Electronic TUBES

6L6-GA

Description and Rating

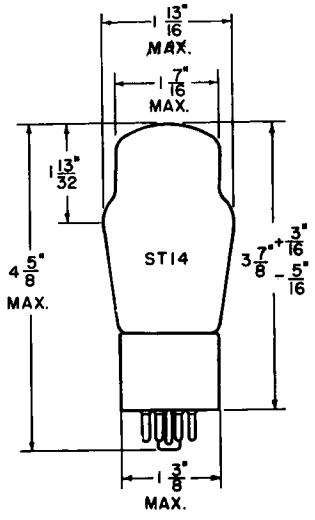
BEAM POWER AMPLIFIER

GENERAL DESCRIPTION

Principal Application: The type 6L6-GA is a beam power amplifier tetrode designed for use in the output stage of radio receivers or other equipment requiring high power output, power sensitivity and efficiency. The power output at all levels has low third and negligible higher-order harmonic distortion.

Cathode:	Coated Unipotential
Heater Voltage (A-C or D-C)	6.3 Volts
Heater Current	0.9 Ampere
Envelope:	ST-14 Glass
Base:	B7-12 Medium Shell Octal 7-Pin, Phenolic
Mounting Position:	Any

PHYSICAL DIMENSIONS

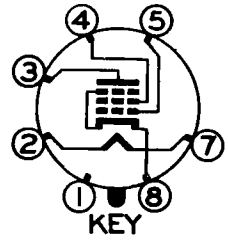


RMA 14-3

TERMINAL CONNECTIONS

Pin 1 - No Connection
Pin 2 - Heater
Pin 3 - Plate
Pin 4 - Grid Number 2 (Screen)
Pin 5 - Grid Number 1
Pin 7 - Heater
Pin 8 - Cathode and Beam Plates

BASING DIAGRAM



RMA 7AC
BOTTOM VIEW

MAXIMUM RATINGS

	Pentode Connection		Triode Connection		
	Design Center	Absolute	Design Center	Absolute	
Plate Voltage	360	395	250	275	Volts
Screen (Grid Number 2) Voltage	270	295	---	---	Volts
Screen Supply Voltage	360	395	---	---	Volts
Plate Dissipation	19.0	20.9	10	11	Watts
Screen Dissipation	2.50	2.75	---	---	Watts
D-C Heater-Cathode Voltage	180	200	180	200	Volts

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A AMPLIFIER

Heater Voltage	6.3	6.3	6.3	Volts
Plate Voltage	250	300	350	Volts
Screen Voltage	250	200	250	Volts
Grid Bias Voltage *	-14	-12.5	-18	Volts
Peak A-F Grid Voltage	14	12.5	18	Volts
Plate Resistance	22500	35000	33000	Ohms
Transconductance	6000	5300	5200	Micromhos
Zero-Signal Plate Current	72	48	54	Milliamperes
Zero-Signal Screen Current	5	2.5	2.5	Milliampere
Maximum-Signal Plate Current	79	55	66	Milliamperes
Maximum-Signal Screen Current	7.3	4.7	7.0	Milliamperes
Load Resistance	2500	4500	4200	Ohms
Total Harmonic Distortion	10	11	15	Per Cent
Maximum-Signal Power Output	6.5	6.5	10.8	Watts

PUSH-PULL CLASS A AMPLIFIER (VALUES FOR TWO TUBES)

	Fixed Bias		Cathode Bias	
Heater Voltage	6.3	6.3	6.3	Volts
Plate Voltage	250	270	270	Volts
Screen Voltage	250	270	270	Volts
Grid Bias Voltage *	-16	-17.5	---	Volts
Cathode Bias Resistor	---	---	125	Ohms
Peak A-F Grid-to-Grid Voltage	32	35	40	Volts
Plate Resistance	24500	23500	---	Ohms
Transconductance	5500	5700	---	Micromhos
Zero-Signal Plate Current	120	134	134	Milliamperes
Zero-Signal Screen Current	10	11	11	Milliampere
Maximum-Signal Plate Current	140	155	145	Milliamperes
Maximum-Signal Screen Current	16	17	17	Milliamperes
Load Resistance (Plate to Plate)	5000	5000	5000	Ohms
Total Harmonic Distortion	2	2	2	Per Cent
Maximum-Signal Power Output	14.5	17.5	18.5	Watts

