



EIMAC

A Division of Varian Associates
S A N C A R L O S , C A L I F O R N I A

Tentative Data

X3034

**POWER AMPLIFIER
S-BAND**

(1.1 KW CW)

TWT

The Eimac X3034 is a power-amplifier TWT intended for use in broadband communications systems. It is designed to operate at frequencies from 1.7 to 2.1 gigacycles with a minimum output power of 1.1 kilowatts. The electron gun of this TWT has a confined flow configuration which makes focusing adjustments unnecessary and produces a stable beam. Excellent isolation between input and output is assured through the use of terminated severed circuits. This TWT incorporates the Eimac Modulating Anode which provides a versatile means for controlling the beam.

Eimac electromagnet assembly Type Number H-199 has been designed for use with the X3034.



CHARACTERISTICS

ELECTRICAL

Cathode: Impregnated, Unipotential

Heating Time	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5 Min
Heater: Voltage ($\pm 5\%$)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6 Vac or Vdc
Current (Nominal)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.8 Aac or Adc
Power Gain (Saturated)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20 db
Power Gain (Small Signal)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25 db
Output Power	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1 kW
Frequency Range	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7-2.1 Gc
Maximum Power Variation in any 50 Mc band (Note 1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 db

MECHANICAL

Maximum Dimensions:

Length	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34 $\frac{5}{8}$ inches
Width	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7 $\frac{1}{8}$ inches
Depth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7 $\frac{1}{2}$ inches
Weight (Including Electromagnet)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160 pounds
Input Coupling (rf)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Type N Coaxial
Output Coupling (rf)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$\frac{7}{8}$ " coaxial, EIA STD RS-225
Mounting Position	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Any
Cooling: Forced Air and Water																		
Cathode	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Flow Rate 20 cfm Pressure Drop free
Body	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 gpm 50 psi
Collector	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5 gpm 10 psi
Electromagnet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5 gpm 40 psi

