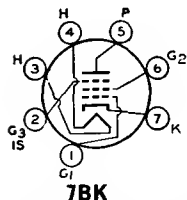


MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:

For fixed-bias operation	0.1	megohm
For cathode-bias operation	0.5	megohm

* This value can be measured by a method involving a recurrent waveform such that the maximum ratings of the tube will not be exceeded.



SHARP-CUTOFF PENTODE

7543

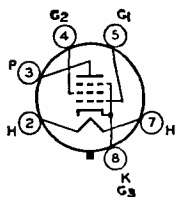
Miniature type used in compact audio equipment. Outlines section, 5C; requires miniature 7-contact socket. This type is identical with miniature type 6AU6A except that it has a controlled hum characteristic.

HUM OUTPUT VOLTAGE

Average Value, (rms, cathode bypassed)	1.2†	millivolts
Average Value (rms, cathode unbypassed)	0.9*	millivolt

† Measured in "true rms" units under the following conditions: heater volts (ac), 6.3; center tap of heater transformer connected to ground; plate and grid-No.2 supply volts, 250; plate load resistor, 0.27 megohm; grid No.3 and internal shield connected to cathode at socket; grid-No.2 resistor, 0.68 megohm; grid-No.1 resistor, 0.1 megohm; cathode resistor, 1000 ohms; grid resistor of following stage, 10 megohms; and stage gain, 340.

* Same conditions as above except that cathode resistor is unbypassed and stage gain is 110.



BEAM POWER TUBE

7581A

Glass octal type used in af power-amplifier applications. Outlines section, 19D; requires octal socket. For typical operation as push-pull class A₁, class AB₁, and class AB₂ amplifier, refer to type 6L6GC. This tube, like other power-handling tubes, should be adequately ventilated. Heater: volts (ac/dc), 6.3; amperes, 0.9; maximum heater-cathode volts, ±200.

Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	—
Grid-No.2 (Screen-Grid) Voltage	—
Plate Dissipation	35
Grid-No.2 Input	—

Triode Connection*

450
—
35
—

Pentode Connection

500	volts
450#	volts
35	watts
5	watts

CHARACTERISTICS

Plate Voltage	70
Grid-No.2 Voltage	300
Grid-No.1 Voltage	0
Plate Resistance (Approx.)	—
Transconductance	—
Plate Current	210
Grid-No.2 Current	25

250	volts
250	volts
—14	volts
22500	ohms
6000	μmhos
72	mA
5	mA

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:

For fixed-bias operation	0.1	0.1	megohm
For cathode-bias operation	0.5	0.5	megohm

* Grid No.2 connected to plate.

In push-pull circuits where grid No.2 of each tube is connected to a tap on the plate winding of the output transformer, this maximum rating is 500 volts.

^ Applied for short interval (2 seconds) so as not to damage tube.

Class A₁ Amplifier (Triode Connection)**MAXIMUM RATINGS** (Same as for Class A₁ Amplifier)**TYPICAL OPERATION**

Plate Voltage	250	volts
Grid-No.1 Voltage	—20	volts
Peak AF Grid-No.1 Voltage	20	volts
Amplification Factor	8	
Plate Resistance (Approx.)	1700	ohms
Transconductance	4700	μmhos
Zero-Signal Plate Current	40	mA
Maximum-Signal Plate Current	44	mA
Load Resistance	5000	ohms
Total Harmonic Distortion (Approx.)	5	per cent
Maximum-Signal Power Output	1.4	watts

7591

Refer to chart at end of section.

7591A**POWER PENTODE**

Glass octal type used as audio-frequency power-out-tube in high-quality audio applications. Outlines section, 13D; requires octal socket. Heater: volts (ac/dc), 6.3; amperes, 0.8; maximum heater-cathode volts, ± 200 peak, 100 average.

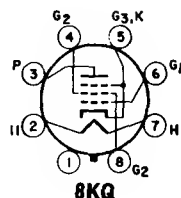
**Class A₁ Amplifier****MAXIMUM RATINGS** (Design-Maximum Values)

Plate Voltage	550	volts
Grid-No.2 (Screen-Grid) Voltage	440	volts
Cathode Current	90	mA
Plate Dissipation	19	watts
Grid-No.2 Input	3.3*	watts

TYPICAL OPERATION AND CHARACTERISTICS

Plate Voltage	300	volts
Grid-No.2 Voltage	300	volts
Grid-No.1 (Control-Grid) Voltage	—10	volts
Peak AF Grid-No.1 Voltage	10	volts
Zero-Signal Plate Current	60	mA
Maximum-Signal Plate Current	75	mA
Zero-Signal Grid-No.2 Current	8	mA
Maximum-Signal Grid-No.2 Current	15	mA
Triode Amplification Factor*	16.8	
Plate Resistance (Approx.)	29000	ohms
Transconductance	10200	μmhos
Load Resistance	3000	ohms
Total Harmonic Distortion	13	per cent
Maximum-Signal Power Output	11	watts

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.3	megohm
For cathode-bias operation	1	megohm

* Grid-No.2 input may reach 6 watts during peak levels of speech and music signals.

* Triode connection, grid No.2 connected to plate.

Push-Pull Class AB₁ Amplifier**MAXIMUM RATINGS** (Same as for Class A₁ Amplifier)**TYPICAL OPERATION** (Values are for two tubes)

	Fixed Bias		Cathode Bias	
Plate Supply Voltage	350	450	450	volts
Grid-No.2 Supply Voltage	350	400	400	volts
Grid-No.1 Supply Voltage	—15.5	—21	—	volts
Cathode-Bias Resistor				
(Common to both cathodes)	—	—	200	ohms
Peak AF Grid-No.1-to-Grid-No.1 Voltage	31	42	28	volts
Zero-Signal Plate Current	92	66	82	mA
Maximum-Signal Plate Current	130	144	94	mA
Zero-Signal Grid-No.2 Current	13	9.4	11.5	mA
Maximum-Signal Grid-No.2 Current	28.6	30	22	mA
Effective Load Resistance (Plate-to-plate)	6600	6600	9000	ohms
Total Harmonic Distortion	2	1.5	2	per cent
Maximum-Signal Power Output	30	45	28	watts