Vertical-Deflection Oscillator and Amplifier

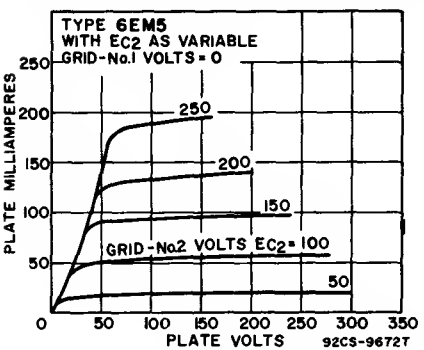
For operation in a 525-line, 30-frame system

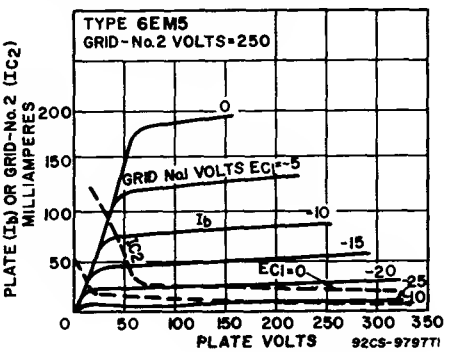
MAXIMUM RATINGS (Design-Center Values)

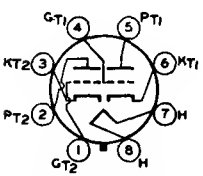
DC Plate Voltage	315	volts
Peak Positive-Pulse Plate Voltage# (Absolute Maximum)	2200▲	volts
Grid-No.2 (Screen-Grid) Voltage	285	volts
Peak Negative-Pulse Grid-No.1 (Control-Grid) Voltage	250	volts
Peak Cathode Current	210	mA
Average Cathode Current	60	mA
Plate Dissipation	10	watts
Grid-No.2 Input	1.5	watts
Bulb Temperature (At hottest point)	250	°C
MAXIMUM CIRCUIT VALUE		
Grid-No.1-Circuit Resistance	2.2	megohms

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

▲ Under no circumstances should this absolute value be exceeded.







8BD

6EM7

DUAL TRIODE

10EM7, 13EM7/15EAY

Glass octal type used as combined vertical-deflection amplifier and vertical-deflection oscillator in color and black-and-white television receivers. **Outlines section, 13A;** requires octal socket. For curve of average plate characteristics, Unit No.1, refer to type 6DR7 (Unit No.1). Types 10EM7 and 13EM7/15EAY are identical with type 6EM7 except for heater ratings.

	6EM7	10EM7	13EM7/15EAY	
Heater Voltage (ac/dc)	6.3	9.7	13	volts
Heater Current	0.925	0.6	0.45	ampere
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 (Approx.):	Unit No.1	Unit No.2	
Grid to Plate	4.8	10	pF
Grid to Cathode and Heater	2.2	7	pF
Plate to Cathode and Heater	0.6	1.8	pF

Class A_1 Amplifier

CHARACTERISTICS	Unit No.1	Unit No.2	
Plate Voltage	250	150	volts
Grid Voltage	—3	—20	volts
Amplification Factor	64	5.4	
Plate Resistance (Approx.)	40000	750	ohms
Transconductance	1600	7200	μmhos
Plate Current	1.4	50	mA
Plate Current, for plate voltage of 60 volts and zero grid voltage	—	95	mA

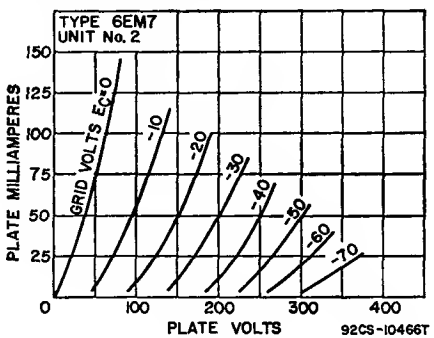
	Unit No.1	Unit No.2	
Plate Current, for grid voltage of —28 volts	—	10	mA
Grid Voltage (Approx.):			
For plate current of 10 μA	—5.5	—	volts
For plate current of 100 μA	—	—45	volts

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	330	330	volts
Peak Positive-Pulse Plate Voltage#	—	1500	volts
Peak Negative-Pulse Grid Voltage	400	250	volts
Peak Cathode Current	77	175	mA
Average Cathode Current	22	50	mA
Plate Dissipation	1.5	10	watts
MAXIMUM CIRCUIT VALUES			
Grid-Circuit Resistance:	Unit No.1	Unit No.2	
For grid-resistor-bias operation	2.2	2.2	megohms
For cathode-bias operation	2.2	2.2	megohms

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

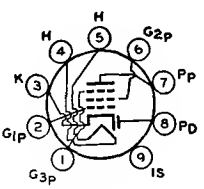


6EQ7

12EQ7

DIODE—REMOTE-CUTOFF PENTODE

Miniature type used as combined if amplifier and AM detector in AM and AM/FM radio receivers. Outlines section, 6E; requires miniature 9-contact socket. Type 12EQ7 is identical with type 6EQ7 except for heater ratings.



9LQ

	6EQ7	12EQ7	
Heater Voltage (ac/dc)	6.3	12.6	volts
Heater Current	0.3	0.15	ampere
Heater-Cathode Voltage:			
Peak value	±200 max	±200 max	volts
Average value	100 max	100 max	volts
Direct Interelectrode Capacitances:			
Pentode Unit:			
Grid No.1 to Plate		0.002 max	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield		5.5	pF
Plate to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield		5	pF
Pentode Grid No.1 to Diode Plate		0.0015 max	pF
Pentode Plate to Diode Plate		0.095	pF

Pentode Unit as Class A_1 Amplifier

MAXIMUM RATINGS (Design-Maximum Values)		
Plate Voltage	300	volts
Grid-No.3 (Suppressor-Grid) Voltage:		
Positive value	300	volts
Negative value	300	volts