PUSH-PULL CLASS AB AMPLIFIER (VALUES FOR TWO TUBES)

	Fixed Bias		Cathode Bias	
Heater Voltage	6.3	6.3	6.3	Volts
Plate Voltage	360	360	360	Volts
Screen Voltage	270	270	270	Volts
Grid Bias Voltage *	-22.5	-22.5	---	Volts
Cathode Bias Resistor	---	---	250	Ohms
Peak A-F Grid-to-Grid Voltage	45	45	57	Volts
Zero-Signal Plate Current	88	88	88	Milliamperes
Zero-Signal Screen Current	5	5	5	Milliamperes
Maximum-Signal Plate Current	132	140	100	Milliamperes
Maximum-Signal Screen Current	15	11	17	Milliampere
Load Resistance (Plate to Plate)	6600	3800	9000	Ohms
Total Harmonic Distortion	2	2	4	Per Cent
Maximum-Signal Power Output	26.5	18	24.5	Watts

** Transformer- or impedance-type input coupling devices are recommended to minimize resistance in the grid circuit. The d-c resistance in the grid circuit should not exceed 0.1 megohm with fixed bias or 0.5 megohm with cathode bias*

PUSH-PULL CLASS AB_2 AMPLIFIER (VALUES FOR TWO TUBES)

Heater Voltage	6.3	6.3	Volts
Plate Voltage	360	360	Volts
Screen Voltage	225	270	Volts
Grid Bias Voltage *	-18	-22.5	Volts
Peak A-F Grid-to-Grid Voltage	52	72	Volts
Zero-Signal Plate Current	78	88	Milliamperes
Zero-Signal Screen Current	3.5	5	Milliamperes
Maximum-Signal Plate Current	142	205	Milliamperes
Maximum-Signal Screen Current	11	16	Milliamperes
Load Resistance (Plate to Plate)	6000	3800	Ohms
Peak Grid-Input Power **	140	270	Milliwatts
Total Harmonic Distortion	2	2	Per Cent
Maximum-Signal Power Output	31	47	Watts

CLASS A AMPLIFIER - TRIODE CONNECTION (SCREEN CONNECTED TO PLATE)

