Color Television Type

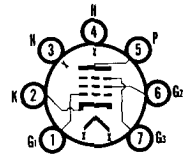
IF AMPLIFIER

6DE6

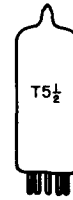
4DE6

Sharp Cutoff Pentode

Construction .....Miniature T-5½
Base .....Button 7 Pin, E7-1
Basing 7CM
Outline 5-2
Maximum Diameter .....0.750 In.
Maximum Seated Height .....1.875 In.
Maximum Overall Height .....2.125 In.



7CM



ELECTRICAL DATA

HEATER OPERATION

	4DE6	6DE6
Heater Voltage	4.2	6.3 Volts
Heater Current	450	300 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

	Shielded	Unshielded
Grid No. 1 to Plate	0.015	0.025 Pf
Input: g1 to (h + k + g2 + g3 + IS)	6.5	6.5 Pf
Output: p to (h + k + g2 + g3 + IS)	3.0	2.0 Pf

RATINGS (Design Maximum Rating System)

Class A1 Amplifier

Plate Voltage (Max.)	330 Volts
Grid No. 2 Supply Voltage (Max.)	330 Volts
Grid No. 2 Voltage	See Rating Chart (Gen. Info. Sec.)
Plate Dissipation (Max.)	2.3 Watts
Grid No. 2 Input (Max.)	0.55 Watt
Positive Grid No. 1 Voltage (Max.)	0 Volt

CHARACTERISTICS AND TYPICAL OPERATION

Class A1 Amplifier

Plate Voltage	125 Volts
Grid No. 3 Voltage	Connected to Cathode at Socket
Grid No. 2 Voltage	125 Volts
Cathode Bias Resistor	56 Ohms
Plate Current	15.5 Ma
Grid No. 2 Current	4.2 Ma
Transconductance	8000 μmhos
Plate Resistance (Approx.)	0.25 Megohm
Transconductance with Ec1 = −5.5, Rk = 0	700 μmhos
Ec1 for Ib = 20 μa	−9 Volts

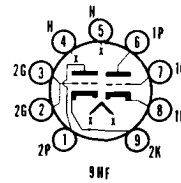
VERTICAL DEFLECTION OSCILLATOR and AMPLIFIER

6DE7

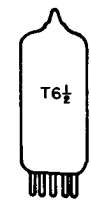
10DE7, 13DE7, 19DE7

Dissimilar Double Triode

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



9HF



ELECTRICAL DATA

HEATER OPERATION

	19DE7	13DE7	10DE7	6DE7
Heater Voltage	19.4	13.0	9.7	6.3 Volts
Heater Current	300	450	600	900 Ma
Heater Warm-up Time	11	11	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)

	Section No. 1	Section No. 2
Grid to Plate	4.0	8.5 Pf
Input: g to (h + k)	2.2	5.5 Pf
Output: p to (h + k)	0.52	1.0 Pf

RATINGS (Design Maximum Rating System)

***Vertical Deflection Oscillator and Amplifier*(1)**

	Section No. 1 Oscillator	Section No. 2 Amplifier
DC Plate Voltage (Max.)	330	275 Volts
Peak Positive Pulse Plate Voltage (Abs. Max.)	—	1500 Volts
Peak Negative Pulse Grid Voltage (Max.)	400	250 Volts
Plate Dissipation (Max.)(2)	1.5	7.0 Watts
Average Cathode Current (Max.)	22	50 Ma
Peak Cathode Current (Max.)	77	175 Ma
Grid Circuit Resistance (Self Bias) (Max.)	2.2	2.2 Megohms

CHARACTERISTICS AND TYPICAL OPERATION

	Section No. 1	Section No. 2
Plate Voltage	250	150 Volts
Grid No. 1 Voltage	-11	-17.5 Volts
Plate Current	5.5	35 Ma
Transconductance	2000	6500 μmhos
Amplification Factor	17.5	6.0
Plate Resistance (Approx.)	8750	925 Ohms
Grid Voltage for Ib = 10 μa	-20	— Volts
Grid Voltage for Ib = 50 μa	—	-44 Volts
Plate Current at Ec = -24 Vdc	—	10 Ma
Zero Bias Plate Current		
Eb = 60 V; Ec = 0 (Instantaneous Values)	—	80 Ma

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

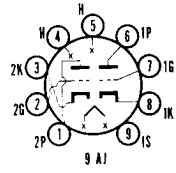
6DJ8

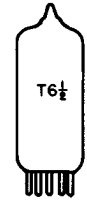
7DJ8, 12DJ8

VHF CASCODE AMPLIFIER

Double Triode

Construction .....Miniature T-6½
Base .....Button 9 Pin, E9-1
Basing 9AJ
Outline 6-2
Maximum Diameter .....0.875 In.
Maximum Seated Height .....1.937 In.
Maximum Overall Height .....2.187 In.





ELECTRICAL DATA

HEATER OPERATION

	12DJ8	7DJ8	6DJ8
Heater Voltage	12.6	7.0	6.3 Volts
Heater Current	180	300	365 Ma
Maximum Heater-Cathode Voltage			
RMS, Voltage Between Cathode and Heater (Grounded Cathode Section)	50	80	50 Volts