

Grid No. 2 and Grid No. 4 Voltage (Max.)	100 Volts
Negative Grid No. 3 Voltage (Max.)	50 Volts
Positive Grid No. 3 Voltage (Max.)	0 Volt
Plate Dissipation (Max.)	1.0 Watt
Grid No. 2 and Grid No. 4 Dissipation (Max.)	1.0 Watt
Cathode Current (Max.).....	14 Ma

CHARACTERISTICS AND TYPICAL OPERATION

Plate Voltage	100	250 Volts
Grid No. 2 and Grid No. 4 Voltage	100	100 Volts
Grid No. 3 Voltage	-2	-2 Volts
Oscillator Grid No. 1 Voltage (RMS).....	10	10 Volts
Oscillator Grid No. 1 Resistance	20,000	20,000 Ohms
Oscillator Grid Current	0.5	0.5 Ma
Plate Current	3.3	3.5 Ma
Grid No. 2 and Grid No. 4 Current.....	8.5	8.5 Ma
Conversion Transconductance	425	450 μ mhos
Plate Resistance (Approx.)	0.5	1.0 Megohm
Cathode Current	12.3	12.5 Ma
Ec3 for Gm = 10 μ mhos (Approx.)	-25	-25 Volts
Ec3 for Gm = 100 μ mhos (Approx.)	-9	-9 Volts

OSCILLATOR CHARACTERISTICS (Non-Oscillating)

Grid No. 2 and Grid No. 4 Voltage ⁽¹⁾	100 Volts
Grid No. 3 Voltage	0 Volt
Grid No. 1 Voltage	0 Volt
Transconductance between Grid No. 1 to Grid No. 2 and Grid No. 4 ⁽¹⁾ ...	4500 μ mhos
Amplification Factor between Grid No. 1 and Grid No. 2 and Grid No. 4 ⁽¹⁾ ...	14
Cathode Current	25 Ma
Ec1 for Ib = 10 μ a (Approx.).....	-14 Volts

NOTE:

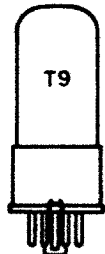
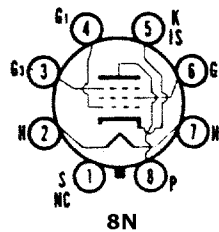
(1) Connected to plate.

RF or AF AMPLIFIER

6SJ7GT
12SJ7GT

Sharp Cutoff Pentode

Construction	Octal T-9
Base	Octal 8 Pin, B8-26
Basing	8N
Outline	9-12
Maximum Diameter	1.188 In.
Maximum Seated Height	2.750 In.
Maximum Overall Height	3.312 In.



ELECTRICAL DATA

HEATER OPERATION

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

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

Grid No. 1 to Plate (Max.).....	0.005 Pf
Input: g1 to (h + k + g2 + g3)	7.0 Pf
Output: p to (h + k + g2 + g3)	7.0 Pf

RATINGS (Design Center Rating System)

Plate Voltage (Max.)	300 Volts
Grid No. 3 Voltage	Connected to Cathode at Socket
Grid No. 2 Supply Voltage (Max.)	300 Volts
Grid No. 2 Voltage	See Rating Chart (Gen. Info. Sec.)
Plate Dissipation (Max.)	2.5 Watts
Grid No. 2 Dissipation (Max.)	0.7 Watts
Positive Grid No. 1 Voltage (Max.)	0 Volt
Grid Circuit Resistance (Self Bias) (Max.)	1.0 Megohm

CHARACTERISTICS AND TYPICAL OPERATION

Plate Voltage	100	250 Volts
Grid No. 3 Voltage	Connected to Cathode at Socket	
Grid No. 2 Voltage	100	100 Volts
Grid No. 1 Voltage	-3	-3 Volts
Plate Current	2.9	3 Ma
Grid No. 2 Current	0.9	0.8 Ma
Transconductance	1575	1650 μ mhos
Plate Resistance (Approx.)	0.7	1.0 Megohm
Ec1 for Ib = 10 μ a (Approx.)	-8	-8 Volts

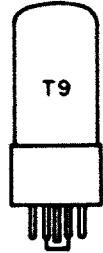
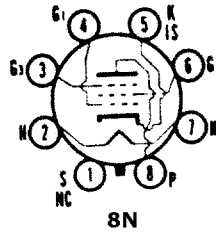
6SK7GT

12SK7GT

RF or IF AMPLIFIER

Remote Cutoff Pentode

ConstructionOctal T-9
 BaseOctal 8 Pin, B8-6
 Basing8N
 Outline9-11
 Maximum Diameter1.188 In.
 Maximum Seated Height2.750 In.
 Maximum Overall Height3.312 In.



