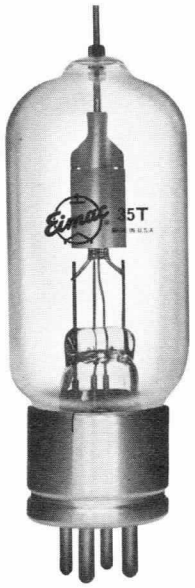
EIMAC
Division of Varian
SAN CARLOS
CALIFORNIA

35 T
HIGH-MU TRIODE

The EIMAC 35T is a high-mu triode having a maximum plate dissipation of 50 watts. It is intended for use as an amplifier, oscillator or modulator, and can be used at its maximum ratings at frequencies up to 100 MHz.

The 35T is cooled by radiation and by free circulation of air around the envelope. The plate operates at a visible red color at full dissipation.



CHARACTERISTICS

ELECTRICAL

	Min.	Nom.	Max.	
Filament: Thoriated Tungsten				
Voltage		5.0		volts
Current	3.6		4.2	amperes
Amplification Factor	35		43	
Direct Interelectrode Capacitances:				
Grid-Plate	1.4		2.2	pF
Grid-Filament	3.0		5.0	pF
Plate-Filament	0.08		0.23	pF
Transconductance (1_b =100 ma.)		2850		umhos
Frequency for Maximum Ratings			100	MHz

MECHANICAL

Base: UX Medium 4-pin. Fits E.F. Johnson Co. 122-224, or National XC-4 or CIR-4 sockets.

Basing	See outline drawing
Mounting	Vertical, base down or up.
Cooling	Convection and radiation.
Recommended Heat-Dissipating Plate Connector	Eimac HR-3
Maximum Overall Dimensions:	
Length	5.5 in
Diameter	1.8 in
Net Weight	2.5 oz
Shipping Weight (Average)	1.25 lbs

NOTE: In most cases, "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. Exceptions are distinguished by a listing of "Useful" output power as opposed to "Plate" output power. Values appearing in these groups have been obtained from existing equipment(s) and the output power is that measured at the load.

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AUDIO FREQUENCY POWER AMPLIFIER AND MODULATOR

Class-AB2 (Sinusoidal wave, two tubes unless otherwise specified)

MAXIMUM RATINGS

D-C PLATE VOLTAGE	2000 VOLTS
D-C PLATE CUTTENT	150 MA.
PLATE DISSIPATION	50 WATTS
GRID DISSIPATION	15 WATTS

TYPICAL OPERATION

D-C Plate Voltage	600	1000	1500	2000	Volts
D-C Grid Voltage (approx.)*	0	-8	-25	-40	Volts
Zero-signal D-C Plate Current	90	67	45	34	Ma.
Max-signal D-C Plate Current	300	240	200	167	Ma.
Effective Load Plate-to-Plate	4250	7900	16,200	27,500	Ohms
Peak A-F Input Voltage (per tube)	130	240	250	255	Volts
Peak Driving Power (approx.)	18	14	10	8	Watts
Nominal Driving Power (approx.)	9	7	5	4	Watts
Max-signal Plate Power Output	95	140	200	235	Watts

RADIO FREQUENCY POWER AMPLIFIER AND OSCILLATOR

Class-C Telegraphy or FM Telephony
(Key-down conditions, per tube)[1]

MAXIMUM RATINGS

D-C PLATE VOLTAGE	2000 VOLTS
D-C PLATE CURRENT	150 MA.
PLATE DISSIPATION	50 WATTS
GRID DISSIPATION	15 WATTS

TYPICAL OPERATION

D-C Plate Voltage	1000	1500	2000	Volts
D-C Grid Voltage	-60	-120	-135	Volts
D-C Plate Current	125	125	125	Ma.
D-C Grid Current	40	40	45	Ma.
Peak R-F Grid Input Voltage	165	250	285	Volts
Driving Power (approx.)	7	9	13	Watts
Grid Dissipation	4.2	5.0	6.8	Watts
Plate Power Input	125	188	250	Watts
Plate Dissipation	38	47	50	Watts
Plate Power Output	87	141	200	Watts