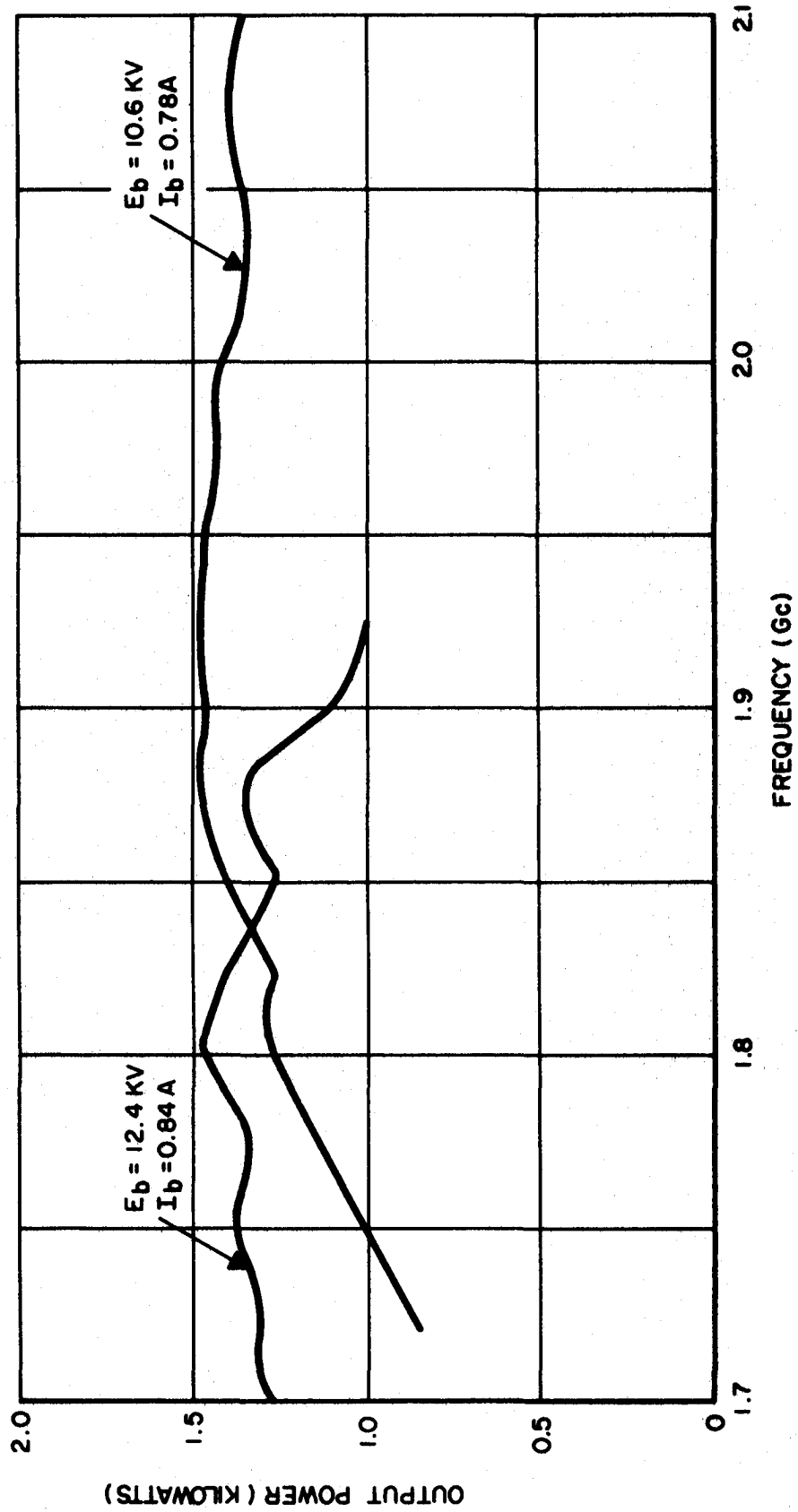


Upper Coil	-	-	-	-	-	-	-	-	-	-	-	-	Adjustable to 50 Vdc at 10 Adc
Lower Coil	-	-	-	-	-	-	-	-	-	-	-	-	Adjustable to 35 Vdc at 7 Adc

[illegible]

Frequency	-	-	-	-	-	-	-	-	-	1.7	1.8	1.9	2.0	2.1	Gc
Beam Voltage	-	-	-	-	-	-	-	-	-	12.4	12.4	10.6	10.6	10.6	kVdc
Beam Current	-	-	-	-	-	-	-	-	-	0.84	0.84	0.78	0.78	0.78	Adc
Mod Anode Voltage (with respect to cathode)	-	-	-	-	-	-	-	-	-	10.0	10.0	9.7	9.7	9.7	kVdc
Body Current	-	-	-	-	-	-	-	-	-	13	13	17	17	17	mAdc
Drive Power	-	-	-	-	-	-	-	-	-	10	10	10	10	10	W
Output Power	-	-	-	-	-	-	-	-	-	1.25	1.47	1.47	1.43	1.36	kW
Gain	-	-	-	-	-	-	-	-	-	20.9	21.6	21.6	21.5	21.3	db
Electromagnet Currents															
Upper Coil	-	-	-	-	-	-	-	-	-	9.5	9.5	9.5	9.5	9.5	Adc
Lower Coil	-	-	-	-	-	-	-	-	-	6	6	6	6	6	Adc

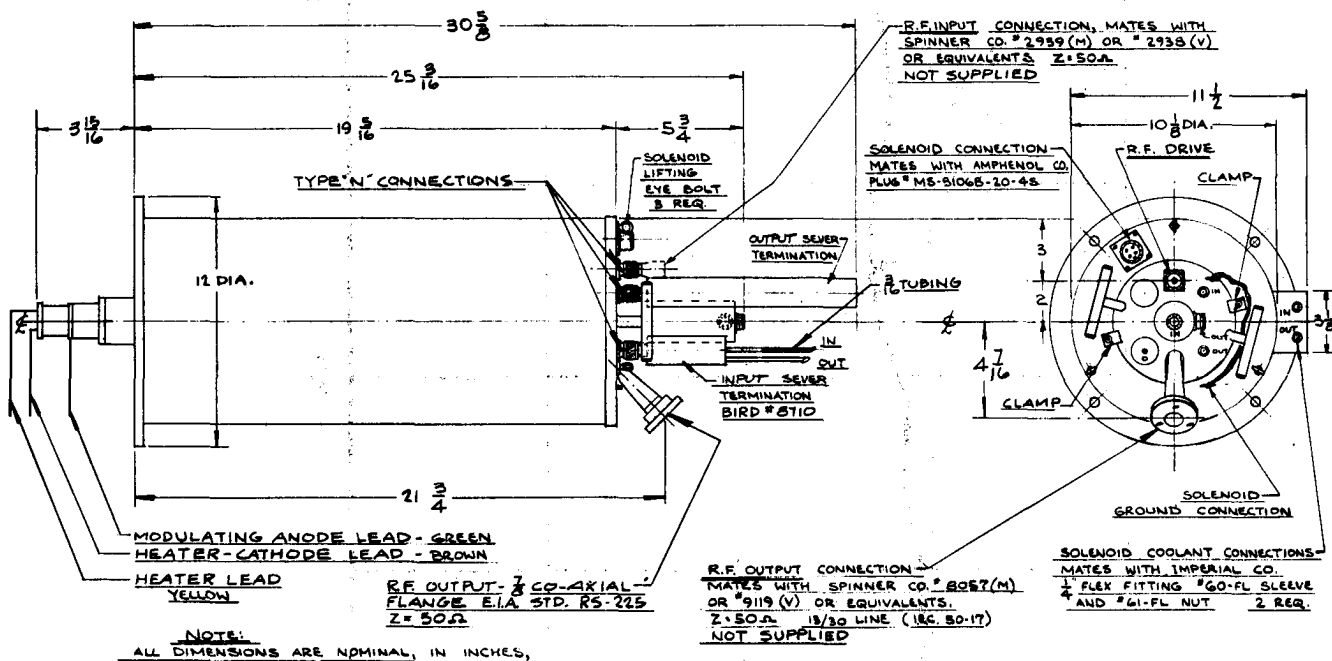
- (1) Beam Voltage may be optimized for each 50 Mc segment.
- (2) In the event of rapid change in VSWR such as caused by a transmission line arc, the rf drive must be removed in 20 milliseconds. It is recommended that an isolator be inserted in the output line between a re-active filter and the TWT.
- (3) The nominal input and output impedances are designed to work into 50 ohm transmission lines.