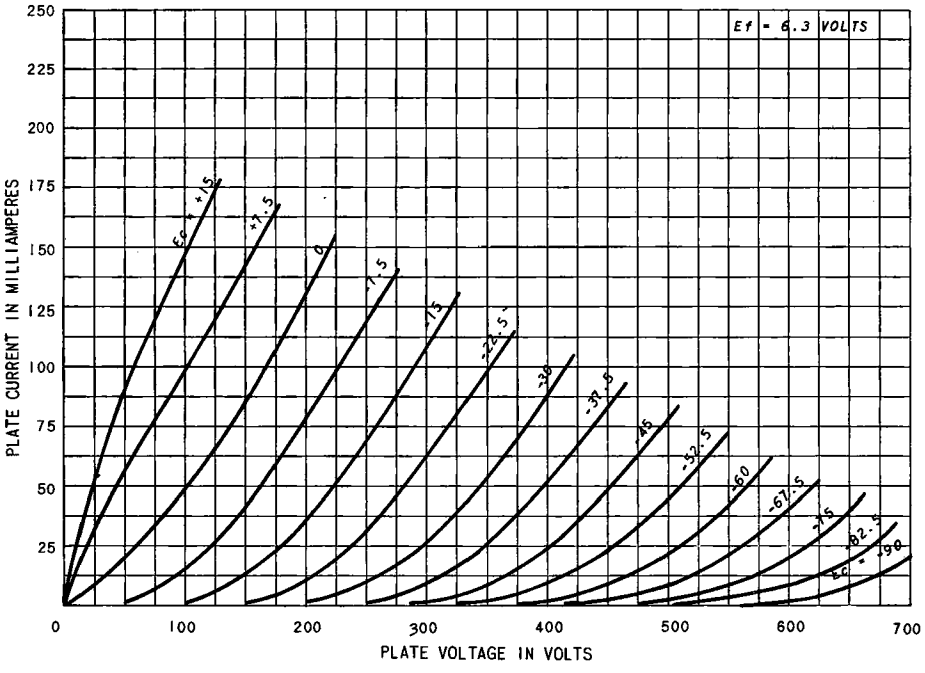
Heater Voltage	6.3	6.3	Volts
Plate Voltage	250	250	Volts
Grid Bias Voltage *	-20	---	Volts
Cathode Bias Resistor	---	490	Ohms
Peak A-F Grid Voltage	20	20	Volts
Amplification Factor	8.0	---	
Plate Resistance	1700	---	Ohms
Transconductance	4700	---	Micromhos
Zero-Signal Plate Current	40	40	Milliamperes
Maximum-Signal Plate Current	44	42	Milliamperes
Load Resistance	5000	6000	Ohms
Total Harmonic Distortion	5	6	Per Cent
Maximum-Signal Power Output	1.4	1.3	Watts

** Transformer- or impedance-type input coupling devices are recommended to minimize resistance in the grid circuit. The d-c resistance in the grid circuit should not exceed 0.1 megohm with fixed bias or 0.5 megohm with cathode bias.*

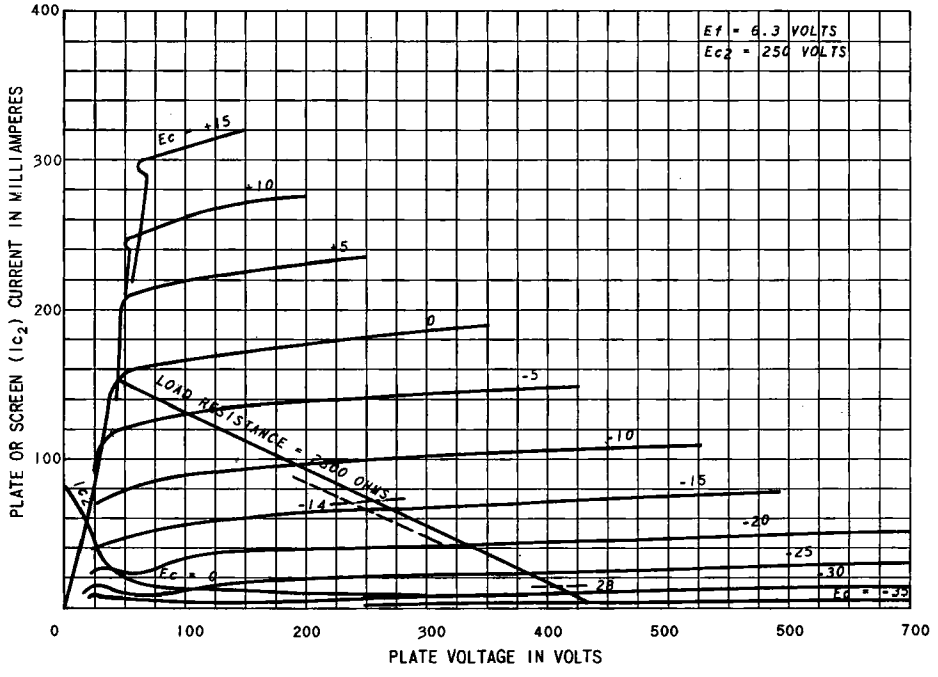
*** The driver stage should supply the grids of the class AB_2 stage with the specified peak values at low distortion. The effective resistance per grid circuit of the class AB_2 stage should not exceed 500 ohms and the effective impedance at the highest response frequency should not exceed 700 ohms.*

