

Plate to Cathode, Heater, Grid No.2, Grid No.3, Grid No.3 of Unit No.1, and Internal Shield	2.8	pF
Plate of Unit No.1 to Plate of Unit No.2	0.015	pF
Grid No.1 of Unit No.1 to Plate of Unit No.2	0.002	pF
Grid No.1 of Unit No.2 to Plate of Unit No.1	0.008	pF
Grid No.1 of Unit No.1 to Grid No.1 of Unit No.2	0.002	pF

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

	Unit No.1	Unit No.2	
Plate Voltage			
Grid-No.3 (Suppressor-Grid) Voltage	330	330	volts
Grid-No.2 (Screen-Grid) Supply Voltage	0	0	volts
Grid-No.2 Voltage	330	330	volts
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	See curve page 300		
Plate Dissipation	0	0	volts
Grid-No.2 Input:	3.1	3.1	watts
For grid-No.2 voltages up to 165 volts	0.65	0.65	watt
For grid-No.2 voltages between 165 and 330 volts	See curve page 300		

CHARACTERISTICS

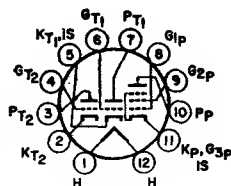
Plate Supply Voltage	125	125	volts
Grid No.3	Connected to cathode at socket		
Grid-No.2 Voltage	125	125	volts
Cathode-Bias Resistor	56	56	ohms
Plate Resistance (Approx.)	0.2	0.2	megohm
Transconductance	10500	13000	μmhos
Plate Current	11	11	mA
Grid-No.2 Current	3.5	3.8	mA
Grid-No.1 Voltage (Approx.) for plate current of 20 μA	—	—3	volts
Grid-No.1 Voltage (Approx.) for transconductance of 50 μmho	—15	—	volts

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance, for cathode-bias operation	1	0.25	megohm
---	---	------	--------

8BU11**MEDIUM-MU TWIN TRIODE—
SHARP-CUTOFF PENTODE**

Duodecar type used in television receiver applications. Outlines section, 8C; requires duodecar 12-contact socket. Heater: volts (ac/dc), 7.8; amperes, 0.6; warm-up time, 11 seconds, maximum heater-cathode volts, ±200 peak, 100 average.

**12FP****Class A₁ Amplifier****MAXIMUM RATINGS (Design-Maximum Values)**

	Pentode Unit	Each Triode Unit	
Plate Voltage	330	330	volts
Grid-No.2 (Screen-Grid) Supply Voltage	330	—	volts
Grid-No.2 Voltage	See curve page 300	—	
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0	0	volts
Plate Dissipation	2.5	1.8	watts
Grid-No.2 Input:			
For grid-No.2 voltages up to 165 volts	0.55	—	watt
For grid-No.2 voltages between 165 and 330 volts	See curve page 300	—	

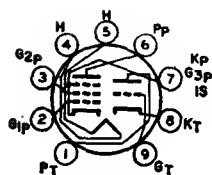
CHARACTERISTICS

Plate Supply Voltage	125	125	volts
Grid-No.2 Voltage	125	—	volts
Grid-No.1 Voltage	—1	—	volts
Cathode-Bias Resistor	—	68	ohms
Amplification Factor	—	43	
Plate Resistance (Approx.)	20000	5000	ohms
Transconductance	7500	8600	μmhos
Plate Current	12	13.5	mA
Grid-No.2 Current	4	—	mA
Grid Voltage (Approx.) for plate current of 100 μA	—	—8	volts
Grid-No.1 Voltage (Approx.) for plate current of 30 μA	—8	—	volts

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:			
For fixed-bias operation	0.5	0.5	megohm
For cathode-bias operation	1	1	megohm

Refer to chart at end of section.	8CB11
For replacement use type 8FQ7/8CG7.	8CG7
Refer to type 6CM7.	8CM7
Refer to chart at end of section.	8CN7
Refer to type 6CS7.	8CS7
Refer to type 6CW5/EL86.	8CW5/XL86
Refer to type 6CW5.	8CW5
Refer to type 6CX8.	8CX8
Refer to chart at end of section.	8EB8
For replacement use type 8GN8/8EB8.	8EM5
Refer to type 6EM5.	8ET7
Refer to chart at end of section.	8FQ7
Refer to type 6FQ7/6CG7.	8FQ7/8CG7
Refer to chart at end of section.	8GJ7
Refer to type 6GJ7/ECF801.	8GJ7/PCF801
Refer to type 6GN8.	8GN8
Refer to type 6GU7.	8GN8/8EB8
Refer to type 6JU8A.	8GU7
Refer to type 6JV8.	8JU8A
Refer to type 6KA8.	8JV8
Refer to type 6LC8.	8KA8
Refer to type 6LT8.	8LC8
Refer to chart at end of section.	8LT8
	9A8

**9DC**

Outlines section, 6B; requires miniature 9-contact socket. **Heater:** volts (ac/dc), 9; amperes, 0.3; maximum heater-cathode volts, +100, -200 peak; -120 average.

MEDIUM-MU TRIODE— SHARP-CUTOFF PENTODE

Miniature type used as combined oscillator and mixer tubes in vhf color and black-and-white television re-

9A8/ PCF80

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

	Triode Unit	Pentode Unit	
Plate Supply Voltage	550	550	volts
Plate Voltage	250	250	volts
Grid-No.2 (Screen-Grid) Voltage	—	175	volts
Cathode Current	14	14	mA
Plate Dissipation	1.5	1.7	watts
Grid-No.2 Input	—	0.5	watt