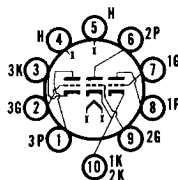
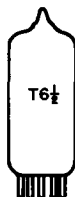


6J9**VHF AMPLIFIER, OSCILLATOR
and MIXER****Triple Triode**

Construction Miniature T-6½
 Base Button 10 Pin, E10-73
 (Center Pin Added to 9 Pin Base)
 Basing⁽¹⁾ 10G
 Outline 6-13
 Maximum Diameter 0.875 In.
 Maximum Seated Height 1.940 In.
 Maximum Overall Height 2.190 In.



10 G

**ELECTRICAL DATA****HEATER OPERATION**

Heater Voltage.....	6.3 Volts
Heater Current.....	450 Ma
Heater Warm-up Time.....	11 Seconds
Maximum Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
Total DC and Peak.....	100 Volts
Heater Positive with Respect to Cathode	
Total DC and Peak.....	100 Volts

DIRECT INTERELECTRO CAPACITANCES

	Shielded ⁽²⁾	Unshielded
Grid to Plate (Section 1 and 3)	1.6	1.6 Pf
Grid to Plate (Section 2)	1.5	1.5 Pf
Input (Each Section)	2.6	2.4 Pf
Output (Section No. 1)	1.1	0.28 Pf
Output (Section No. 2)	1.5	0.44 Pf
Output (Section No. 3)	1.1	0.26 Pf
Heater to Cathode (Section No. 3)	3.2	3.2 Pf
Heater to Cathode (Sections 1 and 2)	6.2	6.2 Pf

RATINGS (Design Maximum Rating System) (Each Section)

Plate Voltage (Max.)	330 Volts
Plate Dissipation (Each Plate) (Max.)	2.0 Watts
Plate Dissipation (Plates 1, 2, and 3) (Max.)	5.0 Watts
Positive Grid Voltage (Max.)	0 Volt
Negative Grid Voltage (Max.)	50 Volts

CHARACTERISTICS AND TYPICAL OPERATION**Class A1 Amplifier (Each Section)**

Plate Voltage	125 Volts
Grid Voltage	-1.0 Volts
Plate Current	6.0 Ma
Plate Resistance.....	11,000 Ohms
Transconductance	5200 μ mhos
Amplification Factor	57
Ec for Ib = 20 μ a (Approx.)	-5.4 Volts

NOTES:

- (1) Section No. 1 connects to Pins 7, 8, and 10; Section No. 2 connects to Pins 6, 9, and 10;
 Section No. 3 connects to Pins 1, 2, and 3.
 (2) Shield No. 315 ties to cathode of triode under test.

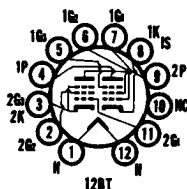
6J10

13J10/13Z10

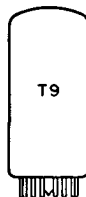
Color Television Type

**FM DISCRIMINATOR and
AUDIO POWER AMPLIFIER****Double Dissimilar Pentodes**

Construction..... Compactron T-9
 Base Button 12 Pin, E12-70
 Basing 12BT
 Outline 9-58
 Maximum Diameter 1.188 In.
 Maximum Seated Height 2.000 In.
 Maximum Overall Height 2.375 In.



12BT



ELECTRICAL DATA**HEATER OPERATION**

	13J10/13Z10	6J10
Heater Voltage.....	13.2	6.3 Volts
Heater Current	450	950 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)**Section No. 1**

Grid No. 1 to All.....	4.0 Pf
Grid No. 3 to All.....	3.2 Pf
Grid No. 1 to Grid No. 3	0.01 Pf

Section No. 2

Grid to Plate	0.2 Pf
Input	11.0 Pf
Output	7.0 Pf

RATINGS (Design Maximum Rating System)**Section No. 1**

Plate Supply Voltage (Max.)	330 Volts
Accelerator Voltage (G2) (Max.)	110 Volts
Peak Positive G1 Voltage (Max.)	60 Volts
DC Cathode Current (Max.)	13 Ma

Section No. 2

Plate Voltage (Max.)	275 Volts
Screen Voltage (Max.)	275 Volts
Plate Dissipation (Max.)	10.0 Watts
Screen Dissipation (Max.)	2.0 Watts
Grid No. 1 Circuit Resistance	
Fixed Bias (Max.)	0.25 Megohms
Cathode Bias (Max.)	0.5 Megohm

CHARACTERISTICS AND TYPICAL OPERATION**Section No. 1****Gated Beam Discriminator Section—Limiter/Discriminator Service**

