

NOTES:  
 ■ RESISTORS IN OHMS  
 ■ RESISTORS ARE RN55 UNLESS OTHERWISE NOTED  
 ■ CAPACITORS IN uF  
 ■ INDUCTORS IN uH

- NOTES
1. L1, L3 - 45 turns AWG 24 Teflon 2" long by .5" diameter
  2. L2 - 4 turns AWG 12 bare .75" long by 1" diameter
  3. L4 - 1 turn AWG 12 bare .4" long by .8" diameter
  4. L5 - 10 turns AWG 12 heavy enamel on Fair-Rite 3061142001 (125 perm. .5" diameter by 2" long)
  5. K1 - 5 minute delay on break, K2 - 6 minute delay on make, K3 - 7 second delay on make

\* - If Required

QSOURCE PROPRIETARY

QSOURCE, INC.	
239 BURNHAM ST.	
EAST HARTFORD, CT 06108	
Title	300 KW RF AMPLIFIER
Size	Document Number
C	Q58002102-1
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Sheet	1 of 1



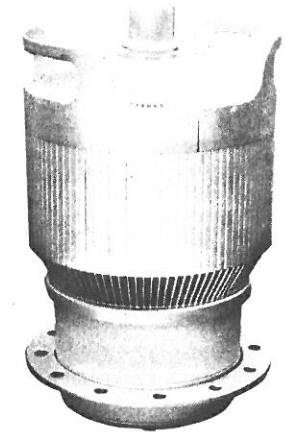
# TECHNICAL DATA

3CPX5000A7  
HIGH-MU  
POWER TRIODE

The 3CPX5000A7 is a ceramic/metal high-mu power triode designed for pulse applications. Utilizing beam-forming cathode and control grid geometry, this tube provides the gain of a tetrode with circuit advantages and simplified design of a triode. The attributes of high gain, low grid interception and outstanding intermodulation performance make this tube well suited for applications such as MRI and wind-profile radar service, or for pulsed linear amplifier service.

The 3CPX5000A7 is rated for pulsed rf amplifier service at a maximum plate voltage of 6500 Vdc. This tube is also useful in pulse modulator or pulse regulator service where accurately controlled waveforms are required; in this service the maximum rated plate voltage holdoff is 13 kVdc. The peak plate current rating in either service is 67 amperes.

The anode is forced-air cooled for 5000 watts of dissipation. The tube does not require a socket.



## GENERAL CHARACTERISTICS<sup>1</sup>

### ELECTRICAL

Cathode: Oxide Coated, Unipotential

Heater Voltage	15.0 ± 0.75	V
Heater Current, at 15.0 volts	15.0	A
Minimum Warmup Time (before application of rf drive and high voltage)	6	Min
Amplification Factor (approximate)	200	
Direct Interelectrode Capacitance (grid grounded) <sup>2</sup>		
Cin	92.5	pF
Cout	36.2	pF
Cpk	0.35	pF
Highest Frequency for Maximum Ratings (in Pulsed RF Service)	110	MHz

1. Characteristics and operating values are based on performance tests. These figures may change without notice as the result of additional data or product refinement. Varian EIMAC should be consulted before using this information for final equipment design.
2. Capacitance values are for a cold tube as measured with no special shielded fixture but otherwise in accordance with Electronic Industries Association Standard RS-191.

### MECHANICAL

Maximum Overall Dimensions

Length	8.25 in; 20.96 mm
Diameter	4.94 in; 12.55 mm
Net Weight	9.5 lb; 4.3 kg
Operating Position	Vertical, Base Up or Down
Cooling	Forced Air
Maximum Operating Temperature: Ceramic/Metal Seals or Anode Core	250°C
Base	Designed for Direct Chassis Mounting
Socket	None Required
Recommended Air Chimney	EIMAC SK-306
Available Anode Connector Clip, for DC, Pulse and LF/HF Applications	EIMAC ACC-3

PULSED RADIO FREQUENCY AMPLIFIER  
CATHODE DRIVEN Class B

ABSOLUTE MAXIMUM RATINGS:

DC PLATE VOLTAGE	6500	VOLTS
PEAK PLATE CURRENT #	67	AMPERES
DC PLATE CURRENT	3.75	AMPERES
PLATE DISSIPATION	5000	WATTS
DC GRID CURRENT	±0.10	AMPERE
INSTANTANEOUS GRID/CATHODE VOLTAGE	560	VOLTS
GRID DISSIPATION	25	WATTS

\* Approximate value. # Average during the pulse.  
¶ Estimated value.

