

Refer to chart at end of section.

6BF5

Refer to chart at end of section.

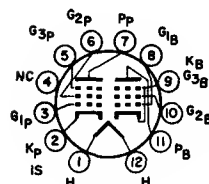
6BF6

BEAM POWER TUBE— SHARP-CUTOFF PENTODE

6BF11

12BF11, 17BF11

Duodecar type used as combined detector and amplifier tube in color and black-and-white television receivers. The dual-control, sharp-cutoff pentode unit is used as an FM detector and the beam power unit as an af output amplifier. Outlines section, 8C; requires duodecar 12-contact socket. Types 12BF11 and 17BF11 are identical with type 6BF11 except for heater ratings.



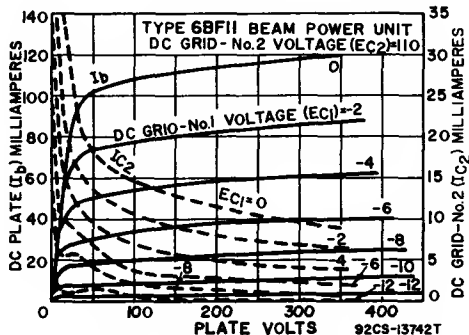
12EZ

	6BF11	12BF11	17BF11	
Heater Voltage (ac/dc)	6.3	12.6	16.8	volts
Heater Current	1.2	0.6	0.45	amperes
Heater Warm-up Time (Average)	—	11	11	seconds
Heater-Cathode Voltage:				
Peak value	±200 max	±200 max	±200 max	volts
Average value	100 max	100 max	100 max	volts
Direct Interelectrode Capacitances:				
Pentode Unit:				
Grid No.1 to Plate		0.36		pF
Grid No.3 to Plate		3.2		pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield		6.5		pF
Grid No.3 to Cathode, Heater, Grid No.1, Grid No.2, Plate, and Internal Shield		8		pF
Grid No.1 to Grid No.3		0.11		pF
Beam Power Unit:				
Grid No.1 to Plate		0.24		pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield		13		pF
Plate to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield		10		pF
Pentode Plate to Beam Power Plate		0.13		pF

Beam Power Unit as Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	165	volts
Grid-No.2 (Screen-Grid) Voltage	150	volts
Average Cathode Current	65	mA
Plate Dissipation	6.5	watts
Grid-No.2 Input	1.8	watts



TYPICAL OPERATION

Plate Voltage	145	volts
Grid-No.2 Voltage	110	volts
Grid-No.1 (Control-Grid) Voltage	-6	volts
Peak AF Grid-No.1 Voltage	6	volts
Zero-Signal Plate Current	36	mA
Maximum-Signal Plate Current	40	mA
Zero-Signal Grid No.2 Current	3	mA
Maximum-Signal Grid-No.2 Current	9	mA
Plate Resistance (Approx.)	0.03	megohm
Transconductance	8600	μ mhos
Load Resistance	30000	ohms
Total Harmonic Distortion	10	per cent
Maximum-Signal Power Output	2.4	watts

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.25	megohm
For cathode-bias operation	0.5	megohm

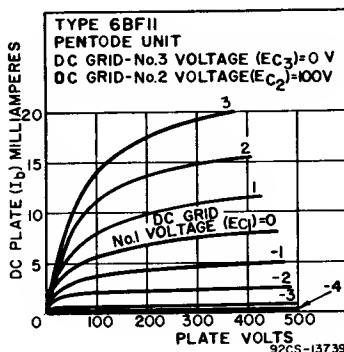
**Pentode Unit as Class A₁ Amplifier****CHARACTERISTICS**

Plate Supply Voltage	150	volts
Grid No.3 (Control-Grid)	Connected to negative end of cathode resistor	
Grid-No.2 (Screen-Grid) Supply Voltage	100	volts
Grid No.1 (Control Grid)	Connected to negative end of cathode resistor	
Cathode-Bias Resistor	560	ohms
Plate Resistance (Approx.)	0.15	megohm
Transconductance, Grid No.1 to Plate	1000	μ mhos
Transconductance, Grid No.3 to Plate	400	μ mhos
Plate Current	1.3	mA
Grid-No.2 Current	2	mA
Grid-No.1 Voltage (Approx.) for plate current of 10 μ A	-4.5	volts
Grid-No.3 Voltage (Approx.) for plate current of 10 μ A	-4.5	volts

Pentode Unit as FM Sound Detector**MAXIMUM RATINGS (Design-Maximum Values)**

Plate Voltage	330	volts
Grid-No.3 Voltage	28	volts
Grid No.2 Supply Voltage	330	volts
Grid-No.2 Voltage	See curve page 98	
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0	volts
Plate Dissipation	1.7	watts
Grid-No.2 Input:		
For grid-No.2 voltages up to 165 volts	1.1	watts
For grid-No.2 voltages between 165 and 330 volts	See curve page 98	

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.25	megohm
For cathode-bias operation	0.5	megohm

6BG6G**6BG6GA**

Refer to chart at end of section.