Input Signal Center Frequency	10.7	10.7	4.5 MHz
Frequency Deviation	± 75	± 75	± 25 KHz
Plate Supply Voltage.....	85	285	270 Volts
Plate Voltage	62	122	121 Volts
Accelerator Voltage	55	100	100 Volts
Cathode Bias Resistor—Variable ⁽¹⁾	200-400	200-400	200-400 Ohms
Plate Load Resistor	0.085	0.330	0.330 Megohms
Plate Linearity Resistor	470	1500	1000 Ohms
Integrating Capacitor	0.002	0.001	0.001 Pf
Coupling Capacitor	0.25	0.01	0.25 Pf
Minimum Signal Voltage for			
Limiting Action, rms ⁽²⁾	1.25	1.25	1.25 Volts
DC Plate Current	0.25	0.49	0.44 Ma
Accelerator Current	4.1	9.8	10 Ma
Input Signal Level for AM Rejection Adjustment ⁽¹⁾	1.25	2.0	2.0 Volts
AM Rejection at Esig = 2.0 Volts, rms	31	20	25 db
AM Rejection at Esig = 3.0 Volts, rms	30	29	30 db
Total Harmonic Distortion	2.0	1.6	1.8 Percent
Peak Audio Output Voltage	6.0	16.6	16.8 Volts

Section No. 2**Power Amplifier**

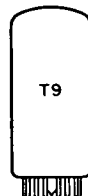
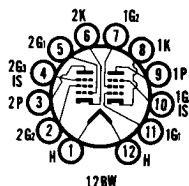
Plate Voltage	250 Volts
Screen Voltage.....	250 Volts
Grid No. 1 Voltage	-8.0 Volts
Peak AF Grid Voltage	8.0 Volts
Plate Resistance (Approx.)	100,000 Ohms
Transconductance	6500 μ mhos
Zero Signal Plate Current	35 Ma
Maximum Signal Plate Current	39 Ma
Zero Signal Screen Current	2.5 Ma
Maximum Signal Screen Current	7.0 Ma
Load Resistance	5000 Ohms
Total Harmonic Distortion (Approx.)	10 Percent
Maximum Signal Power Output	4.2 Watts

NOTES:

- (1) The cathode resistor should be adjusted for maximum AM rejection in the output of the limiter-discriminator stage at the specified signal level. AM rejection is measured with an applied signal containing 30% AM and 30% FM.
- (2) At signal levels above specified value, limiting is within ± 3 decibels. Adequate shielding between components of the limiter grid and the quadrature grid must be used to insure proper phasing of the voltage developed at the quadrature grid. Standard de-emphasis requirements for FM are included. The Q of the quadrature grid circuit should be high enough to develop a minimum of 4 volts (rms) signal with 2 volts (rms) of the center-frequency signal applied to the limiter grid. It is recommended that the coil be shunted by a minimum of 10 Pf. The capacitance may be composed of tube input capacitance, stray capacitance, and distributed capacitance, as well as physical capacitance.

6J11**IF AMPLIFIER****Double Sharp Cutoff Pentode**

Construction Compactron T-9
 Base Button 12 Pin, E12-70
 Basing 12BW
 Outline 9-58
 Maximum Diameter 1.188 In.
 Maximum Seated Height 2.000 In.
 Maximum Overall Height 2.375 In.

**ELECTRICAL DATA****HEATER OPERATION**

Heater Voltage.....	6.3 Volts
Heater Current.....	800 Ma
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)⁽¹⁾**Section 1**

Grid No. 1 to Plate (Max.)	0.04 Pf
Input: 1g1 to (h + 1k + 1g2 + 1g3 + 2g3 + 1S)	11 Pf
Output: 1p to (h + 1k + 1g2 + 1g3 + 2g3 + 1S)	2.8 Pf

Section 2

Grid No. 1 to Plate (Max.)	0.04 Pf
Input: 2g1 to (h + 2k + 2g2 + 2g3 + 1g3 + 1S)	11 Pf
Output: 2p to (h + 2k + 2g2 + 2g3 + 1g3 + 1S)	3.2 Pf
Cathode Section 1 to Cathode, Section 2 (Max.)	0.02 Pf
Grid No. 1, Section 1 to Plate, Section 2 (Max.)	0.003 Pf
Grid No. 1, Section 2 to Plate, Section 1 (Max.)	0.003 Pf
Plate, Section 1 to Plate, Section 2 (Max.)	0.03 Pf

RATINGS (Design Maximum Rating System) (Each Section)

Plate Voltage (Max.)	330 Volts
Screen-Supply Voltage (Max.)	330 Volts
Screen Voltage	See Rating Chart (Gen. Info. Sec.)
Positive DC Grid No. 1 Voltage (Max.)	0 Volt
Plate Dissipation (Max.)	3.1 Watts
Screen Dissipation (Max.)	0.65 Watts
Grid No. 1 Circuit Resistance with Cathode Bias (Max.)	0.25 Megohm

CHARACTERISTICS AND TYPICAL OPERATION (Each Section)

Plate Voltage	125 Volts
Suppressor	Connected to Cathode at Socket
Screen Voltage	125 Volts
Cathode-Bias Resistor	56 Ohms
Plate Resistance (Approx.)	0.2 Megohm
Transconductance	13,000 μ mhos
Plate Current	11 Ma
Screen Current	3.8 Ma
Grid No. 1 Voltage, (Approx.)	
Ib = 20 μ a	-3 Volts

NOTE:

- (1) Shield No. 309 connected to cathode of section under test.