

CHARACTERISTICS AND TYPICAL OPERATION**Pentode—Class A1 Amplifier**

Plate Voltage	100 Volts
Grid No. 3 and Internal Shield	Tied to Cathode
Grid No. 2 Voltage	100 Volts
Grid No. 1 Voltage ⁽¹⁾	
Grid No. 1 Resistor	2.2 Megohms
Plate Current	9.0 Ma
Grid No. 2 Current	3.5 Ma
Transconductance	3800 μ mhos
Plate Resistance (Approx.)	250,000 Ohms
Ec1 for gm = 40 μ mhos (Approx.)	-20 Volts
Average Diode Current with 10 Volts DC Applied (Test Condition ONLY)	2.0 Ma

NOTE:

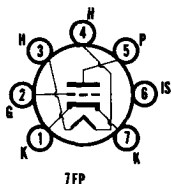
(1) Average contact potential bias developed across specified grid resistor.

Color Television Type
VHF AMPLIFIER

6ER5
 2ER5, 3ER5

Semi-Remote Cutoff Triode

Construction Miniature T-5½
 Base Button 7 Pin, E7-1
 Basing 7FP
 Outline 5-2
 Maximum Diameter 0.750 In.
 Maximum Seated Height 1.875 In.
 Maximum Overall Height 2.125 In.

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

	2ER5	3ER5	6ER5
Heater Voltage.....	2.3	2.8	6.3 Volts
Heater Current	600	450	180 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	Unshielded
Grid to Plate	0.36	0.38 Pf
Input	4.4	4.4 Pf
Output	4.0	3.0 Pf
Heater to Cathode	2.8	2.8 Pf
Grid to Cathode.....	3.1	3.1 Pf
Plate to Cathode	0.2	0.24 Pf
Grid to Heater (Max.)	0.28	0.28 Pf

RATINGS (Design Center Rating System)

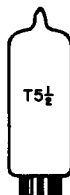
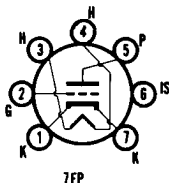
Supply Voltage (Max.)	550 Volts
Plate Voltage (Max.)	250 Volts
Plate Dissipation (Max.)	2.2 Watts
Cathode Current (Max.).....	20 Ma
Negative Grid Voltage (Max.)	50 Volts
Grid Circuit Resistance Cathode Bias (Max.)	1.0 Megohm

CHARACTERISTICS AND TYPICAL OPERATION

Plate Voltage	200 Volts
Grid Voltage	-1.2 Volts
Plate Current	10 Ma
Transconductance	10,500 μ mhos
Amplification Factor	80
Plate Resistance.....	8000 Ohms
Ec1 for Gm = 500 μ mhos	-3.8 Volts
Ec1 for Gm = 100 μ mhos	-5.6 Volts

6ES5**2ES5, 3ES5****VHF AMPLIFIER****High Mu Triode**

Construction Miniature T-5½
 Base Button 7 Pin, E7-1
 Basing 7FP
 Outline 5-2
 Maximum Diameter 0.750 In.
 Maximum Seated Height 1.875 In.
 Maximum Overall Height 2.125 In.

**ELECTRICAL DATA
HEATER OPERATION**

	2ES5	3ES5	6ES5
Heater Voltage.....	2.35	3.0	6.3 Volts
Heater Current.....	600	450	200 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

	Shielded (1)	Unshielded
Grid to Plate: g to p (Max.).....	0.5	0.5 Pf
Input: g to (h + k + IS).....	3.2	3.2 Pf
Output: p to (h + k + IS).....	4.0	3.2 Pf

RATINGS (Design Maximum Rating System)

Plate Voltage (Max.).....	250 Volts
Positive Grid Voltage (Max.).....	0 Volt
Plate Dissipation (Max.).....	2.2 Watts
DC Cathode Current (Max.).....	22 Ma
Grid Circuit Resistance (Max.).....	1.0 Megohm

CHARACTERISTICS AND TYPICAL OPERATION**Class A1 Amplifier**

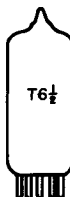
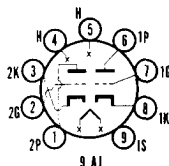
Plate Voltage.....	200 Volts
Grid Voltage.....	-1.0 Volt
Plate Resistance (Approx.).....	8000 Ohms
Transconductance.....	9000 μ mhos
Amplification Factor.....	75
Plate Current.....	10 Ma
Grid Voltage (Approx.) for 100 μ a Plate Current.....	-6.0 Volts

NOTE:

(1) With external shield No. 316 connected to Pin 1.

6ES8/ECC189**4ES8, 5ES8****VHF CASCODE AMPLIFIER****Semi-Remote Cutoff Twin Triode**

Construction Miniature T-6½
 Base Button 9 Pin, E9-1
 Basing (1) 9AJ
 Outline 6-2
 Maximum Diameter 0.875 In.
 Maximum Seated Height 1.937 In.
 Maximum Overall Height 2.187 In.

**ELECTRICAL DATA
HEATER OPERATION**

	4ES8	5ES8	6ES8/ECC189
Heater Voltage.....	4.0	5.6	6.3 Volts
Heater Current.....	600	450	365 Ma
Heater Warm-up Time.....	11	11	— Seconds