PLATE MODULATED RADIO FREQUENCY POWER AMPLIFIER

Class-C Telephony (Carrier conditions, per tube)[1]

MAXIMUM RATINGS

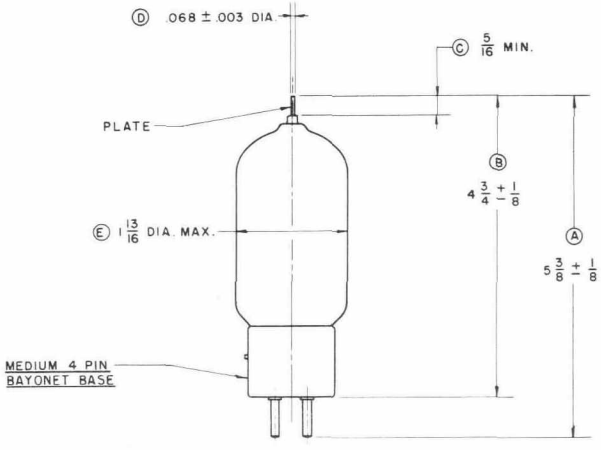
D-C PLATE VOLTAGE	1600 VOLTS
D-C PLATE CURRENT	120 MA.
PLATE DISSIPATION	33 WATTS
GRID DISSIPATION	15 WATTS

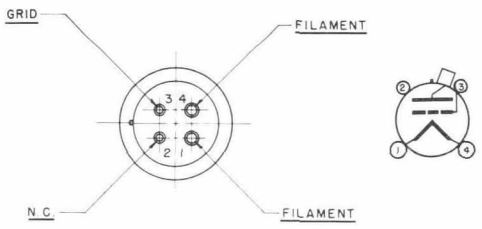
TYPICAL OPERATION

D-C Plate Voltage	750	1000	1500	Volts
D-C Grid Voltage	-100	-125	-150	Volts
D-C Plate Current	95	100	90	Ma.
D-C Grid Current	40	40	40	Ma.
Peak R-F Driving Voltage (approx.)	210	240	270	Volts
Driving Power (approx.)	9	10	11	Watts
Plate Dissipation	20	25	30	Watts
Plate Input	70	100	135	Watts
Plate Power Output	50	75	105	Watts

* Adjust for stated zero-signal plate current.

[1]The performance figures listed under Typical Operation are for radio frequencies up to the VHF region and are obtained by calculation from the characteristic tube curves and confirmed by direct tests. The driving power given includes power taken by the tube grid and the bias circuit. The driving power and output power do not allow for losses in the associated resonant circuits. These losses are not included because they depend principally upon the design and choice of the circuit components.