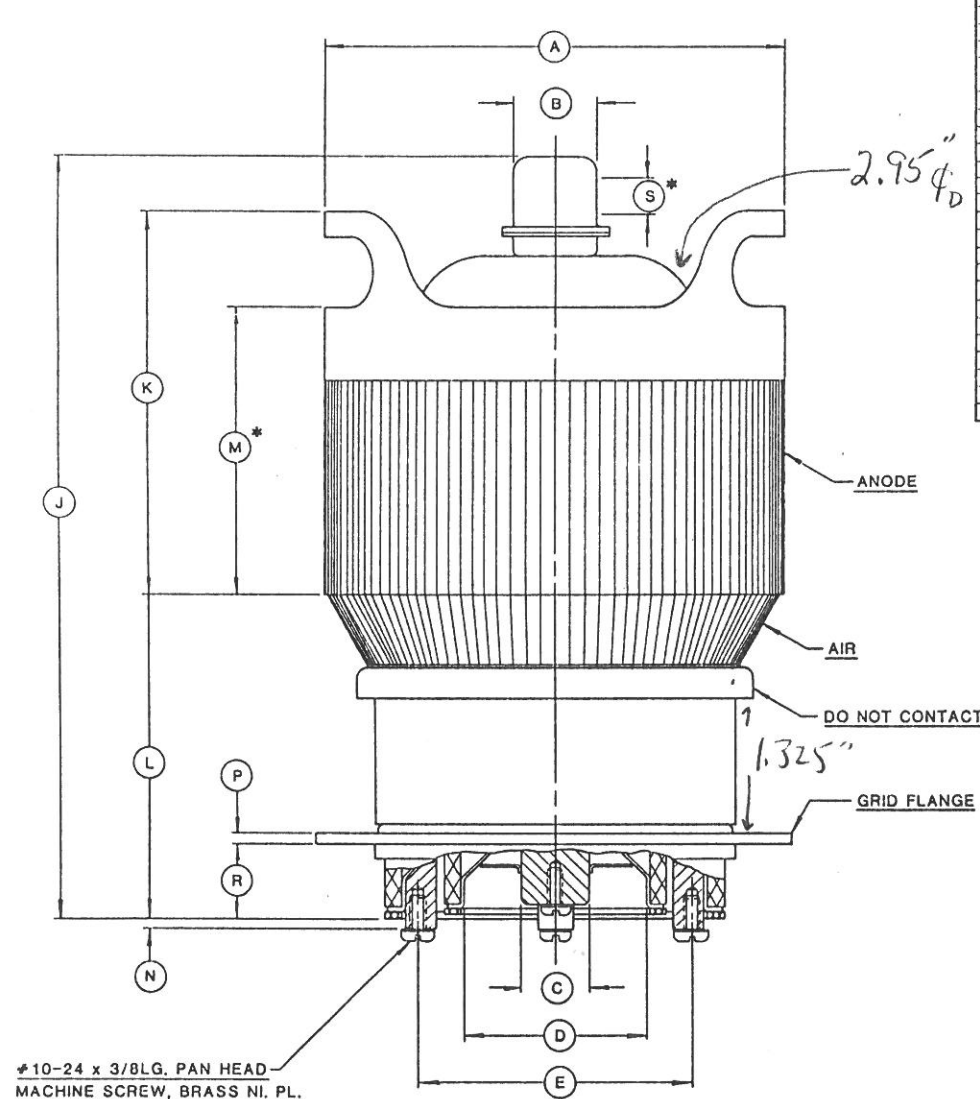
TYPICAL OPERATION - Measured Data at 50 MHz  
Class B Cathode Driven - Du = 0.06

Plate Voltage	6400	Vdc
Cathode Bias Voltage	+80	Vdc
Pulse Plate Current #	16.25	Adc
Pulse Power Input #	104	kW
Pulse Grid Current * #	600	mA
Peak Driving Power * #	5.6	kW
Peak (Useful) Power Output # ¶	63	kW
Cathode Input Impedance	16.6	Ohms
Resonant Load Impedance	204	Ohms
Power Gain	10.5	dB

VA5058(Effective Sept 1988)

Printed in U.S.A.

DIM.	INCHES			MILLIMETERS		
	MIN.	MAX.	REF.	MIN.	MAX.	REF.
A	4.812	4.938		122.22	125.43	
B	.855	.895		21.72	22.73	
C	.600	.760		15.24	19.30	
D	1.800	1.036		46.16	40.17	
E	2.895	2.935		73.53	74.55	
F	4.425	4.445		112.40	122.80	
G	6.030	6.090		127.76	129.29	
H			.265			6.73
J	8.017	8.287		203.83	209.98	
K	3.925	4.299		99.70	109.19	
L	3.223	3.597		81.86	91.36	
M	2.925	3.299		74.30	83.79	
N	.093	.156		2.36	3.96	
P			.125			3.18
R	.721	.845		18.31	21.49	
S	.375			9.53		
T						
U						
V						
W						
X						
Y						
Z						



NOTES:  
 1. REF DIMENSIONS ARE FOR INFO ONLY & ARE NOT REQUIRED FOR INSPECTION PURPOSES.  
 2. (\*) CONTACT SURFACE

#10-24 x 3/8 LG. PAN HEAD MACHINE SCREW, BRASS NI. PL. & #10 LOCKWASHER INTERNAL TOOTH BR. NI. PL. ( 5 EACH SUPPLIED )

