.



GENERAL CHARACTERISTICS

ELECTRICAL

	Min.	Nom.	Max.	
Filament: Thoriated-Tungsten				
Voltage - - - - -		7.5		V
Current - - - - -	94		104	A
Amplification Factor - - - - -		20		
Interelectrode Capacitances, Grounded Cathode:				
Input - - - - -	48		58	pF
Output - - - - -	1.2		1.5	pF
Feedback - - - - -	30		38	pF
Frequency for Maximum Ratings - - - - -				140 MHz

MECHANICAL

Base - - - - -	Coaxial
Recommended Socket - - - - -	EIMAC SK-1300
Recommended Chimney - - - - -	EIMAC SK-1306
Operating Position - - - - -	Vertical, base up or down
Cooling - - - - -	Forced air
Maximum Operating Temperatures:	
Anode Core - - - - -	250°C
Ceramic-to-Metal Seals - - - - -	250°C
Maximum Dimensions:	
Height - - - - -	8.5 in
Diameter - - - - -	7.0 in
Net Weight - - - - -	12 lb

**R-F INDUSTRIAL OSCILLATOR
CLASS-C**

TYPICAL OPERATION, Optimum Load

MAXIMUM RATINGS

D-C PLATE VOLTAGE - - -	7000	VOLTS
D-C PLATE CURRENT - - -	4.0	AMPS
PLATE DISSIPATION - - -	10	KW
GRID DISSIPATION - - -	250	WATTS

D-C Plate Voltage - - - - -	6000	7000	volts
D-C Grid Voltage - - - - -	-575	-670	volts
D-C Plate Current - - - - -	4.0	4.0	amps
D-C Grid Current - - - - -	610	670	mA
Plate Input Power - - - - -	24	28	kW
Plate Output Power - - - - -	18.9	22.4	kW

**R-F POWER AMPLIFIER
GROUNDED-GRID, CLASS-C**

TYPICAL OPERATION

MAXIMUM RATINGS

D-C PLATE VOLTAGE - - -	7000	VOLTS
D-C PLATE CURRENT - - -	4.0	AMPS
PLATE DISSIPATION - - -	10	KW
GRID DISSIPATION - - -	250	WATTS

D-C Plate Voltage - - - - -	6000	7000	volts
D-C Grid Voltage - - - - -	-535	-625	volts
D-C Plate Current - - - - -	4.0	4.0	amps
D-C Grid Current - - - - -	545	530	mA
Driving Power - - - - -	3700	4100	watts
Plate Output Power - - - - -	20.5	24.5	kW



R-F POWER AMPLIFIER
PLATE-MODULATED, CLASS-C

TYPICAL OPERATION

MAXIMUM RATINGS

D-C PLATE VOLTAGE	- - -	5500	VOLTS
D-C PLATE CURRENT	- - -	3.0	AMPS
PLATE DISSIPATION	- - -	6.5	KW
GRID DISSIPATION	- - -	250	WATTS

D-C Plate Voltage	- - - - -	4000	5000	volts
D-C Grid Voltage	- - - - -	-480	-600	volts
D-C Plate Current	- - - - -	3.0	3.0	amps
D-C Grid Current	- - - - -	660	550	mA
Driving Power	- - - - -	530	515	watts
Plate Output Power	- - - - -	9.7	12.4	kW

R-F LINEAR AMPLIFIER
GROUNDED-GRID, CLASS-AB₂

TYPICAL OPERATION

MAXIMUM RATINGS

D-C PLATE VOLTAGE	- - -	7000	VOLTS
D-C PLATE CURRENT	- - -	5.0	AMPS
PLATE DISSIPATION	- - -	12	KW
GRID DISSIPATION	- - -	250	WATTS

D-C Plate Voltage	- - - - -	6000	7000	volts
Zero-Sig Grid Voltage*	- - - - -	-270	-325	volts
Max-Sig D-C Plate Current	- - - - -	4.0	4.0	amps
Max-Sig D-C Grid Current	- - - - -	300	250	mA
Driving Power	- - - - -	1900	2050	watts
Plate Output Power	- - - - -	18	20	kW

*Adjust to give 500 milliamperes zero-signal d-c plate current.

Note: "TYPICAL OPERATION" data are obtained by calculation from published characteristics curves and confirmed by direct tests. No allowance for circuit losses, either input or output, has been made.

