



ADVANCE DATA

The 9T9 design utilizes a T-9 (1 1/8" Dia.) bulb based to fit a standard 9-pin miniature socket. Advantages of the 9T9 include an increase in the heat dissipation safety margin, as compared to 9-pin miniature tubes employing T-6 1/2 (13/16" Dia.) bulbs.

MECHANICAL DATA

Bulb	Special, T-9
Base	9-Pin, E9-68
Outline	9-70
Basing	9HF
Cathode	Coated Unipotential
Mounting Position	Any

ELECTRICAL DATA

HEATER CHARACTERISTICS AND RATINGS

Average Characteristics

Heater Operation	Series	Series	Parallel
Heater Voltage	9.7	13.0	6.3 ¹ Volts
Heater Current	600 ¹	450 ¹	925 Ma
Heater Warm-up Time ²	11	11	- Seconds

Ratings (Design Maximum Values)

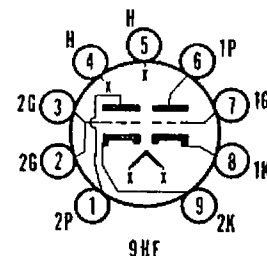
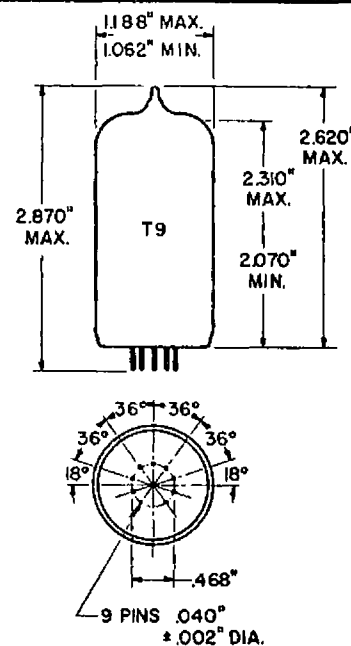
	Min-Max	Min-Max	Min-Max
Heater Voltage ³	- -	- -	5.7-6.9 Volts
Heater Current ³	560-640	420-480	- - Ma
Maximum Heater-Cathode Voltage			
Heater Negative with Respect to Cathode			
Total DC and Peak	200	200	200 Volts
Heater Positive with Respect to Cathode			
DC	100	100	100 Volts
Total DC and Peak	200	200	200 Volts

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

	Section No. 1	Section No. 2
Grid to Plate	4.6	8.0 μ f
Input: g to (h+k)	2.4	7.5 μ f
Output: p to (h+k)	0.30	1.2 μ f

QUICK REFERENCE DATA

The Sylvania Types 6FR7, 10FR7 and 13FR7 are dissimilar-section double triodes featuring the 9T9 bulb and pin configuration. They are designed to serve the combined functions of vertical deflection oscillator and amplifier.



SYLVANIA ELECTRONIC TUBES

A Division of
Sylvania Electric Products Inc.

RECEIVING TUBE
OPERATIONS
EMPORIUM, PA.

Prepared and Released By The
TECHNICAL PUBLICATIONS SECTION
EMPORIUM, PENNSYLVANIA

February 15, 1961

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RATINGS (Design Maximum Values)

Vertical Deflection Oscillator and Amplifier⁴

	Section ⁵ No. 1 Oscillator	Section ⁵ No. 2 Amplifier		
Plate Voltage	330	330	Volts	Max.
Peak Positive Pulse Plate Voltage	-	1500	Volts	Max.
Peak Negative Pulse Grid Voltage	400	250	Volts	Max.
Plate Dissipation ⁶	1.5	10	Watts	Max.
Average Cathode Current	22	50	Ma	Max.
Peak Cathode Current	77	175	Ma	Max.
Grid Circuit Resistance Self Bias	2.2	2.2	Megohms	

AVERAGE CHARACTERISTICS

	Section No. 1	Section No. 2	
Plate Voltage	250	150	Volts
Grid No. 1 Voltage	-3	-20	Volts
Plate Current	1.4	50	Ma
Transconductance	1600	7200	μmhos
Amplification Factor	68	5.4	
Plate Resistance (Approx.)	40,000	750	Ohms
Ec for Ib = 10 μa (Approx.)	-5.5	-	Volts
Ec for Ib = 100 μa (Approx.)	-	-45	Volts
Ib at Ec = -28 Vdc (Approx.)	-	10	Ma
Ib with Eb = 60 V and Ec = 0 V (Instantaneous Values)	-	95	Ma

NOTES:

1. For series/parallel operation of heaters, equipment should be designed that at normal supply voltage bogey tubes will operate at this value of heater current/voltage.
2. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.
3. Heater voltage supply variations shall be restricted to maintain heater voltage/current within the specified values.

6FR7
10FR7
13FR7

NOTES: (Cont'd)

4. For operation in a 525 line, 30 frame system as described in "Standards of Good Engineering Practice for Television Stations; Federal Communications Commission". The duty cycle of the voltage pulse must not exceed 15% of one scanning cycle.
5. Section No. 1 connects to Pins 6, 7 and 8. Section No. 2 connects to Pins 1, 2, 3 and 9.
6. 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.