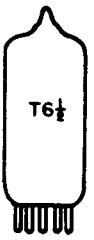
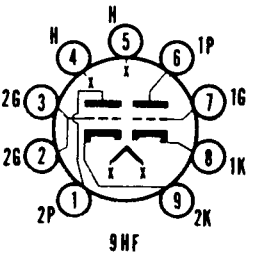


SYLVANIA TYPE 6DE7 10DE7 13DE7



MECHANICAL DATA

Bulb	T-6½
Base	E9-1, Miniature Button 9-Pin
Outline	6-3
Basing	9HF
Cathode	Coated Unipotential
Mounting Position	Any

ELECTRICAL DATA

HEATER CHARACTERISTICS

	6DE7	10DE7	13DE7
Heater Voltage	6.3	9.7	13.0 Volts
Heater Current	900	600	450 Ma
Heater Warm-up Time[1]	—	11	11 Seconds
Heater-Cathode Voltage (Design Maximum Values)[2]			
Heater Negative with Respect to Cathode			
Total DC and Peak			200 Volts Max.
Heater Positive with Respect to Cathode			
DC			100 Volts Max.
Total DC and Peak			200 Volts Max.

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

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

RATINGS[2] (Design Maximum Values—Except as Noted)

Vertical Deflection Oscillator and Amplifier[3]

	Triode No. 1 Oscillator	Triode No. 2 Amplifier
DC Plate Voltage	330	275 Volts Max.
Peak Positive Pulse Plate Voltage (Abs. Max.)	—	1500 Volts
Peak Negative Pulse Grid Voltage	400	250 Volts Max.
Plate Dissipation[4]	1.5	7.0 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

	Triode No. 1	Triode 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	— Ohms
Grid Voltage for Ib = 50 μa	—	−44 Volts
Plate Current at Ec = −24 Vdc	—	10 Ma
Plate Knee Characteristics		
Eb = 60 V; Ec = 0 (Instantaneous Values)	—	80 Ma

NOTES:

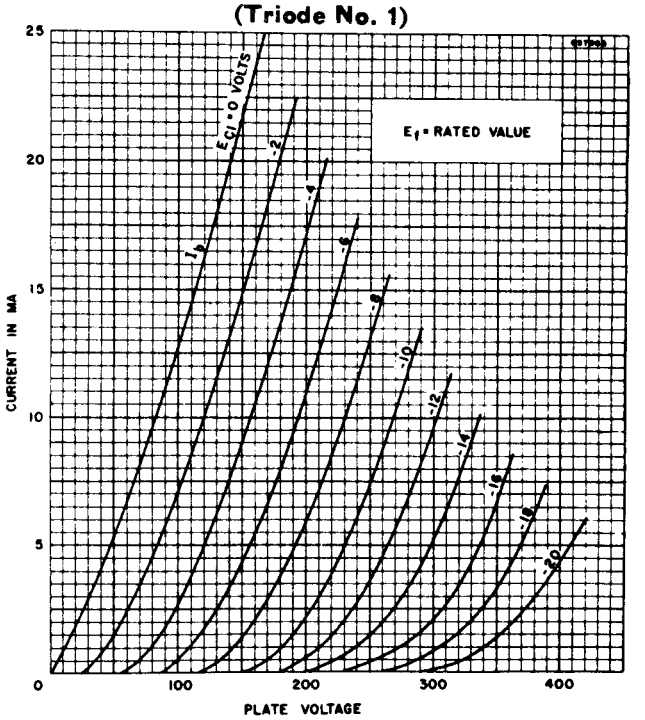
1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.
2. Design Maximum Ratings are the limiting values expressed with respect to bogey tubes at which satisfactory tube life can be expected to occur. To obtain satisfactory circuit performance, therefore, the equipment designed must establish the circuit design so that no design-maximum value is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.
3. 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.
4. 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.

APPLICATION NOTES

The Sylvania Types 6DE7, 10DE7, and 13DE7 have dissimilar double triodes contained in a miniature envelope. Triode No. 1 is intended for use as a Vertical Deflection Oscillator and Triode No. 2 is intended for use as a Vertical Deflection Amplifier.

Types 10DE7 and 13DE7 have controlled heater warm-up time for series string operation.

AVERAGE PLATE CHARACTERISTICS
(Triode No. 1)



AVERAGE PLATE CHARACTERISTICS
(Triode No. 2)