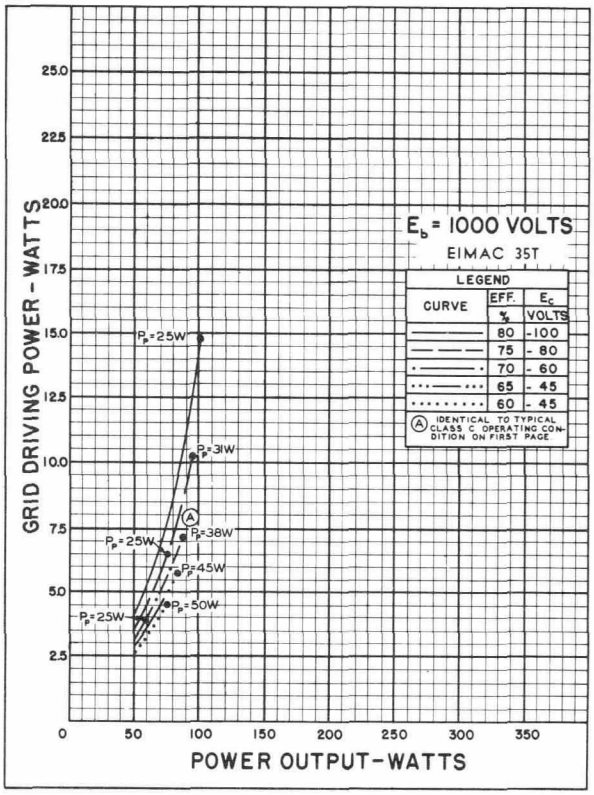


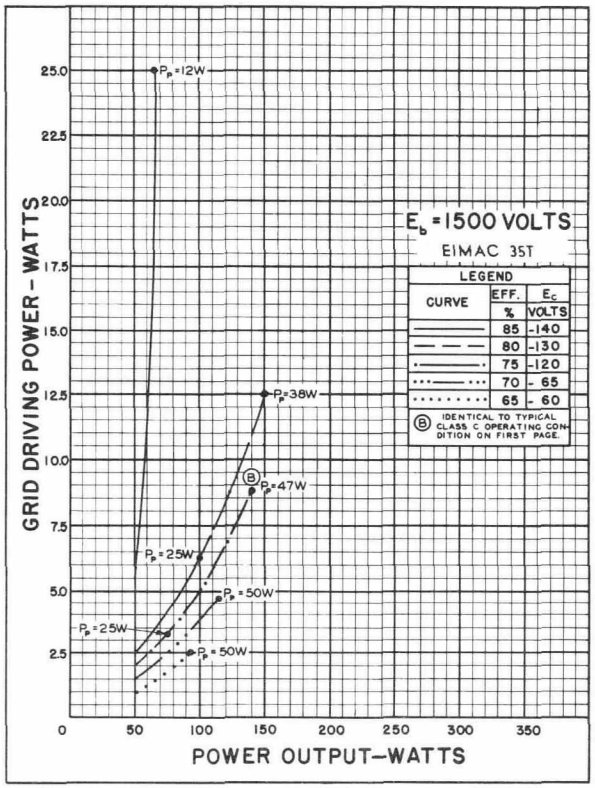
DESIGN TEST MEASUREMENTS: A, E,
TYPE APPROVAL MEASUREMENTS: B, D,
PRODUCTION TEST MEASUREMENTS: C,