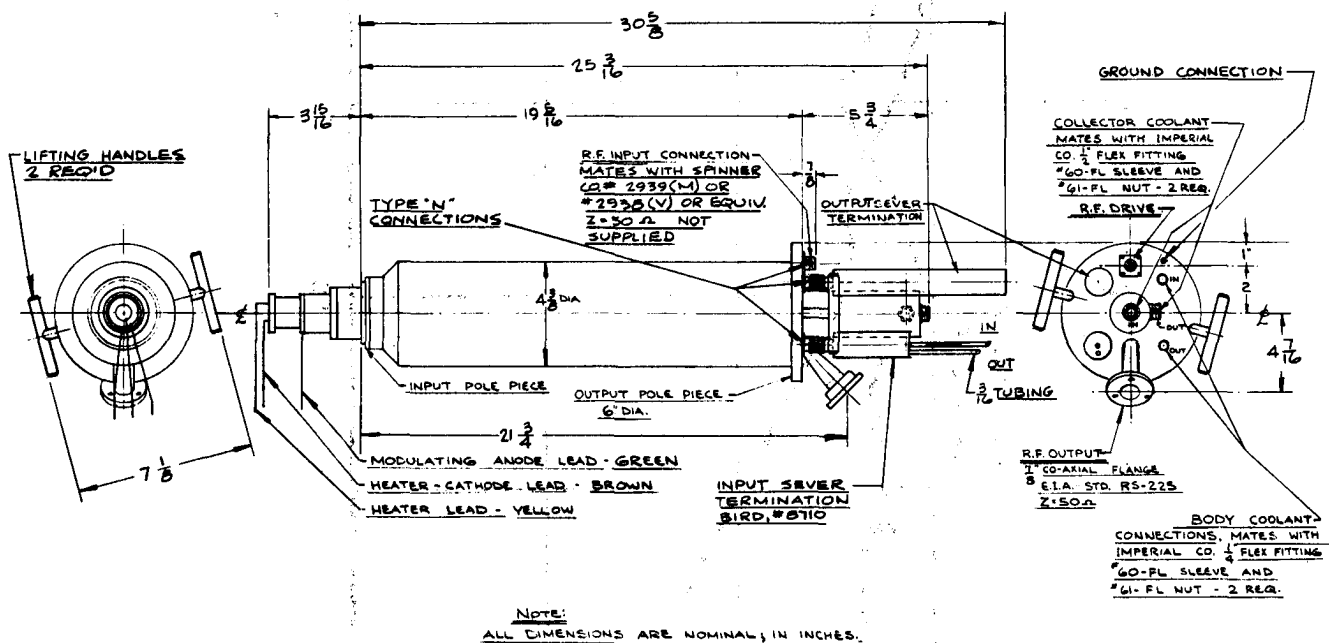
X-3034



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X-3034 AND H-199



X-3034 TWT