



6BK4

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SHARP-CUTOFF BEAM TRIODE

HIGH-VOLTAGE, LOW-CURRENT, REGULATOR TYPE

For use in color-television receivers

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage (AC or DC) $6.3 \pm 10\%$ volts

Current 0.2 amp

Direct Interelectrode Capacitances

(Approx.):^oGrid to plate 0.03 μf Grid to cathode and heater 2.6 μf Plate to cathode and heater 1 μf

Amplification Factor (Approx.) 2000

Mechanical:

Operating Position Any

Maximum Overall Length 5"

Seated Length $4\frac{1}{4}'' \pm \frac{3}{16}''$ Maximum Diameter $1\frac{23}{32}''$

Bulb T12

Cap Small (JEDEC No.C1-1), or

Small with Tubular Support (JEDEC No.C1-34)

Base Short Jumbo-Shell Octal 8-Pin

with External Barriers

(JEDEC Group 1, No.B8-71), or

Short Medium-Shell Octal 8-Pin

with External Barriers, Style B

(JEDEC Group 1, No.B8-118)

Basing Designation for BOTTOM VIEW 8GC

Pin 1 - Cathode

Pin 2 - Heater

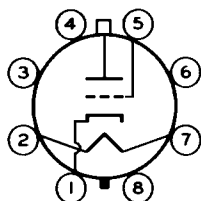
Pin 3 - Internal

Connection—

Do Not Use

Pin 4 - Same as

Pin 3



Pin 5 - Grid

Pin 6 - Same as

Pin 3

Pin 7 - Heater

Pin 8 - Same as

Pin 3

Cap - Plate

VOLTAGE-CONTROL SERVICE

Maximum Ratings, Design-Maximum Values:

DC PLATE VOLTAGE 27000 max. volts

UNREGULATED DC SUPPLY VOLTAGE 60000 max. volts

GRID VOLTAGE:

Peak $\blacksquare$ -440 max. volts

DC -135 max. volts

DC PLATE CURRENT 1.6 max. ma

PLATE DISSIPATION 25 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode 200 max. volts

Heater positive with respect to cathode Not recommended

← Indicates a change.

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Typical Operation:

*As shunt voltage-regulator
tube in accompanying circuit*

Unregulated Supply:

DC voltage.	36000	volts
Equivalent resistance	11	megohms

Voltage-Divider Values:

R_1 (5 watts).	220	megohms
R_2 (2 watts).	1	megohm
R_3 (1/2 watt)	0.82	megohm

Reference-Voltage Supply:

DC value.	200	volts
Equivalent resistance	1000	ohms

Effective Grid-Plate Transconductance .	200	μ mhos
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DC Plate Current:

For load current of 0 ma.	1000	μ a
For load current of 1 ma.	45	μ a

Regulated DC Output Voltage:

For load current of 0 ma.	25000	volts
For load current of 1 ma.	24500	volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For use with "Flyback-Transformer"		
high-voltage supply	3 max.	megohms

○ without external shield.

■ For interval of 20 seconds maximum duration during equipment warm-up period.

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	Min.	Max.	
Grid Voltage (1).	1	-7	-	volts
Grid Voltage (2).	2	-	-40	volts
Grid-Voltage Change	3	-	9	volts

Note 1: With dc plate volts = 30,000 and dc plate ma. = 1.

Note 2: With dc plate volts = 30,000 and dc plate ma. = 0.1.

Note 3: Difference between grid voltage (1) and grid voltage (2).

OPERATING CONSIDERATIONS

The high voltages at which the 6BK4 is operated are very dangerous. Great care should be taken in the design of apparatus to prevent the operator from coming in contact with these high voltages. Under all circumstances, circuit parts which may be at high potentials should be enclosed or adequately insulated.

X rays. The voltages employed in some television receivers and other high-voltage equipment are sufficiently high that high-voltage tubes may produce X rays which can consti-

→ Indicates a change.



