

NOTE:

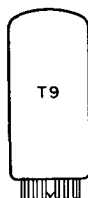
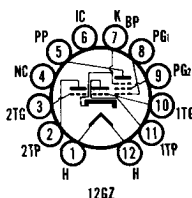
- (1) For operation in a 525 line, 30 frame system as described in "Standards of Good Engineering Practice for Television Broadcast Stations; Federal Communications Commission," the duty cycle of the voltage pulse must not exceed 15% of one horizontal scanning cycle.

23Z9

**VERTICAL DEFLECTION AMP. (P)
VERTICAL DEFLECTION OSC. (T)
GENERAL PURPOSE AMPLIFIER (T)**

**Medium Mu Triode, High Mu Triode
and Beam Power Pentode**

Construction..... Compactron T-9
Base Button 12 Pin, E12-70
Basing 12GZ
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.....	23 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.....	200 Volts
Heater Positive with Respect to Cathode	
DC	100 Volts
Total DC and Peak.....	200 Volts

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)**Triode (Section 1)**

Grid to Plate	3.0 Pf
Input: 1Tg to (h + k + Pbp)	3.0 Pf
Output: 1Tp to (h + k + Pbp)	0.4 Pf

Triode (Section 2)

Grid to Plate	3.8 Pf
Input: 2Tg to (h + k + Pbp)	2.0 Pf
Output: 2Tp to (h + k + Pbp)	0.44 Pf

RATINGS (Design Maximum Rating System)**Pentode Section—Vertical Deflection Amplifier Service⁽¹⁾**

DC Plate Voltage (Max.)	250 Volts
Peak Pulse Plate Voltage (Max.)	2000 Volts
Screen Voltage (Max.)	200 Volts
Peak Negative Grid No. 1 Voltage (Max.)	150 Volts
Plate Dissipation (Max.)	7.0 Watts
Screen Dissipation (Max.)	1.8 Watts
Total DC Plate and Screen Current (Max.)	70 Ma
Total Peak Plate and Screen Current (Max.)	245 Ma
Grid No. 1 Circuit Resistance	
Fixed Bias	1.0 Megohm

Triode Section 1

Plate Voltage (Max.)	330 Volts
Positive DC Grid Voltage (Max.)	0 Volt
Plate Dissipation (Max.)	1.25 Watts
Grid Circuit Resistance	
Fixed Bias (Max.)	0.5 Megohm

Triode Section 2—Vertical Oscillator Service⁽¹⁾

DC Plate Voltage (Max.)	250 Volts
Peak Negative Grid Voltage (Max.)	400 Volts
Plate Dissipation (Max.)	1.0 Watt
DC Plate Current (Max.)	20 Ma
Peak Plate Current (Max.)	70 Ma
Grid Circuit Resistance	
Fixed Bias (Max.)	1.0 Megohm

CHARACTERISTICS AND TYPICAL OPERATION**Pentode Section**

Plate Voltage	45	120 Volts
Screen Voltage.....	110	110 Volts

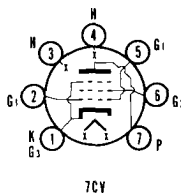
Grid No. 1 Voltage	0 ⁽²⁾	-8.0 Volts
Plate Resistance (Approx.)	—	11,700 μ mhos
Transconductance	—	7100 Ma
Plate Current	122	46 Ma
Screen Current	16.5	3.5 Ma
Grid No. 1 Voltage (Approx.) Ib = 100 μ a	—	-25 Volts
Triode Section 1		
Plate Voltage		150 Volts
Grid Voltage		-2.0 Volts
Amplification Factor		43
Plate Resistance (Approx.)		11,000 Ohms
Transconductance		3900 μ mhos
Plate Current		5.4 Ma
Grid Voltage (Approx.) Ib = 10 μ a		-5.7 Volts
Triode Section 2		
Plate Voltage		150 Volts
Grid Voltage		-5.0 Volts
Amplification Factor		20
Plate Resistance (Approx.)		8500 Ohms
Transconductance		2350 μ mhos
Plate Current		5.5 Ma
Grid Voltage (Approx.) Ib = 10 μ a		-11 Volts

NOTES:

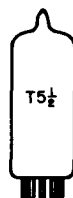
- (1) For operation in a 525 line, 30 frame system as described in "Standards of Good Engineering Practice for Television Broadcast Stations; Federal Communications Commission," the duty cycle of the voltage pulse must not exceed 15% of one horizontal scanning cycle.
- (2) Applied for short interval (two seconds maximum) so as not to damage tube.

AUDIO POWER AMPLIFIER**32ET5A****Beam Power Pentode**

Construction	Miniature T-5½
Base	Button 7 Pin, E7-1
Basing	7CV
Outline	5-3
Maximum Diameter	0.750 In.
Maximum Seated Height	2.375 In.
Maximum Overall Height	2.625 In.



7CV

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

Heater Voltage	32 Volts
Heater Current	100 Ma
Heater Warm-up Time	20 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)

Grid No. 1 to Plate	0.6 Pf
Input: g to (h + k + g2 + g3)	12 Pf
Output: p to (h + k + g2 + g3)	6.0 Pf

RATINGS (Design Maximum Rating System)

Plate Voltage (Max.)	150 Volts
Grid No. 2 Voltage (Max.)	130 Volts
Plate Dissipation (Max.)	5.4 Watts
Grid No. 2 Dissipation (Max.)	1.2 Watts
Grid No. 1 Circuit Resistance	
Fixed Bias (Max.)	0.1 Megohm
Cathode Bias (Max.)	0.5 Megohm

CHARACTERISTICS AND TYPICAL OPERATION**Class A1 Amplifier**

Plate Voltage	110 Volts
Grid No. 2 Voltage	110 Volts
Grid No. 1 Voltage	-7.5 Volts
Peak AF Grid No. 1 Voltage	7.5 Volts
Zero-Signal Plate Current	30 Ma