

AMPEREX TUBE TYPES 4W300B • 4W300BF

The Amperex 4W300B and 4W300BF are oxide coated, external plate, water cooled power tetrodes.¹ They are designed for use in applications where reserve plate dissipation is desirable.

The 4W300BF is constructed with a flange for more convenient attachment of the water cooling system. It is designed for special applications where solid connections are necessary or desirable.

GENERAL CHARACTERISTICS

MECHANICAL

Dimensions	see outline drawing
Mounting Position	vertical, base up or down
Cooling	forced air and water ²
Maximum Operating Temperatures	
Glass to Metal Seals	175°C
Ceramic to Metal Seals	250°C
Accessories	
Socket	Johnson # 124-110-1, 124-112-1, or equal

ELECTRICAL

Cathode	coated, unipotential
Heater Voltage	6.0 volts
Heater Current	2.9 amps max
Minimum Heating Time	30 seconds
Transconductance ($I_b = 200$ mA)	12,000 micromhos
Screen grid Amplification Factor (Average)	5.2
Frequency for Maximum Ratings	500 Mc/s

Direct Interelectrode Capacitances (in shielded fixture)

Cathode Grounded

Input	17.2 $\mu\mu$ f max
Output	5.0 $\mu\mu$ f max
Feedback	0.06 $\mu\mu$ f max

Grounded Grid and Screen

Input	13.0 $\mu\mu$ f nom
Output	5.0 $\mu\mu$ f max
Feedback	13.0 $\mu\mu$ f nom

NOTES 1 and 2 see page 2

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PLATE MODULATED RF AMPLIFIER - CLASS C - TELEPHONY

Maximum Ratings

D-C Plate Voltage	1500 volts
D-C Screen Voltage	300 volts
D-C Grid Voltage	-250 volts
D-C Plate Current	200 mA
Plate Dissipation	200 watts
Screen Dissipation	12 watts
Grid Dissipation	2 watts

Typical Operation

D-C Plate Voltage	1500 volts
Power Input	300 watts
Driving Power	2 watts
Power Output	235 watts

RF POWER AMPLIFIER OR OSCILLATOR - CLASS C

TELEGRAPHY OR FM TELEPHONY

Maximum Ratings

D-C Plate Voltage	2000 volts
D-C Screen Voltage	300 volts
D-C Grid Voltage	-250 volts
D-C Plate Current	250 mA
Plate Dissipation	300 watts
Screen Dissipation	12 watts
Grid Dissipation	2 watts

Typical Operation

D-C Plate Voltage	2000 volts
Driving Power	3 watts
Power Input	500 watts
Power Output	390 watts

¹ The 4W300B and 4W300BF are electrically identical to the Amperex 4X250B.

² At a plate dissipation of 300 watts the plate requires 1/16 gallons of water per minute. The maximum outlet temperature is 70°C while the maximum pressure of the system is 50 lbs/sq in and the pressure drop is 0.02 lbs/sq in.

The seals are forced air cooled. Below 30 Mc/s, 1.0 CFM is sufficient, but the rate of air flow must be increased as the frequency increases so that at 500 Mc/s 3.8 CFM is required.

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AF AMPLIFIER OR MODULATOR - CLASS AB

Maximum Ratings (per tube)

D-C Plate Voltage	2000 volts
D-C Screen Voltage	400 volts
D-C Plate Current	250 mA
Plate Dissipation	300 watts
Screen Dissipation	12 watts
Grid Dissipation	2 watts

Typical Operation (two tubes)

D-C Plate Voltage	2000 volts
Power Input	1000 watts
Driving Power	0 watts
Power Output	600 watts

