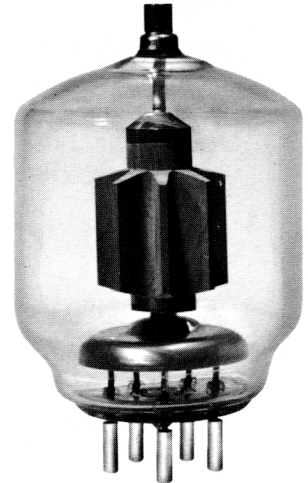


**E I M A C**  
 Division of Varian  
 S A N C A R L O S  
 C A L I F O R N I A

**5867A**  
 AIR-COOLED  
 MEDIUM MU  
 POWER TRIODE

The Eimac 5867A is a power triode designed primarily for use in Industrial Heating applications. The large heat storage capacity of the graphite anode aids in compensating for the wide variations in loading generally associated with this type of service. The 5867A is also suitable for use as an RF or AF Power Amplifier or Modulator.

The 5867A is cooled by radiation from the plate and by circulation of forced-air through the base, around the envelope, and over the plate seal. Cooling is greatly simplified by using the Eimac SK-410 Air-System Socket and SK-406 Air Chimney.



### GENERAL CHARACTERISTICS

#### ELECTRICAL

	Min.	Nom.	Max.
Filament: Thoriated Tungsten - - - -			
Voltage - - - - -		5.0	volts
Current - - - - -	13.5		14.7 amperes
Amplification Factor ( $E_b=2500$ V, $I_b=100$ ma) - - -		25	
Direct Interelectrode Capacitances			
Grid-Plate - - - - -	5.0		6.2 uuf
Grid-Filament - - - - -	6.5		8.0 uuf
Plate-Filament - - - - -			0.5 uuf
Transconductance ( $I_b=100$ ma) - - - - -		5,000	umhos
Highest Frequency for Maximum Ratings - - - - -			50 mc

#### MECHANICAL

Base - - - - -			see drawing
Mounting - - - - -			Vertical, base up or down
Cooling - - - - -			Radiation and forced-air
Maximum Operating Temperatures:			
Plate Seals - - - - -			220°C
Base Seals - - - - -			180°C
Maximum Overall Dimensions:			
Height - - - - -			5.875 inches
Diameter - - - - -			3.438 inches
Socket - - - - -			SK-410
Chimney - - - - -			SK-406
Heat Radiator Connector - - - - -			HR-6
Net Weight - - - - -			6 ounces



## RADIO-FREQUENCY POWER AMPLIFIER OR OSCILLATOR

CLASS-C FM or Telegraphy

TYPICAL OPERATION  
(Frequencies below 50 mc., per tube)

## MAXIMUM RATINGS

DC PLATE VOLTAGE	- - -	4,000 MAX. VOLTS
DC GRID VOLTAGE	- - -	-500 MAX. VOLTS
DC PLATE CURRENT	- - -	400 MAX. Ma.
PLATE DISSIPATION	- - -	350 MAX. WATTS
GRID DISSIPATION	- - -	30 MAX. WATTS

\*Approximate Value.

DC Plate Voltage	- - -	2,000	3,000	4,000	volts
DC Grid Voltage	- - -	-150	-250	-350	volts
DC Plate Current	- - -	400	365	380	ma
DC Grid Current	- - -	80	70	80	ma
Peak Grid Driving Voltage	-	320	430	535	volts
Driving Power*	- - -	25	27	40	watts
Plate Input Power	- - -	800	1,090	1,520	watts
Plate Output Power	- - -	585	840	1,200	watts

## CLASS-C OSCILLATOR, INDUSTRIAL APPLICATION SINGLE PHASE, FULL WAVE RECTIFIER, UNFILTERED

## MAXIMUM RATINGS

DC PLATE VOLTAGE	- - -	3,800 MAX. VOLTS
DC GRID VOLTAGE	- - -	-500 MAX. VOLTS
DC PLATE CURRENT	- - -	360 MAX. Ma.
PLATE DISSIPATION	- - -	350 MAX. WATTS
GRID DISSIPATION	- - -	30 MAX. WATTS
PLATE INPUT POWER	- - -	1,500 MAX. WATTS

TYPICAL OPERATION  
(Frequencies below 50 mc., per tube)

DC Plate Voltage	- - -	2,750	3,500	volts
DC Plate Current	- - -	340	325	ma
DC Grid Current	- - -	60	65	ma
Grid Resistor	- - -	3,330	4,500	ohms
Plate Input Power	- - -	935	1,400	watts
Plate Output Power	- - -	685	1,100	watts

## CLASS-C OSCILLATOR, INDUSTRIAL APPLICATION SELF-RECTIFIED

## MAXIMUM RATINGS

PLATE VOLTAGE (r.m.s.)	- - -	4,500 MAX. VOLTS
DC GRID VOLTAGE	- - -	-500 MAX. VOLTS
DC PLATE CURRENT	- - -	210 MAX. Ma.
PLATE DISSIPATION	- - -	350 MAX. WATTS
GRID DISSIPATION	- - -	30 MAX. WATTS
GRID RESISTOR	- - -	100,000 MAX. OHMS
PLATE INPUT POWER	- - -	900 MAX. WATTS

TYPICAL OPERATION  
(Frequencies below 50 mc., per tube)

Plate Voltage (r.m.s.)	- - -	3,000	4,000	volts
DC Grid Voltage	- - -	-110	-280	volts
DC Plate Current	- - -	180	190	ma.
DC Grid Current	- - -	32	35	ma.
Plate Input Power	- - -	600	840	watts
Plate Output Power	- - -	415	630	watts
Grid Resistor	- - -	3,000	5,500	ohms

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

## APPLICATION

### MECHANICAL

#### Mounting

The 5867A must be operated vertically, base up or down. A flexible strap must be provided between the heat dissipating plate connector and the external plate circuit. The tube must be protected from severe vibration and shock.

