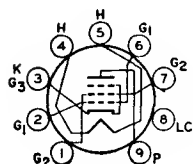


Refer to chart at end of section.

7695

POWER PENTODE

7868



9RW

Novar type used in output stages of high-fidelity audio amplifiers and radio receivers. Outlines section, 11C or 30D; requires novar 9-contact socket. This tube, like other power-handling tubes, should be adequately ventilated.

Heater Voltage (ac/dc)	6.3	volts
Heater Current	0.8	ampere
Heater-Cathode Voltage:		
Peak value	±200 max	volts
Average value	100 max	volts
Direct Interelectrode Capacitances (Approx.):		
Grid No.1 to Plate	0.15	pF
Grid No.1 to Cathode, Heater, Grid No.2, and Grid No.3	11	pF
Plate to Cathode, Heater, Grid No.2, and Grid No.3	4.4	pF

Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	550*	volts
Grid-No.2 (Screen-Grid) Voltage	440	volts
Average Cathode Current	90	mA
Plate Dissipation	19	watts
Grid-No.2 Input	3.3*	watts
Bulb Temperature (At hottest point)	240	°C

TYPICAL OPERATION AND CHARACTERISTICS

Plate Supply 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
Plate Resistance (Approx.)	29000	ohms
Transconductance	10200	μmhos
Effective 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

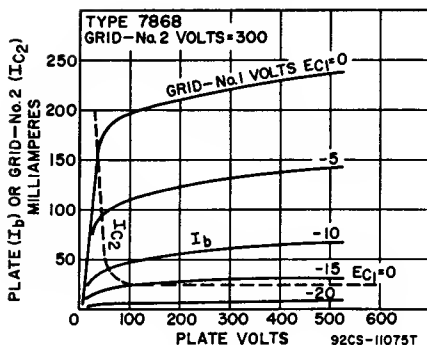
* In push-pull circuits where the grid No.2 of each tube is connected to a tap on the plate winding of the output transformer, this maximum rating is 440 volts.

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

Push-Pull Class AB₁ AmplifierMAXIMUM RATINGS (Same as for class A₁ amplifier)

TYPICAL OPERATION (Values are for two tubes)

	Fixed Bias				Cathode Bias		
Plate Supply Voltage	300	350	400	450	450	450	volts
Grid-No.2 Supply Voltage	300	350	350	350	400	400	volts
Grid-No.1 Voltage	—12.5	—15.5	—16	—16.5	—21	—	volts
Cathode-Bias Resistor (Common to both cathodes)	—	—	—	—	—	170	ohms
Peak AF Grid-No.1-to-Grid-No.1 Voltage	25	31	32	33	42	31	volts
Zero-Signal Plate Current	74	72	64	60	40	86	mA
Maximum-Signal Plate Current	116	130	135	142	145	94	mA
Zero-Signal Grid-No.2 Current	10	9.5	8	7.2	5	10	mA
Maximum-Signal Grid-No.2 Current	28	32	28	26	30	20	mA
Effective Load Resistance (Plate-to-plate)	6600	6600	6600	6600	6600	10000	ohms
Total Harmonic Distortion	5	2.5	2	2.5	5	2	per cent
Maximum-Signal Power Output	24	30	34	38	44	28	watts



Push-Pull Class A_1 Amplifier

Grid No.2 of Each Tube Connected to Tap on Plate Winding of Output Transformer*

MAXIMUM RATINGS (Same as for class A_1 amplifier)

TYPICAL OPERATION (Values are for two tubes)

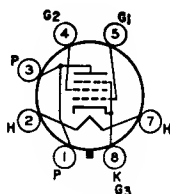
	Fixed Bias	Cathode Bias	
Plate Supply Voltage	400	425	volts
Grid-No.2 Supply Voltage	*	*	volts
Grid-No.1 Voltage	-20.5	—	volts
Cathode-Bias Resistor (Common to both cathodes)	—	185	ohms
Peak AF Grid-No.1-to-Grid-No.1 Voltage	41	42	volts
Zero-Signal Plate Current	60	88	mA
Maximum-Signal Plate Current	115	100	mA
Zero-Signal Grid-No.2 Current	8	12	mA
Maximum-Signal Grid-No.2 Current	18	16	mA
Effective Load Resistance (Plate-to-plate)	6600	6600	ohms
Total Harmonic Distortion	2.5	3.5	per cent
Maximum-Signal Power Output	23	21	watts

* Grid No.2 supply voltage is obtained from taps on the primary winding of the output transformer. The taps are located on each side of the center tap (B+) so as to apply 50 per cent of the plate signal voltage to the grid No.2 of each output tube.

8417

BEAM POWER TUBE

Glass octal type used as output amplifier in high-fidelity, high-power sound systems. Outlines section, 19J; requires octal socket. This tube, like other power-handling tubes, should be adequately ventilated. Heater: volts (ac/dc), 6.3; amperes, 1.6; maximum heater-cathode volts, ± 200 peak, 100 average.



8417

Class A_1 Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	660	volts
Grid-No.2 (Screen-Grid) Voltage	500	volts
Cathode Current	200	mA
Plate Dissipation*	35	watts
Grid-No.2 Input	5*	watts

CHARACTERISTICS

Plate Voltage	300	volts
Grid-No.2 Voltage	300	volts
Grid-No.1 (Control-Grid) Voltage	-12	volts
Grid-No.1 Voltage for plate current of 1 mA	-37	volts
Plate Resistance	16000	ohms
Transconductance	23000	μ mhos
Plate Current	100	mA
Grid-No.2 Current	5.5	mA
Triode Amplification Factor	16.5	

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	1	megohm
For cathode-bias operation	0.25	megohm