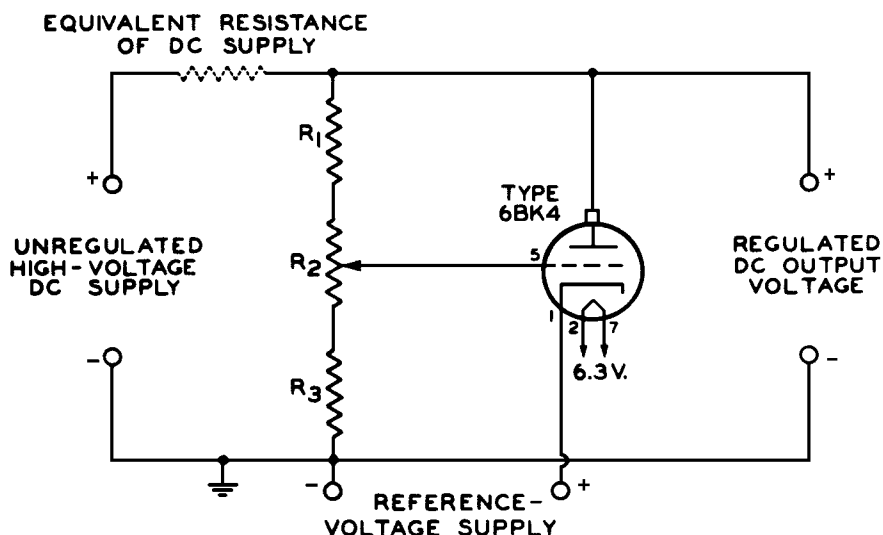
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tute a health hazard unless such tubes are adequately shielded. Relatively simple shielding should prove adequate, but the need for this precaution should be considered in equipment design.

SHUNT VOLTAGE-REGULATOR CIRCUIT



92CS-8435RI

Typical performance data for this basic circuit with certain characteristics of the unregulated dc supply and related voltage-divider values are given in the tabulated data. Other combinations are feasible within the maximum ratings and the maximum circuit values for the 6BK4.

