

6L6
6L6G

RAYTHEON

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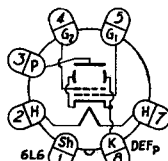
TETRODE
POWER AMPLIFIER
Heater Type

Metal Bulb-6L6 Glass Bulb-6L6G

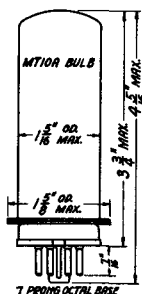
The 6L6 is a tetrode type power amplifier tube designed for service in the output stage of storage battery or a-c operated receivers.

RATINGS

Heater Voltage (a-c or d-c)#	6.3	volts
Heater Current	0.9	amp
Max. Plate Voltage	400	volts
Max. Screen Voltage	300	volts
Max. Plate & Screen Dissipation (total)†	24	watts
Max. Screen Dissipation	3.5	watts



BOTTOM VIEW OF SOCKET
6L6G - NO CONNECTION
TO #1 PIN



AMPLIFIER - CLASS A - FIXED BIAS

Plate Voltage	250	300	375	375 max.	volts
Screen Voltage	250	200	125	250 max.	volts
Grid Bias	-14	-12.5	-9	-17.5	volts
Signal Peak Voltage	14	12.5	8	17.5	volts
Amplification Factor	135				
Plate Resistance	22500				ohms
Transconductance	6000				umhos
No-Sig. Plate Current	72	48	24	57	ma
Max. Sig. Plate Current	79	55	26	67	ma
No-Sig. Screen Current	5	2.5	0.7	2.5	ma
Max. -Sig. Screen Current	7.3	4.7	2	6	ma
Load Resistance	2500	4500	14000	4000	ohms
Total Harmonics	10	11	9	14.5	percent
Second Harmonic	9.7	10.7	8	11.5	percent
Third Harmonic	2.5	2.5	4	4.2	percent
Power Output	6.5	6.5	4.2	11.5	watts

AMPLIFIER - CLASS A - SELF-BIAS

Plate Voltage	375	300	250	volts
Screen Voltage	125	200	250	volts
Self-Bias Resistor	365	220	170	ohms
Signal Peak Voltage	8.5	12.5	14	volts
No-Sig. Plate Current	24	51	75	ma
Max. -Sig. Plate Current	24.3	54.5	78	ma
No-Sig. Plate Current	0.7	3	5.4	ma
Max. -Sig. Screen Current	1.8	4.6	7.2	ma
Load Resistance	14000	4500	2500	ohms
Total Harmonics	9	11	10	percent
Second Harmonic	8	10.7	9.7	percent
Third Harmonic	4	2.5	2.5	percent
Power Output	4	6.5	6.5	watts

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AVERAGE PLATE CHARACTERISTICS

$E_f = 6.3V$

$E_{g2} = 250V$

— LOAD LINE - NO SIGNAL

— LOAD LINE - MAXIMUM SIGNAL

6L6

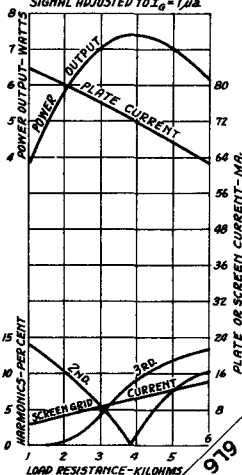
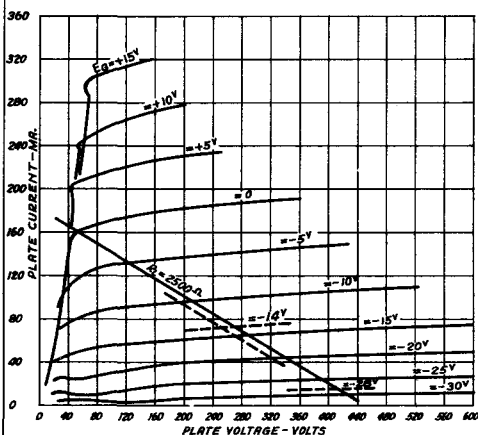
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AVERAGE CHARACTERISTICS

CLASS A OPERATION

$E_f = 6.3V$ $E_p = 250V$ $E_{g2} = 250V$ $E_{g1} = -14V$

SIGNAL ADJUSTED TO $I_{a0} = 1\mu A$



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AMPLIFIER - CLASS A - PUSH-PULL - TWO TUBES

		Fixed-Bias	Self-Bias	
Plate Voltage	375 max.	250	250	volts
Screen Voltage	250 max.	250	250	volts
Grid Bias		-16		volts
Self-Bias Resistor			125	ohms
Signal Peak Voltage (grid to grid)		32	35.6	volts
No-Signal Plate Current		120	120	ma
Max.-Signal Plate Current		140	130	ma
No-Signal Screen Current		10	10	ma
Max.-Signal Screen Current		16	15	ma
Load Resistance (plate to plate)		5000	5000	ohms
Total Harmonics		2	2	percent
Third Harmonic		2	2	percent
Power Output		14.5	13.8	watts

AMPLIFIER - CLASS AB₁ - PUSH-PULL - TWO TUBES

		Fixed-Bias		Self-Bias		
Plate Voltage	400	400	400	400	400	volts
Screen Voltage	250	250	300	250	300	volts
Grid Bias	-20	-20	-25	-25		volts
Self-Bias Resistor				190	200	ohms
Signal Peak Voltage (g to g)	40	40	50	50	43.8	volts
No-Signal Plate Current	88	88	102	102	96	ma
Max.-Signal Plate Current	124	126	152	156	110	ma
No-Signal Screen Current	4	4	6	6	4.6	ma
Max.-Signal Screen Current	12	9	17	12	10.8	ma
Load Resistance (p to p)	8500	6000	6600	3800	8500	ohms
Total Harmonics	2	1	2	0.6	2	percent
Third Harmonic	2	1	2	0.6	2	percent
Power Output	26.5	20	34	23	24	watts

AMPLIFIER - CLASS AB₂ - PUSH-PULL - TWO TUBES

	Fixed-Bias	Fixed-Bias	
Plate Voltage	400	400	volts
Screen Voltage	250	300	volts
Grid Bias	-20	-25	volts
Signal Peak Voltage (grid to grid)	57	80	volts
No-Signal Plate Current	88	102	ma
Max.-Signal Plate Current	168	230	ma
No-Signal Screen Current	4	6	ma
Max.-Signal Screen Current	13	20	ma
Load Resistance (plate to plate)	6000	3800	ohms
Peak Driving Power	180	350	mW
Total Harmonics ‡	2	2	percent
Third Harmonic ‡	2	2	percent
Power Output	40	60	watts

#Under maximum dissipation conditions the heater voltage should never fluctuate so that it exceeds 7.0 volts. The voltage between heater and cathode should be kept as low as possible.

†The rated dissipation should not be exceeded with expected line voltage fluctuations, especially in fixed-bias operation. Fixed-bias values up to 10% of each typical screen voltage can be used without increasing distortion.

‡With ideal driver and perfect power supply regulation.