APPLICATION

Cooling - The maximum temperature rating for the external surfaces of the 3CX10,000A3 is 250°C. Sufficient forced-air cooling must be provided to keep the temperature of the anode core and the temperature of the ceramic-metal seals below 250°C. Tube life is usually prolonged if these areas are maintained at temperatures below this maximum rating. Minimum

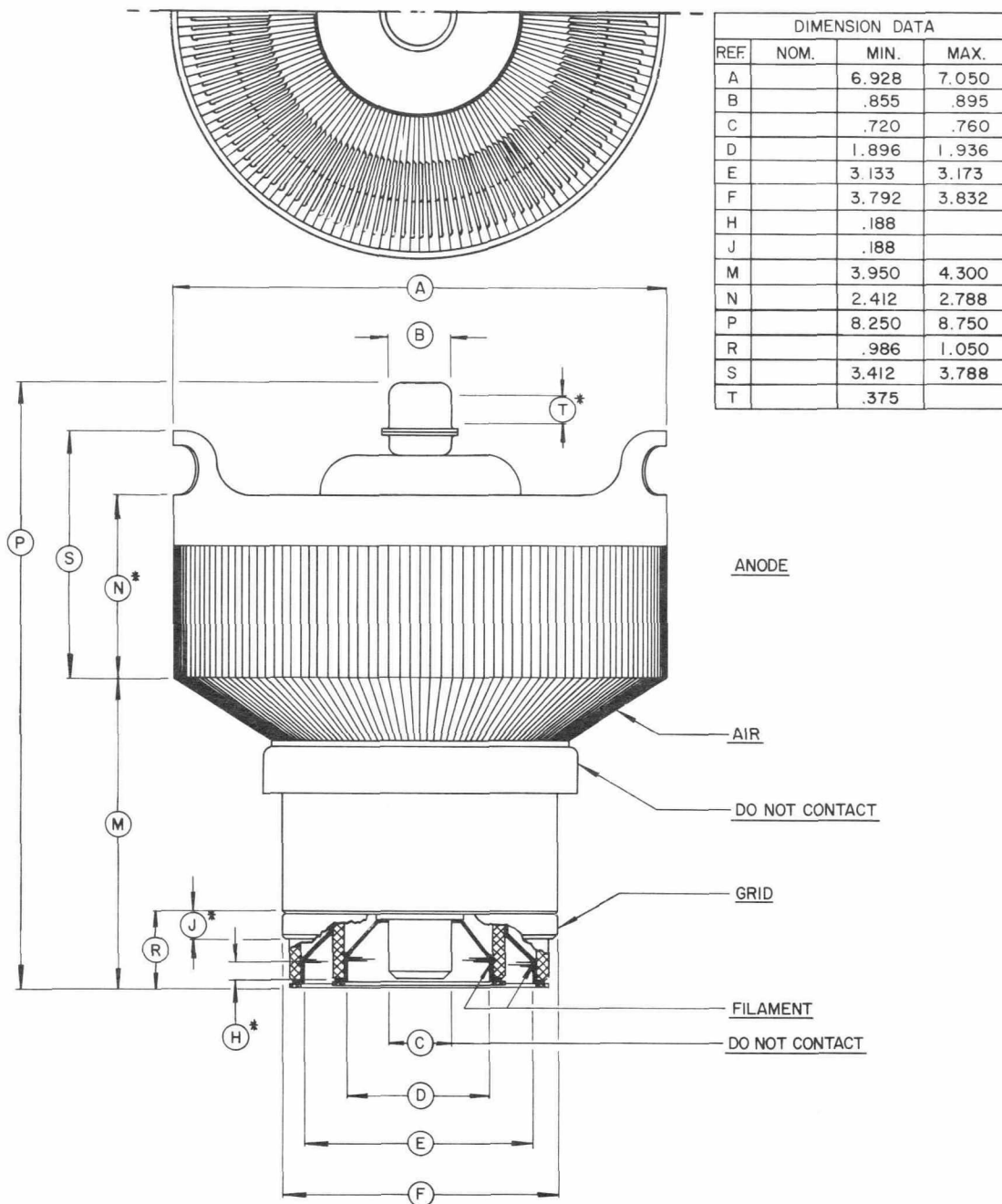
air-flow requirements to maintain anode-core and seal temperatures below 225°C with an inlet-air temperature of 50°C are tabulated. The use of these air-flow rates through the recommended socket/chimney and tube combination in the base-to-anode direction provides effective cooling of the tube.

Plate** Dissipation (Watts)	Sea Level		10,000 Feet	
	Air Flow (CFM)	Pressure Drop (Inches of Water)	Air Flow (CFM)	Pressure Drop (Inches of Water)
4000	110	.25	160	.36
6000	180	.53	260	.78
8000	270	.95	390	1.4
10,000	373	1.55	545	2.25
12,000	448	2.00	650	2.9

**Since the power dissipated by the filament is about 750 watts and since grid dissipation can, under some circumstances, represent another 250 watts, allowance has been made in preparing this tabulation for an additional 1000 watts dissipation.

Filament Operation - The rated filament voltage for the 3CX10,000A3 is 7.5 volts. Filament voltage, as measured at the socket, should be maintained at this value to obtain maximum tube life. In no case should it be allowed to deviate from the rated value by more than five percent.

Special Applications - If it is desired to operate this tube under conditions widely different from those given here, write to Power Grid Tube Marketing, EIMAC Division of Varian, 301 Industrial Way, San Carlos, California 94070, for information and recommendations.



Indicates change from sheet dated 7-1-61

*CONTACT SURFACE
ALL DIMENSIONS IN INCHES



3CX10,000A3