RF LINEAR AMPLIFIER - CLASS AB

SINGLE SIDEBAND SUPPRESSED CARRIER OPERATION

Maximum Ratings

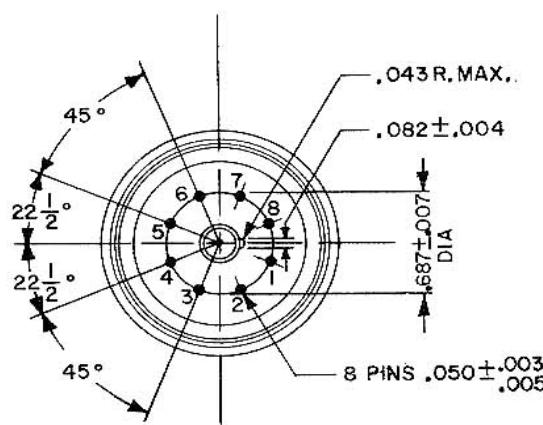
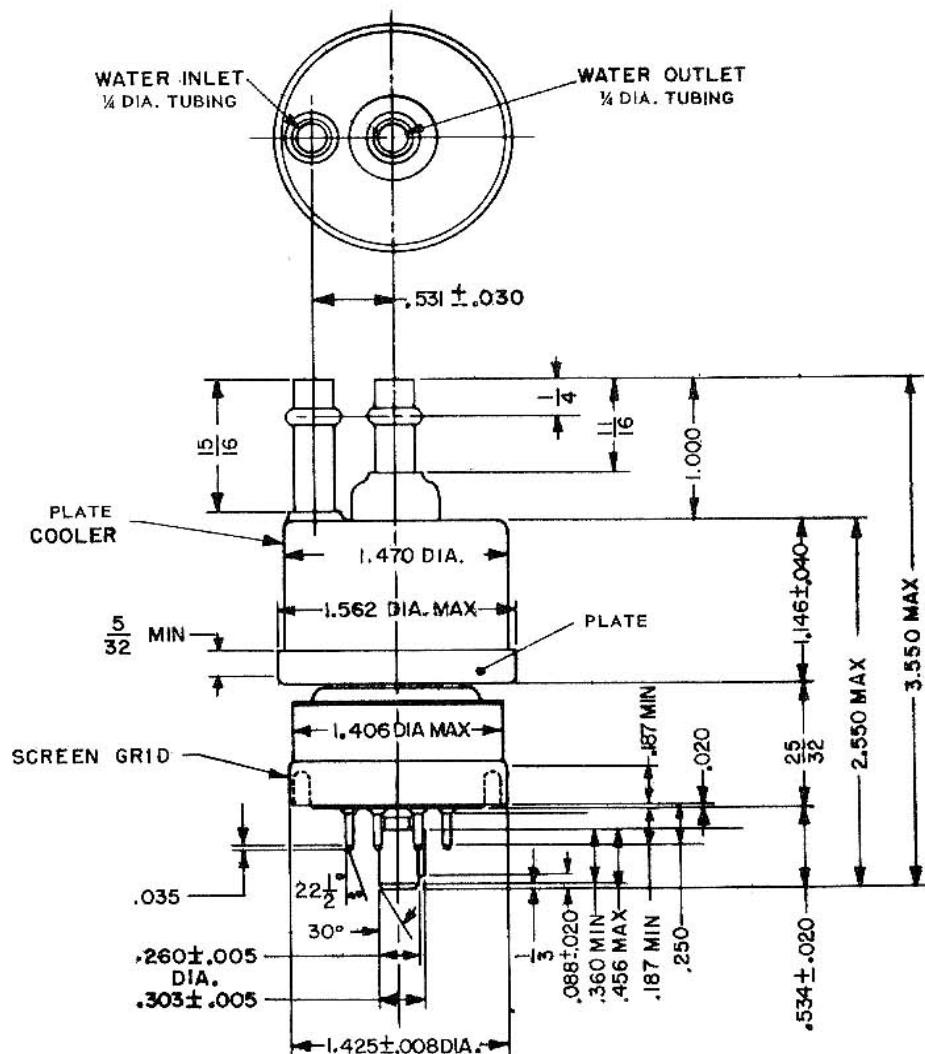
D-C Plate Voltage	2000 volts
D-C Screen Voltage	400 volts
D-C Plate Current	250 mA
Plate Dissipation	300 watts
Screen Dissipation	12 watts
Grid Dissipation	2 watts

Typical Operation

D-C Plate Voltage	2000 volts
Driving Power	0 watts
Power Input	500 watts
Power Output	300 watts

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OUTLINE AND PIN CONNECTIONS TUBE TYPE 4W300B



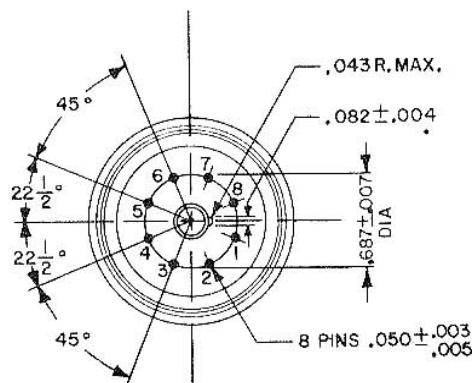
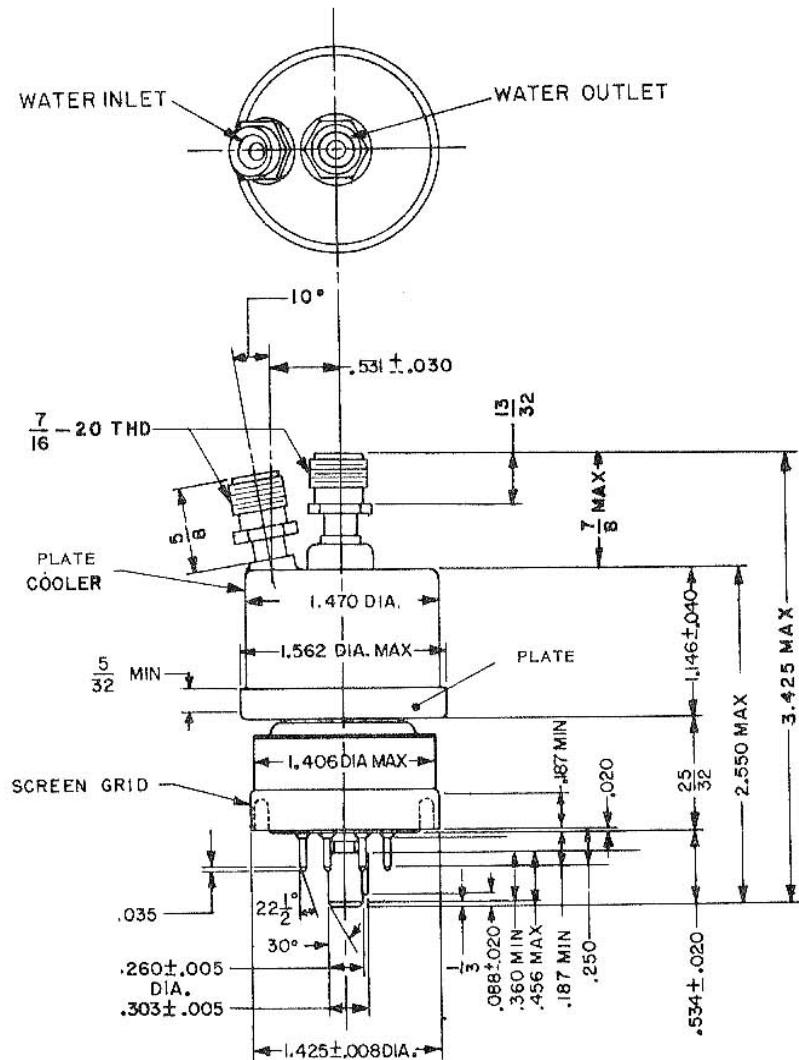
PIN CONNECTIONS

- 1 - SCREEN
- 2 - CATHODE
- 3 - HEATER
- 4 - CATHODE
- 5 - I.C. DO NOT USE FOR EXTERNAL CONN.
- 6 - CATHODE
- 7 - HEATER
- 8 - CATHODE

CENTER PIN - CONTROL GRID

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OUTLINE AND PIN CONNECTIONS TUBE TYPE 4W300BF



PIN CONNECTIONS

- 1 - SCREEN
- 2 - CATHODE
- 3 - HEATER
- 4 - CATHODE
- 5 - I.C. DO NOT USE FOR
EXTERNAL CONN.
- 6 - CATHODE
- 7 - HEATER
- 8 - CATHODE

CENTER PIN - CONTROL GRID