

Push-Pull Class AB₁ Amplifier

MAXIMUM RATINGS (Design-Center Values)

		Grid-No.2 Special Connection*	
Plate Voltage	400	375	volts
Grid-No.2 Voltage	300	•	volts
Cathode Current	65	65	mA
Plate Dissipation	12	12	watts
Zero-Signal Grid-No.2 Input	2	2	watts
Maximum-Signal Grid-No.2 Input	4	4	watts

TYPICAL OPERATION (Values are for two tubes)

Plate Supply Voltage	—	375	volts
Plate Voltage	400	—	volts
Grid-No.2 Supply Voltage	—	•	volts
Grid-No.2 Voltage	300	•	volts
Grid-No.1 Voltage	—15	—	volts
Cathode-Bias Resistor	—	220	ohms
Peak AF Grid-No.1 Voltage	14.8	17.7	volts
Zero-Signal Plate Current	15	70	mA
Maximum-Signal Plate Current	105	81	mA
Zero-Signal Grid-No.2 Current	1.6	•	mA
Maximum-Signal Grid-No.2 Current	25	•	mA
Effective Load Resistance (Plate-to-plate)	8000	11000	ohms
Total Harmonic Distortion	4	3	per cent
Maximum-Signal Power Output	24	16.5	watts

MAXIMUM CIRCUIT VALUES

	Fixed Bias	Cathode Bias	
Grid-No.1-Circuit Resistance	0.3	1	megohm

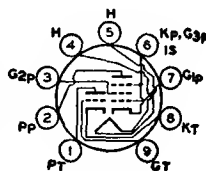
* Grid No.2 of each tube connected to tap on plate winding of output transformer.

* Obtained from taps on primary winding of the output transformer. The taps are located on each side of the center tap (B+) so as to supply 43 per cent of the plate signal voltage to grid No.2 of each output tube.

7199

MEDIUM-MU TRIODE—
SHARP-CUTOFF PENTODE

Miniature type used in high-quality, high-fidelity audio equipment, particularly in phase splitters, tone-control amplifiers, and high-gain voltage amplifiers. Outlines section, 6B; requires miniature 9-contact socket. For operation as resistance-coupled amplifier, refer to Resistance-Coupled Amplifier section. In direct-coupled voltage-amplifier phase-splitter circuits, the pentode unit should drive the triode unit.



9J1

Heater Voltage (ac/dc)	6.3	volts
Heater Current	0.45	ampere
Heater-Cathode Voltage:		
Peak value	±200 max	volts
Average value	100 max	volts
Direct Interelectrode Capacitances:		
Triode Unit:		
Grid to Plate	2	pF
Grid to Cathode and Heater	2.3	pF
Plate to Cathode and Heater	0.3	pF
Pentode Unit:		
Grid No.1 to Plate	0.06 max	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	5	pF
Plate to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	2	pF

EQUIVALENT-NOISE AND HUM VOLTAGE REFERENCED TO GRID

	Triode Unit	Pentode Unit	
Median Value (rms)	10†	35•	μV
Maximum Value (rms)	150†	100•	μV

† Measured in "true rms" units under the following conditions: heater volts (ac), 6.3; center tap of heater transformer connected to ground; plate-supply volts, 250; plate load resistor, 0.1 megohm; cathode resistor, 1500 ohms; grid resistor, 0.05 megohm; and amplifier covering frequency range between 25 and 10000 cycles per second.

• Same conditions as for triode unit except: grid-No.2 supply volts, 250; grid-No.2 resistor, 0.33 megohm; grid-No.2-bypass capacitor, 0.22 μF; cathode resistor, 1200 ohms; and grid-No.1 resistor, 0.05 megohm.

Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

	Triode Unit	Pentode Unit	
Plate Voltage	330	330	volts
Grid-No.2 (Screen-Grid) Voltage	—	See curve page 98	
Grid-No.2 Supply Voltage	—	330	volts
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0	0	volts
Plate Dissipation	2.4	3	watts
Grid-No.2 Input:			
For grid-No.2 voltages up to 165 volts	—	0.6	watt
For grid-No.2 voltages between 165 and 330 volts	—	See curve page 98	

CHARACTERISTICS

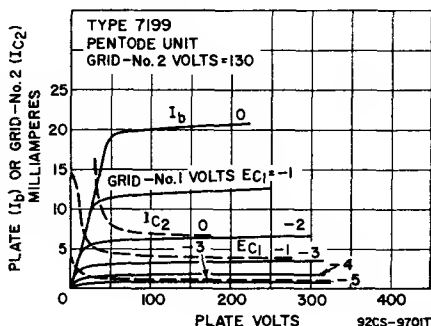
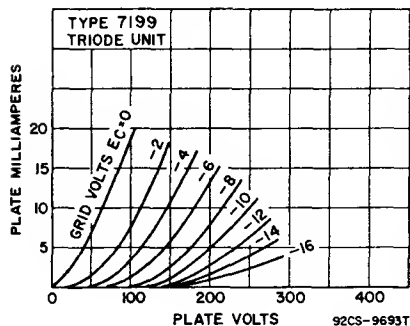
	Triode Unit	Pentode Unit	
Plate Supply Voltage	215	100	220
Grid-No.2 Supply Voltage	—	50	130
Grid-No.1 Voltage	—8.5	—	—
Cathode-Bias Resistor	—	1000	62
Amplification Factor	17	—	—
Plate Resistance (Approx.)	0.0081	1	0.4
Transconductance	2100	1500	7000
Plate Current	9	1.1	12.5
Grid-No.2 Current	—	0.35	3.5
Grid-No.1 Voltage (Approx.) for plate current of 10 μ A	—40	—4	—
			volts

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:*

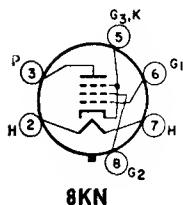
	Triode Unit	Pentode Unit	
For fixed-bias operation	0.5	0.25	megohm
For cathode-bias operation	1	1	megohm

* If either unit is operated at maximum rated conditions, grid-No.1-circuit resistance for both units should not exceed the stated value.



Refer to chart at end of section.

7247



8KN

POWER PENTODE

7355

Glass octal type used in the power-output stage of high-fidelity audio-frequency amplifier systems. Outlines section, 13F; 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	500	volts
Grid-No.2 (Screen-Grid) Voltage	400	volts
Grid-No.2 Supply Voltage	0	volts
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	100	mA
Average Cathode Current	18	watts
Plate Dissipation	3.5*	volts
DC Grid-No.2 Input		