#### Cooling

Forced-air cooling is required to maintain base and plate seal temperatures below 180°C and 220°C, respectively. When using the Eimac SK-410 Air system socket and SK-410 Air Chimney, complete with the HR-6 Heat Radiator, a minimum air-flow in the base to anode direction of 12 cfm at sea level is required to provide adequate cooling at an inlet air temperature of 50°C. This flow rate corresponds to a static pressure drop of 0.1 inches of water. At higher inlet air temperatures, higher altitudes, or at frequencies above 50 mc, the air flow rate must be increased to give adequate cooling. Cooling air must be supplied to the tube even when the filament alone is on during standby periods.

When a socket other than the SK-410 is used, provisions must be made for equivalent cooling of the base, envelope and plate seals. In all cases, air flow rates in excess of the minimum requirements will prolong tube life.

### ELECTRICAL

#### Filament Voltage

For maximum tube life the filament voltage, as measured directly at the filament pins, should be the rated 5.0 volts. Variations in the filament voltage must be kept within the range of 4.75 and 5.25 volts.

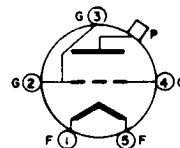
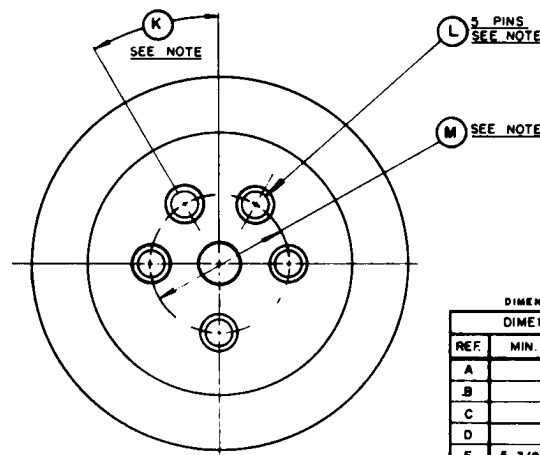
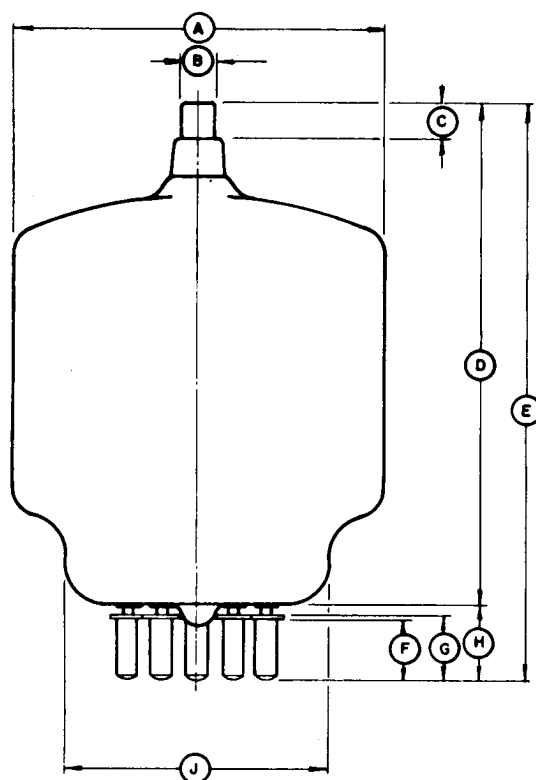
#### Grid Dissipation

The rated grid dissipation of the Eimac 5867A is 30 watts. Grid dissipation is the approximate product of the dc grid current and the peak positive grid voltage. In equipment where the plate loading varies widely, such as radiofrequency heating oscillators, care should be taken to insure that the grid dissipation does not exceed the 30 watt maximum.

To prevent overheating of a grid pin by RF currents, it is advisable to connect all three grid pins into the circuit.

#### Special Applications

If it is desired to operate this tube under conditions widely different than those given here, write to Power Grid Tube Marketing, Eitel-McCullough, Inc., 301 Industrial Way, San Carlos, California, for information and recommendations.



DIMENSIONS IN INCHES  
DIMENSIONAL DATA

REF.	MIN.	MAX.	NOM.
A		3 7/16 D.	
B		.365 D.	
C		.356 D.	
D		4 27/32	
E	5 3/8	5 7/8	
F	1/2	5/8	
G	9/16	11/16	
H			25/32
J		2 7/16 D.	
K			30P TYP
L	.185 D.	.191 D.	
M			1-1/4 D.P.C.

#### NOTE

BASE PINS (L) ARE SO ALIGNED THAT THEY CAN BE FREELY INSERTED INTO A GAUGE 1/4" THICK WITH HOLE DIA'S OF .204 LOCATED ON TRUE CENTERS BY THE GIVEN DIMENSIONS (K) & (M)



5867A