ELECTRICAL DATA

HEATER OPERATION

	12SK7GT	6SK7GT
Heater Voltage.....	12.6	6.3 Volts
Heater Current	150	300 Ma
Maximum Heater-Cathode Voltage	90	90 Volts

DIRECT INTERELECTRODE CAPACITANCES (Shielded)

Grid No. 1 to Plate (Max.).....	0.005 Pf
Input: g1 to (H + k + g2 + g3)	6.5 Pf
Output: p to (H + k + g2 + g3)	7.5 Pf

RATINGS (Design Center Rating System)

Plate Voltage (Max.)	300 Volts
Grid No. 2 Supply Voltage (Max.)	300 Volts
Grid No. 2 Voltage	See Rating Chart (Gen. Info. Sec.)
Positive Grid No. 1 Voltage (Max.)	0 Volt
Plate Dissipation (Max.)	4.0 Watts
Grid No. 2 Dissipation (Max.)	0.4 Watt

CHARACTERISTICS AND TYPICAL OPERATION

Plate Voltage	100	250 Volts
Grid No. 3 Voltage	Connected to Cathode at Socket	
Grid No. 2 Voltage	100	100 Volts
Grid No. 1 Voltage	-1	-3 Volts
Plate Current	13	9.2 Ma
Grid No. 2 Current	4.0	2.6 Ma
Transconductance	2350	2000 μ mhos
Plate Resistance (Approx.)	120,000	800,000 Ohms
E _{c1} for G _m = 10 μ mhos (Approx.)	-35	-35 Volts

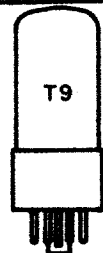
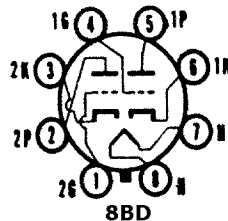
6SL7GT

12SL7GT

AF VOLTAGE AMPLIFIER

High Mu Twin Triode

ConstructionOctal T-9
 Base.....Octal 8 Pin, B8-6 or B8-58
 Basing8BD
 Outline9-11 or 9-41
 Maximum Diameter1.188 In.
 Maximum Seated Height2.750 In.
 Maximum Overall Height3.312 In.



ELECTRICAL DATA

HEATER OPERATION

	12SL7GT	6SL7GT
Heater Voltage.....	12.6	6.3 Volts
Heater Current	150	300 Ma
Maximum Heater-Cathode Voltage	90	90 Volts

DIRECT INTERELECTRODE CAPACITANCES (Shielded)⁽¹⁾

	Section No. 1 ⁽²⁾	Section No. 2 ⁽²⁾
Grid to Plate	2.8	2.8 Pf
Grid to Cathode.....	3.0	3.4 Pf
Plate to Cathode	3.8	3.2 Pf

Coupling

Plate to Plate	0.4	Pf
Grid to Grid	0.65	Pf
Grid Section No. 2 to Plate Section No. 1	0.13	Pf

RATINGS (Design Center Rating System) (Each Section)

Plate Voltage (Max.)	300 Volts
Plate Dissipation (Max.)	1.0 Watt
Positive Grid Voltage (Max.)	0 Volt

CHARACTERISTICS AND TYPICAL OPERATION

Class A1 Amplifier (Each Section)

Plate Voltage	250 Volts
Grid Voltage	-2 Volts
Cathode Bias Resistor	870 Ohms
Plate Current	2.3 Ma
Transconductance	1600 μ mhos
Amplification Factor	70
Plate Resistance.....	44,000 Ohms

NOTES:

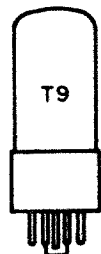
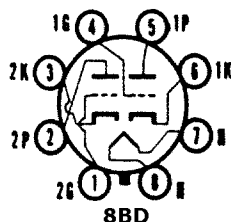
- (1) Standard 1 $\frac{1}{4}$ " diameter shield (EIA Std. M8-308) connected to cathode.
- (2) Section No. 1 connects to pins 4, 5, and 6. Section No. 2 connects to pins 1, 2, and 3.

