

DIRECT INTERELECTRODE CAPACITANCES

	With Shield	Without Shield
Triode Section		
Grid to Plate	2.2	2.2 pf
Input: g1 to (Tk + Pk + Pg3 + IS + h)	3.2	3.0 pf
Output: p to (Tk + Pk + Pg3 + IS + h)	3.4	2.2 pf
Pentode Section		
Grid No. 1 to Plate (Max.)	0.05	0.05 pf
Input: g1 to (k + g3 + IS + g2 + h).....	9.0	9.0 pf
Output: p to (k + g3 + IS + g2 + h).....	4.4	3.6 pf
Heater to Cathode (Triode Section)	4.8	4.4 pf
Heater to Cathode (Pentode Section)	7.5	5.5 pf
Pentode Grid No. 1 to Triode Plate (Pg1 to Tp) (Max.)	0.20	0.170 pf
Pentode Plate to Triode Plate (Pp to Tp) (Max.)	0.008	0.090 pf

RATINGS (Design Maximum Rating System)
Class A1 Amplifier

	Triode Section	Pentode Section
Plate Voltage (Max.)	330	330 Volts
Grid No. 2 (Screen-Grid) Supply Voltage (Max.)	—	330 Volts
Grid No. 2 Voltage	See Rating Chart (Gen. Info. Sec.)	
Grid No. 1 (Control-Grid) Voltage: Positive Bias (Max.)	0	0 Volt
Grid No. 2 Dissipation (Max.)	—	1.1 Watts
Plate Dissipation (Max.)	2.5	3.75 Watts
Maximum Grid No. 1 Circuit Resistance		
Fixed-Bias	0.5	0.25 Megohm
Cathode-Bias	1.0	1.0 Megohm
Control grid to cathode spacing of the pentode section of this type is of such low order of magnitude as to preclude the use of voltage between these elements of more than 30 volts dc or peak ac in commercial tube checkers and shorts indicating devices, particularly where mechanical excitation of the tube is employed.		

CHARACTERISTICS AND TYPICAL OPERATION
Class A1 Amplifier

	Triode Section	Pentode Section
Plate Voltage	125	150 Volts
Grid No. 2 Voltage	—	150 Volts
Grid No. 1 Voltage	—1	— Volts
Cathode Bias Resistor	—	150 Ohms
Plate Current	11.5	19 Ma
Grid No. 2 Current	—	4.2 Ma
Transconductance	6000	9000 μ mhos
Amplification Factor	35	—
Plate Resistance (Approx.)	5800	165,000 Ohms
Ecl for Ib = 10 μ a (Approx.)	—5.8	— Volts
Ecl for Ib = 20 μ a (Approx.)	—	—9.5 Volts

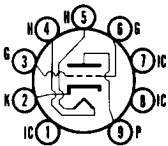
6S4A

Color Television Type

VERTICAL DEFLECTION
AMPLIFIER

Medium Mu Triode

Construction	Miniature T-6½
Base	Button 9 Pin, E9-1
Basing	9AC
Outline	6-3
Maximum Diameter	0.875 In.
Maximum Seated Height	2.375 In.
Maximum Overall Height	2.625 In.



9 AC



ELECTRICAL DATA
HEATER OPERATION

Heater Voltage	6.3 Volts
Heater Current	600 Ma
Heater Warm-up Time	11 Seconds

Maximum Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
Total DC and Peak.....	200 Volts
Heater Positive with Respect to Cathode	
DC	100 Volts
Total DC and Peak.....	200 Volts

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)	
Grid to Plate	2.6 Pf
Input: g1 to (h + k)	4.2 Pf
Output: p to (h + k)	0.9 Pf

RATINGS (Design Center Rating System)	
Vertical Deflection Amplifier⁽¹⁾	
Plate Voltage (Max.)	500 Volts
Peak Positive Plate Voltage (Abs. Max.)	2200 Volts
Plate Dissipation (Max.) ⁽²⁾	7.5 Watts
Peak Negative Grid Voltage (Max.)	250 Volts
Average Cathode Current (Max.).....	30 Ma
Peak Cathode Current (Max.)	105 Ma
Grid Circuit Resistance	
Cathode Bias (Max.)	2.2 Megohms

CHARACTERISTICS AND TYPICAL OPERATION	
Plate Voltage	250 Volts
Grid Voltage	-8 Volts
Plate Current	26 Ma
Transconductance	4500 μ mhos
Amplification Factor	16
Plate Resistance.....	3600 Ohms
Plate Current at Ec = -15 V	4.5 Ma
Grid Voltage for Ib = 50 μ a	-23 Volts

Vertical Deflection Amplifier	
70° Picture Tube—15 Kv 2nd Anode Voltage	
Plate Supply Voltage.....	435 Volts
Plate Output Voltage	
Peak to Peak	900 Volts
Sawtooth Component	320 Volts
Grid Input Voltage	
Peak to Peak	60 Volts
Sawtooth Component	40 Volts
Average Cathode Current	16 Ma
Peak Cathode Current	40 Ma
Cathode Resistor	1200 Ohms

NOTES:

- (1) For operation in a 525 line, 30 frame system as described in "Standards of Good Engineering Practice for Television Broadcast Stations; Federal Communications Commission," the duty cycle of the voltage pulse must not exceed 15% of one horizontal scanning cycle.
- (2) In stages operating with grid leak bias, an adequate cathode bias resistor or other suitable means is required to protect the tube in the absence of excitation.

AM CONVERTER

6SA7GT

12SA7GT

Heptode

Construction	Octal T-9
Base.....	Octal 8 Pin, B8-6 or B8-58
Basing	8AD
Outline	9-11 or 9-41
Maximum Diameter	1.188 In.
Maximum Seated Height	2.750 In.
Maximum Overall Height	3.312 In.

ELECTRICAL DATA
HEATER OPERATION

	12SA7GT	6SA7GT
Heater Voltage.....	12.6	6.3 Volts
Heater Current	150	300 Ma
Maximum Heater-Cathode Voltage	90	90 Volts