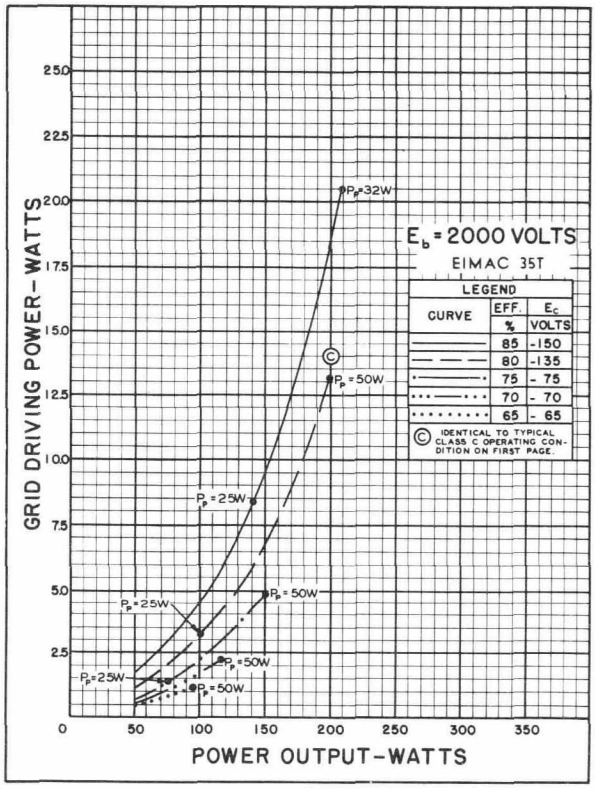
DRIVING POWER vs. POWER OUTPUT

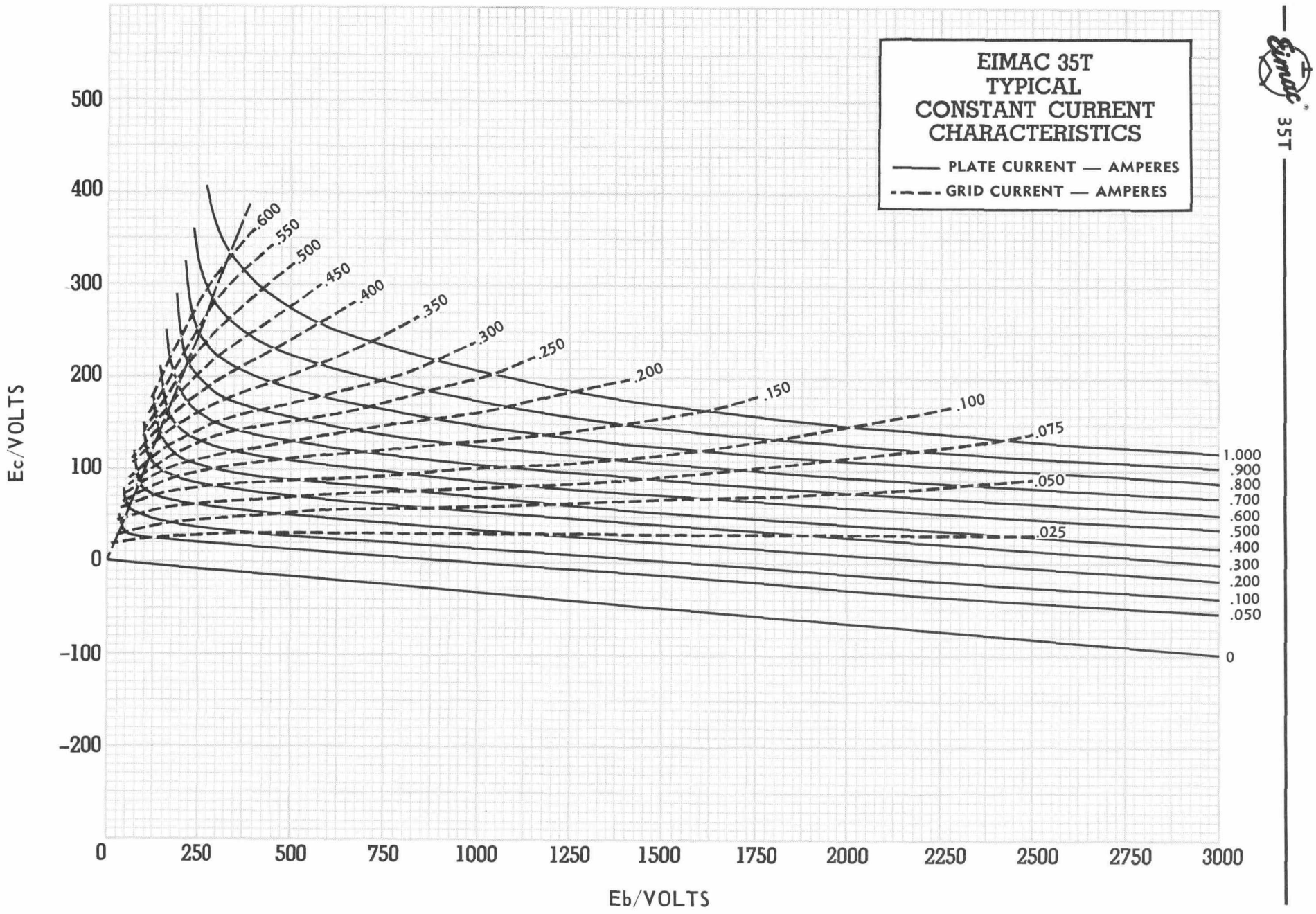
The three charts on this page show the relationship of plate efficiency, power output and grid driving power at plate voltages of 1000, 1500 and 2000 volts. These charts show combined grid and bias losses only. The driving power and power output figures do not include circuit losses. The plate dissipation in watts is indicated by P_P.

Points A,B, and C are identical to the typical Class C operating conditions shown on the first page under 1000, 1500, and 2000 volts respectively.








EIMAC 35T
TYPICAL
CONSTANT CURRENT
CHARACTERISTICS
PLATE CURRENT — AMPERES
GRID CURRENT — AMPERES
Ec/VOLTS
Eb/VOLTS
500
400
300
200
100
0
-100
-200
0
250
500
750
1000
1250
1500
1750
2000
2250
2500
2750
3000
.600
.550
.500
.450
.400
.350
.300
.250
.200
.150
.100
.075
.050
.025
1.000
.900
.800
.700
.600
.500
.400
.300
.200
.100
.050
0