**HORIZONTAL MULTIVIBRATOR,
PHASE INVERTER, or
VERTICAL OSC. and AMP.**

6SN7GTB
8SN7GTB, 12SN7GTA

Medium Mu Double Triode

Construction	Octal T-9
Base.....	Octal 8 Pin, B8-6 or B8-58
Basing	8BD
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

	12SN7GTA	8SN7GTB	6SN7GTB
Heater Voltage.....	12.6	8.4	6.3 Volts
Heater Current	300	450	600 Ma
Heater Warm-up Time	—	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 1 ⁽¹⁾	Section 2 ⁽¹⁾
Grid to Plate	4.0	3.8 Pf
Input	2.2	2.6 Pf
Output	0.7	0.7 Pf

RATINGS (Design Center Rating System)

	Class A1 Amplifier	Vertical ⁽²⁾ Deflection Amplifier
Plate Voltage (Max.)	450	450 Volts
Peak Positive Plate Voltage (Abs. Max.)	—	1500 Volts
Plate Dissipation		
Each Plate (Max.)	5.0	5.0 Watts
Both Plates (Max.)	7.5	7.5 Watts
Peak Negative Grid Voltage (Max.)	—	250 Volts
Cathode Current (Max.).....	20	20 Ma
Peak Cathode Current (Max.)	—	70 Ma
Grid No. 1 Circuit Resistance		
Fixed Bias (Max.)	1.0	— Megohm
Cathode Bias (Max.)	1.0	2.2 Megohm
	Vertical ⁽²⁾ Deflection Oscillator	Horizontal ⁽²⁾ Deflection Oscillator
Plate Voltage (Max.)	450	450 Volts
Plate Dissipation		
Each Plate (Max.)	5.0	5.0 Watts
Both Plates (Max.)	7.5	7.5 Watts
Peak Negative Grid Voltage (Max.)	400	600 Volts
Average Cathode Current (Max.).....	20	20 Ma
Peak Cathode Current (Max.)	70	300 Ma
Grid Circuit Resistance (Max.)	2.2	2.2 Megohm

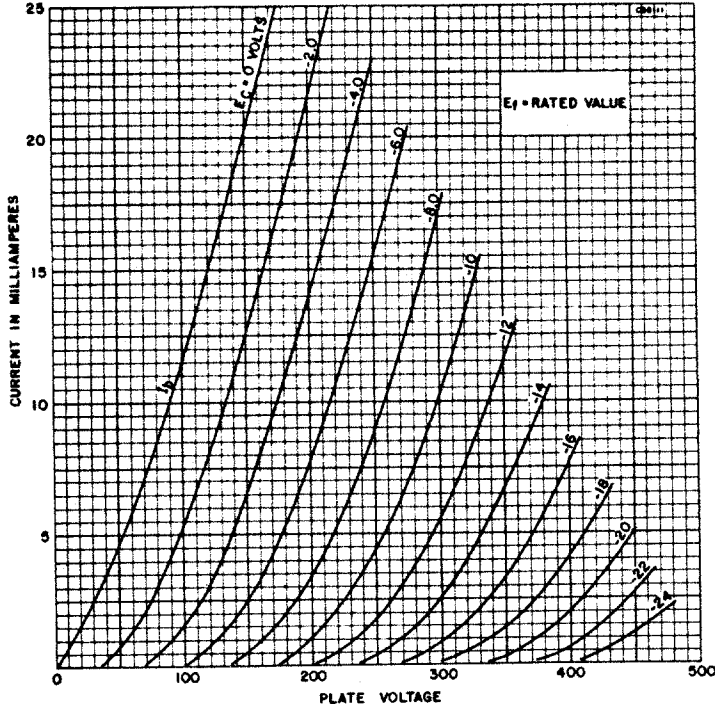
CHARACTERISTICS AND TYPICAL OPERATION
Class A1 Amplifier (Each Section)

Plate Voltage	90	250 Volts
Grid Voltage	0	-8.0 Volts
Plate Current	10	9.0 Ma
Transconductance	3000	2600 μ mhos
Amplification Factor	20	20
Plate Resistance (Approx.)	6700	7700 Ohms
Plate Current at $E_c = 12.5$ Volts.....	—	1.3 Ma
Grid Voltage for $I_b = 10 \mu$ a (Approx.)	-7.0	-18 Volts

NOTES:

- (1) Section No. 1 connects to pins 4, 5 and 6. Section No. 2 connects to pins 1, 2 and 3.
- (2) 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.

AVERAGE PLATE CHARACTERISTICS
(Each Section)



AVERAGE TRANSFER CHARACTERISTICS
(Each Section)