AVERAGE PLATE CHARACTERISTICS

TRIODE CONNECTION

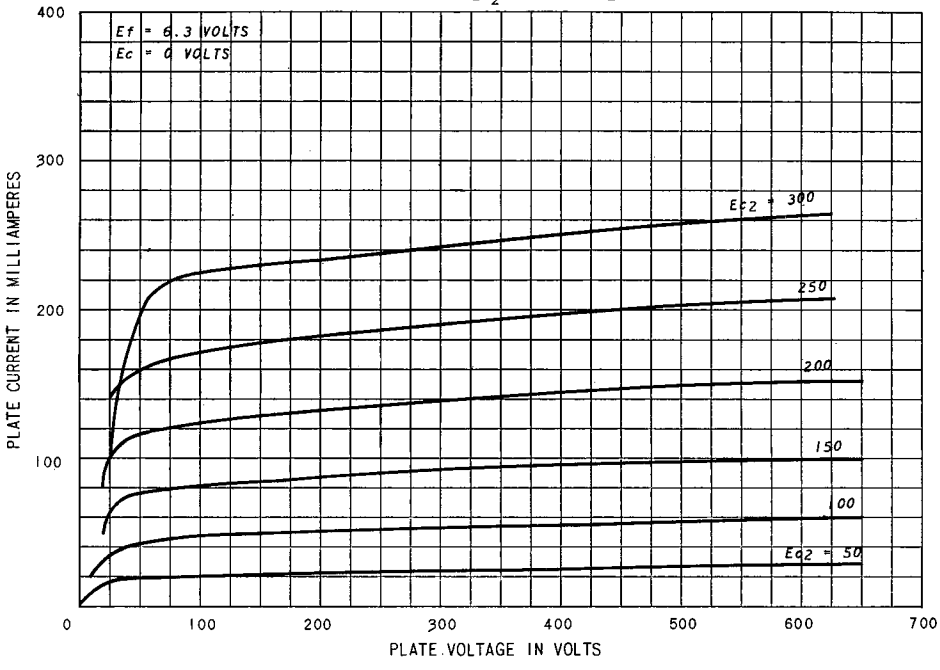


AVERAGE PLATE CHARACTERISTICS

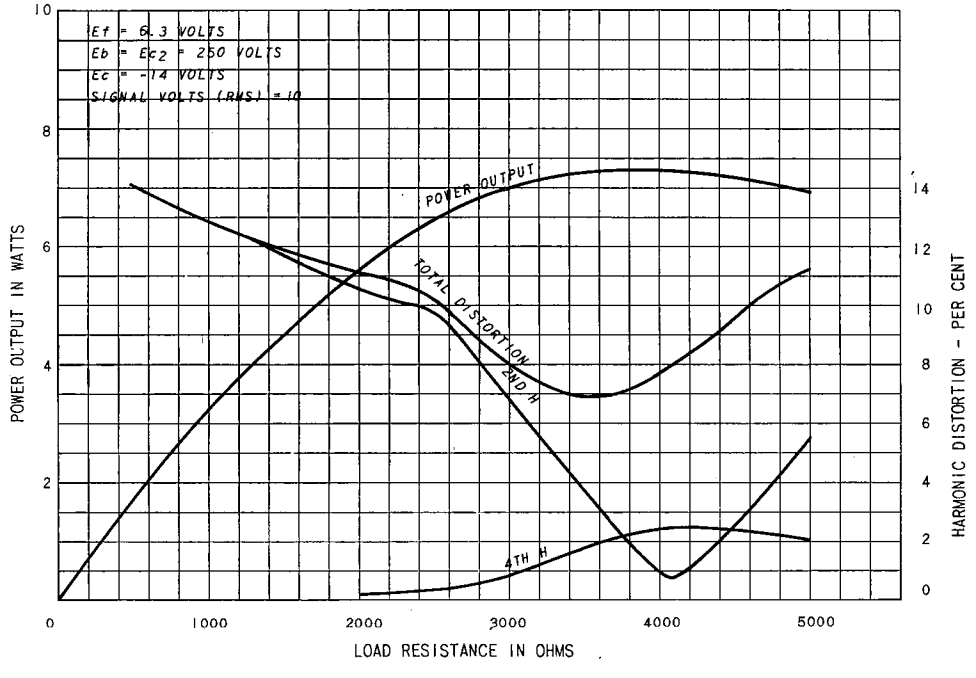


AVERAGE PLATE CHARACTERISTICS

