No. 2 Diode Plate to No. 2 Diode Cathode + Heater	1.9 Pf
No. 1 Diode Cathode to No. 1 Diode Plate + Heater	4.6 Pf
No. 2 Diode Cathode to No. 2 Diode Plate + Heater	4.6 Pf
Triode Section	
Grid to Plate	2.6 Pf
Input: g to (h + Tk)	2.8 Pf
Output: p to (h + Tk)	0.31 Pf
Coupling	
No. 1 Diode Plate to Triode Grid (Max.)	0.070 Pf
No. 2 Diode Plate to Triode Grid (Max.)	0.11 Pf
No. 1 Diode Cathode to All: 1 Dk to (h + Tk + 2Dk + Tp + 1Dp + Tg + 2Dp)	4.8 Pf
No. 2 Diode Cathode to All: 2DK to (h + Tk + 1Dk + Tp + 1Dp + 2Dp + Tg)	4.8 Pf
No. 1 Diode Plate to No. 2 Diode Plate (Max.)	0.060 Pf
No. 1 Diode Plate to All: 1DP to (h + Tk + 1Dk + 2Dk + Tp + 2Dp + Tg)	3.0 Pf
No. 2 Diode Plate to All: 2DP to (h + Tk + 1Dk + 2Dk + Tp + 1Dp + Tg)	3.0 Pf

RATINGS (Design Maximum Rating System)

	Class A1 Amplifier	Vert. Def. Amplifier(1)
Triode Section		
Plate Voltage (Max.)	330	330 Volts
Peak Positive Pulse Plate Voltage (Abs. Max.)	—	1200 Volts
Peak Negative Pulse Grid Voltage (Max.)	—	275 Volts
Positive DC Grid Voltage (Max.)	0	— Volt
Maximum Plate Dissipation(2) (Max.)	4.0	4.0 Watts
Average Cathode Current (Max.)	22	22 Ma
Peak Cathode Current (Max.)	—	77 Ma
Grid Circuit Resistance		
Self Bias (Max.)	1.0	2.2 Megohms
Fixed Bias (Max.)	1.0	— Megohms
Diode Section		
Peak Plate Current (Each Plate) (Max.)	—	54 Ma
DC Current (Each Plate) (Max.)	—	9 Ma

CHARACTERISTICS AND TYPICAL OPERATION

Triode Section		
Class A1 Amplifier		
Plate Voltage	90	250 Volts
Grid Voltage	0	−9 Volts
Plate Current	13.5	8.0 Ma
Transconductance	4700	2800 μmhos
Amplification Factor	22	20
Plate Resistance (Approx.)	4700	7150 Ohms
Plate Current at Ec = −12.5 Volts DC	—	1.7 Ma
Diode Section		
Average Current Each Plate at 10 Volts DC(3)		50 Ma
Voltage Drop Each Section at Ib = 9 Ma DC		2.6 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) In stages operating with grid leak bias, an adequate cathode bias resistor or other suitable means is required to protect the tube in the absence of excitation.

(3) Test conditions only.

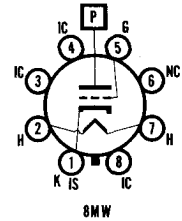
6BK4C/6EL4A

Color Television Type

SHUNT VOLTAGE REGULATOR

Sharp Cutoff Beam Pentode

Construction	Octal T-12
Base	B8-71 or B8-118
Top Cap	Small C1-1 or C1-34
Basing	8MW
Outline	12-36
Maximum Diameter	1.720 In.
Maximum Seated Height	4.438 In.
Maximum Overall Height	5.000 In.



8MW

ELECTRICAL DATA

HEATER OPERATION

Heater Voltage	6.3 Volts
Heater Current	200 Ma
Maximum Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	450 Volts
Heater Positive with Respect to Cathode	Not Recommended

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

Grid to Plate	1.0 Pf
Input	2.6 Pf
Output (Max.)	1.0 Pf

RATINGS (Design Maximum Rating System)

Voltage Control Service

DC Plate Voltage (Abs. Max.)	27,000 Volts
Unregulated DC Supply Voltage (Abs. Max.)	60,000 Volts
Grid Voltage	
DC (Max.)	−135 Volts
Peak (Max.)(1)	−440 Volts
DC Plate Current (Abs. Max.)	1.6 Ma
Plate Dissipation (Max.)	40 Watts
Grid Circuit Resistance (Abs. Max.)(2)	3 Megohms

CHARACTERISTICS AND TYPICAL OPERATION

Shunt Voltage Regulator

Unregulated Supply	
DC Voltage	36,000 Volts
Equivalent Resistance	11 Megohms
Voltage Divider Values	
R1 (5 Watts)	220 Megohms
R2 (2 Watts)	1 Megohm
R3 (½ Watt)	0.82 Megohm
Reference Voltage Supply	
DC Value	200 Volts
Equivalent Resistance	1000 Ohms
Effective Grid-Plate Transconductance	200 μmhos
DC Plate Current	
For Load Current of 0 Ma	1000 μa
For Load Current of 1 Ma	45 μa
Regulated DC Output Voltage	
For Load Current of 0 Ma	25,000 Volts
For Load Current of 1 Ma	24,500 Volts
Amplification Factor	2000

X-RADIATION CHARACTERISTIC

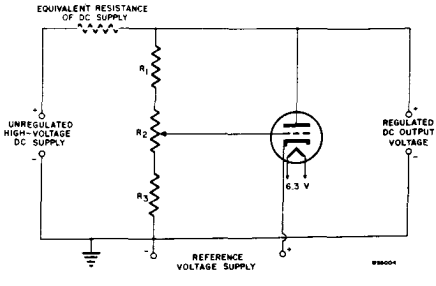
Maximum X-Radiation ..... 25.0 mR/h

X-Radiation is measured in accordance with JEDEC Publication No. 67, "Recommended Practice for Measurement of X-Radiation from Receiving Tubes," dated February 1968 and quality controlled in accordance with JEDEC Publication No. 73, "Recommended Practice for Quality Control of X-Radiation Emitted from High Voltage Rectifier and Shunt Regulator Receiving Tubes."

Lot acceptance sampling procedures for the manufacturer's initial and life tests for X-Radiation are based on MIL-STD-105, "Military Standard Sampling Procedures and Tables for Inspection by Attributes." Lot acceptance and life control limits are established substantially below the X-Radiation Characteristic Maximum.

NOTES:

(1) Peak value for maximum of 20 seconds during equipment warm-up.
(2) With flyback transformer high voltage supply.

X-RADIATION WARNING: The high voltages associated with this tube type result in the production of X-radiation which may constitute a health hazard on prolonged exposure at close range unless the tube is adequately shielded. Precautions must be exercised during the servicing of equipment to assure that all shielding components are replaced to their intended positions before the equipment is operated.

SHUNT REGULATOR CIRCUIT