

	Unit No.1	Unit No.2	
Transconductance	2500	7700	μ mhos
Plate Current	8	68 ^a	mA
Grid Voltage (Approx.) for plate current of 10 μ A	-18	—	volts
Grid Voltage (Approx.) for plate current of 50 μ A	—	-23	volts

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

Vertical-Deflection Oscillator and Amplifier

For operation in a 525-line, 30-frame system

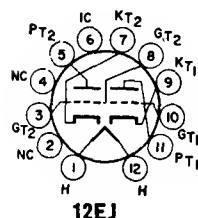
MAXIMUM RATINGS (Design-Maximum Values)

	Unit No.1 Oscillator	Unit No.2 Amplifier	
DC Plate Voltage	350	550	volts
Peak Positive-Pulse Plate Voltage [#]	—	2500	volts
Peak Negative-Pulse Grid Voltage	400	250	volts
Peak Cathode Current	—	150	mA
Average Cathode Current	—	50	mA
Plate Dissipation	1	10	watts

MAXIMUM CIRCUIT VALUES

Grid-Circuit Resistance:			
For fixed-bias operation	2.2	2.2	megohms
For cathode-bias operation	2.2	—	megohms

Pulse duration must not exceed 15% of a vertical scanning cycle (2.5 milliseconds).



12EJ

DUAL TRIODE

6FM7

13FM7, 15FM7

Duodecar type used as combined vertical-deflection oscillator and vertical-deflection amplifier in color and black-and-white television receivers. Triode unit No.1 is used as an oscillator, and triode unit No.2 is used as an amplifier. Outlines section, 8C; requires duodecar 12-contact socket. Types 13FM7 and 15FM7 are identical with type 6FM7 except for heater ratings.

	6FM7	13FM7	15FM7	
Heater Voltage (ac/dc)	6.3	13	14.8	volts
Heater Current	1.05	0.45	0.45	amperes
Heater Warm-up Time (Average)	—	11	11	seconds
Heater-Cathode Voltage:				
Average value	± 200 max	± 200 max	± 200 max	volts
Peak value	100 max	100 max	100 max	volts

Class A₁ Amplifier

CHARACTERISTICS

	Unit No.1	Unit No.2	
Plate Voltage	250	175	volts
Grid Voltage	-3	-25	volts
Amplification Factor	66	5.5	
Plate Resistance (Approx.)	30000	920	ohms
Transconductance	2200	6000	μ mhos
Plate Current	2	40	mA
Grid Voltage (Approx.) for plate current of 20 μ A	-5.3	—	volts
Grid Voltage (Approx.) for plate current of 200 μ A	—	-45	volts

Vertical-Deflection Oscillator and Amplifier

For operation in a 525-line, 30-frame system

MAXIMUM RATINGS (Design-Maximum Values)

	350	500	volts
DC Plate Voltage	350	500	volts
Peak Positive-Pulse Plate Voltage [#]	—	1500	volts
Peak Negative-Pulse Plate Voltage	400	250	volts
Peak Cathode Current	—	175	mA
Average Cathode Current	—	50	mA
Plate Dissipation [†]	1	10	watts

MAXIMUM CIRCUIT VALUES

Grid-Circuit Resistance:			
For fixed-bias operation	1	1	megohm
For cathode-bias operation	2.2	2.2	megohms

Pulse duration must not exceed 15% of a vertical scanning cycle (2.5 milliseconds).

† A bias resistor or other means is required to protect the tube in absence of excitation.

6FM8**TWIN DIODE—
HIGH-MU TRIODE**

Miniature type used in television receiver applications and as combined FM detector and af voltage amplifier in FM receivers. Outlines section, 6B; requires miniature 9-contact socket. Heater: volts (ac/dc), 6.3; amperes, 0.45; maximum heater-cathode volts, ± 200 peak, 100 average.

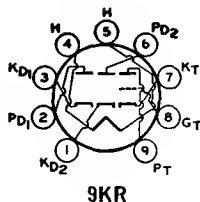
**9KR****Triode Unit as Class A₁ Amplifier****MAXIMUM RATINGS (Design-Maximum Values)**

Plate Voltage	330	volts
Grid Voltage, Positive-bias value	0	volts
Plate Dissipation	1.1	watts
CHARACTERISTICS		
Plate Voltage	250	volts
Grid Voltage	-3	volts
Amplification Factor	70	
Plate Resistance (Approx.)	58000	ohms
Transconductance	1200	μ mhos
Plate Current	1	mA

Diode Units (Each Unit)**MAXIMUM RATINGS (Design-Maximum Values)**

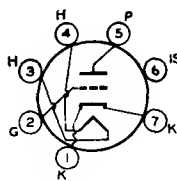
Plate Current	5	mA
CHARACTERISTICS, Instantaneous Value		
Tube Voltage Drop for plate current of 20 mA	5	volts

6FQ5A

2FQ5A

HIGH-MU TRIODE

Miniature type with frame grid used as rf-amplifier tube in vhf tuners of television receivers. Outlines section, 5C; requires miniature 7-contact socket. Type 2FQ5A is identical with type 6FQ5A except for heater ratings.

**7FP**

	2FQ5A	6FQ5A	
Heater Voltage (ac/dc)	2.3	6.3	volts
Heater Current	0.6	0.18	ampere
Heater Warm-up Time (Average)	11	—	seconds
Peak Heater-Cathode Voltage	± 100 max	± 100 max	volts
Direct Interelectrode Capacitances:*			
Grid to Plate		0.52	pF
Grid to Cathode, Heater, and Internal Shield		5	pF
Plate to Cathode, Heater, and Internal Shield		3.5	pF
Heater to Cathode		2.5	pF

* With external shield connected to cathode except as noted.

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

Plate Voltage	200	volts
Grid Voltage, Negative-bias value	50	volts
Average Cathode Current	22	mA
Plate Dissipation	2.5	watts
CHARACTERISTICS		
Plate Voltage	135	volts
Grid Voltage	-1.2	volts
Amplification Factor	74	
Plate Resistance (Approx.)	6300	ohms
Transconductance	12000	μ mhos
Plate Current	8.9	mA
Grid Voltage (Approx.) for plate current of 100 μ A	-4.5	volts

MAXIMUM CIRCUIT VALUE

Grid-Circuit Resistance, for cathode-bias operation	1	megohm
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