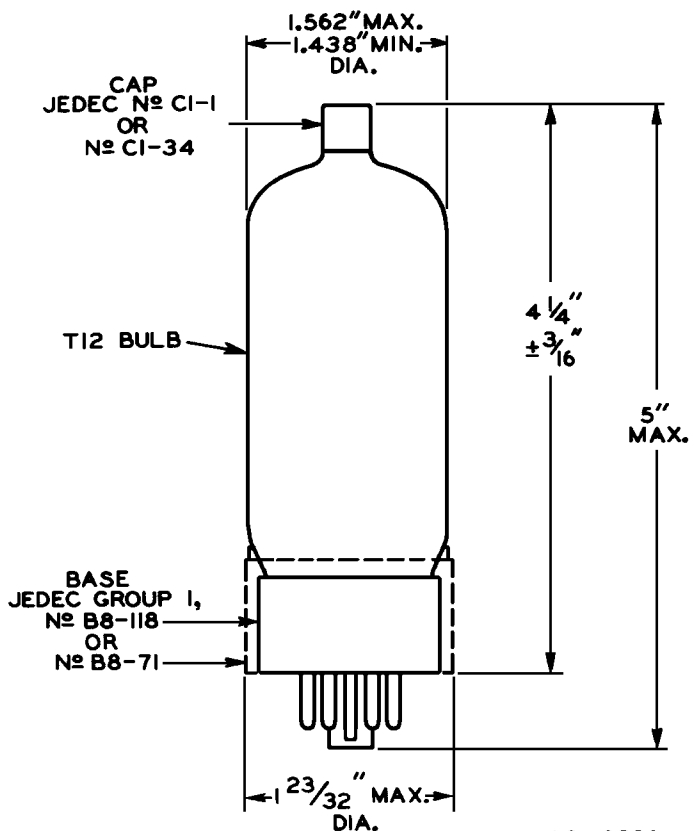
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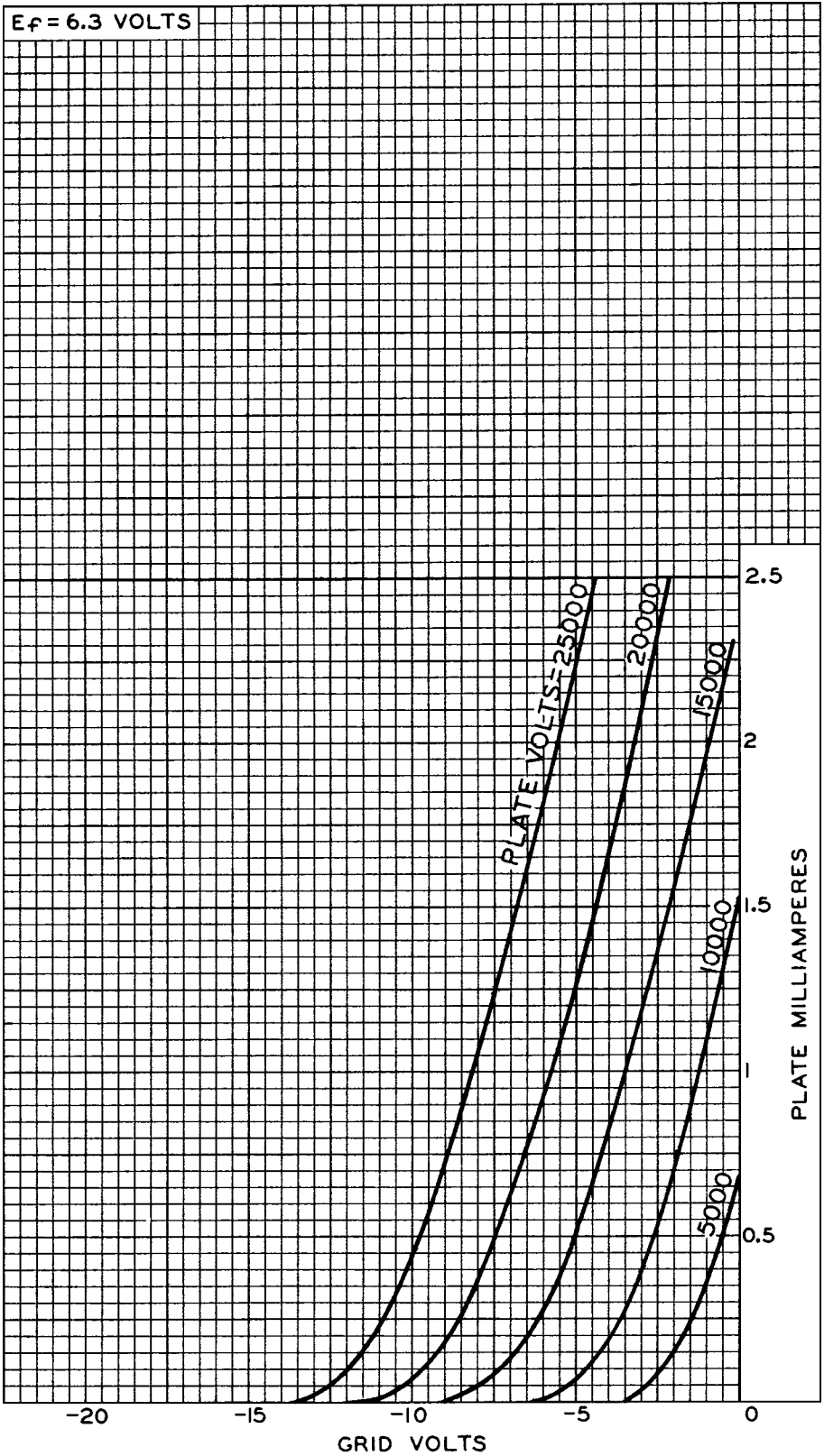


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AVERAGE TRANSFER CHARACTERISTICS

$E_f = 6.3$ VOLTS



ELECTRON TUBE DIVISION

92CM-8432R1

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY