



EITEL-McCULLOUGH, INC.
SAN BRUNO · CALIFORNIA

TENTATIVE DATA

4W300B

RADIAL-BEAM

POWER TETRODE

The Eimac 4W300B is a compact radial-beam tetrode with a maximum plate-dissipation rating of 300 watts and a maximum input-power rating of 500 watts. Electrically identical to the Eimac 4X250B, it is intended for use where water cooling is preferred or where reserve anode dissipation is desired.

GENERAL CHARACTERISTICS

ELECTRICAL

	Min.	Nom.	Max.	
*Cathode: Oxide-Coated, Unipotential				
Heating Time	-	30		seconds
Heater: Voltage	-	6.0		volts
Current	-	2.3	2.9	amperes
Amplification Factor (Grid-Screen)		5.2		
Transconductance ($I_p=200$ ma.)		12,000		umhos
Frequency for Maximum Ratings			500	mc

Interelectrode Capacitances, Grounded Cathode:*						Min.	Nom.	Max.	
Input	-	-	-	-	-	14.2		17.2	uuf
Output	-	-	-	-	-	4.0		5.0	uuf
Feedback	-	-	-	-	-	-	-	0.06	uuf
Interelectrode Capacitances, Grounded Grid and Screen:*									
Input	-	-	-	-	-	-	13.0		uuf
Output	-	-	-	-	-	4.0		5.0	uuf
Feedback	-	-	-	-	-	-	0.01		uuf

MECHANICAL

Base	-	-	-	-	-	-	-	-	9-pin, special
Maximum Operating Temperatures:									
Glass-to-Metal Seals	-	-	-	-	-	-	-	-	175° C
Ceramic-to-Metal Seals	-	-	-	-	-	-	-	-	250° C
Cooling (See following page)	-	-	-	-	-	-	-	-	Water and forced air
Recommended Socket	-	-	-	-	-	-	-	-	Eimac SK-600 Series
Operating Position	-	-	-	-	-	-	-	-	Vertical, base down or up

MAXIMUM RATINGS

		Class-C Plate Mod	Class-C Teleg or FM	Class-AB Audio or SSB		
D-C PLATE VOLTAGE	-	1500	2000	2000	MAX.	VOLTS
D-C SCREEN VOLTAGE	-	300	300	400	MAX.	VOLTS
D-C GRID VOLTAGE	-	-250	-250	...	MAX.	VOLTS
D-C PLATE CURRENT	-	200	250	250	MAX.	MA
PLATE DISSIPATION	-	200	300	300	MAX.	WATTS
SCREEN DISSIPATION	-	12	12	12	MAX.	WATTS
GRID DISSIPATION	-	2	2	2	MAX.	WATTS

*In Shielded Fixture.





TYPICAL OPERATION	-	-	-	D-C Plate Voltage (Volts)	Power Input (Watts)	Driving Power (Watts)	Power Output (Watts)
Class-C Amplifier							
Telegraphy or FM	-	-	-	2000	500	3	390
Plate Modulated	-	-	-	1500	300	2	235
Class-AB₁ Amplifier							
Audio (Two tubes)	-	-	-	2000	1000	0	600
SSB (One tube)	-	-	-	2000	500	0	300

COOLING

The water-cooled anode requires a minimum of 1/16 gallon of cooling water per minute for the rated plate dissipation of 300 watts. The outlet-water temperature should not exceed 70° C and the system pressure should not exceed 50 pounds per square inch. The pressure drop across the cooler with the specified flow is approximately 0.02 pounds per square inch.

The glass-to-metal seals and the ceramic-to-metal seals must be cooled by forced air. At frequencies below 30 megacycles and when one of the recommended sockets is used, a flow rate of 1.0 CFM is sufficient. As the operating frequency is increased, the air-flow rate must be increased. At 500 megacycles a minimum of 3.8 CFM is required. In all cases, seal temperatures are the criteria which determine cooling effectiveness.