WITH Ec_2 AS VARIABLE



OPERATION CHARACTERISTICS



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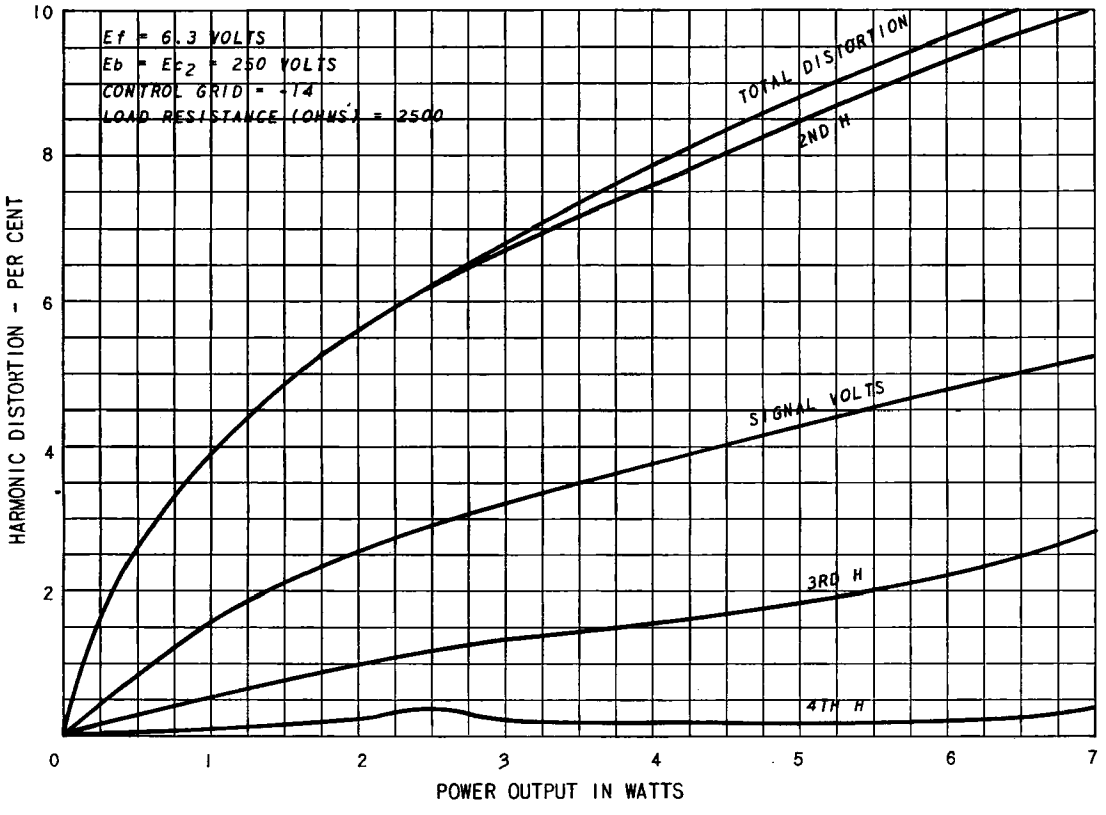

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