



6BD4-A

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SHARP-CUTOFF BEAM TRIODE

HIGH-VOLTAGE, LOW-CURRENT, REGULATOR TYPE

*Supersedes Type 6BD₄***GENERAL DATA****Electrical:**

Heater, for Unipotential Cathode:

Voltage 6.3 ac or dc volts

Current 0.6 amp

Direct Interelectrode Capacitances:

Grid to Plate 1.0 μf Input 3.8 μf Output 0.04 max. μf

Amplification Factor . . . 1650

Mechanical:

Mounting Position Any

Maximum Overall Length 5-1/8"

Seated Length 4-1/2" $\pm$ 1/8"

Maximum Diameter 1-23/32"

Weight (Approx.) 2.7 oz

Bulb T-12

Cap Small (JETEC No.C1-1)

Base Short Jumbo-Shell Octal 6-Pin (JETEC No.B6-73)

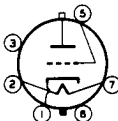
BOTTOM VIEW

Pin 1-Cathode

Pin 2-Heater

Pin 3-No
Connection

Pin 5-Grid



Pin 7-Heater

Pin 8-No
Connection

Cap-Plate

VOLTAGE-CONTROL SERVICE**Maximum Ratings, Design-Center Values:**

DC PLATE VOLTAGE 27000 max. volts

UNREGULATED DC SUPPLY VOLTAGE 55000 max. volts

GRID VOLTAGE:

DC value -125 max. volts

Peak value -550 max. volts

DC PLATE CURRENT 1.5 max. ma

PLATE DISSIPATION 25 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode . 180 max. volts

Heater positive with respect to cathode . 180 max. volts

Typical Operation As Shunt Voltage-Regulator Tube**In Accompanying Circuit:**

Unregulated Supply:

DC voltage 29800 36300 volts

Equivalent resistance 8 8 megohms

JUNE 14, 1954

TUBE DIVISION

TENTATIVE DATA

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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Voltage Divider Values:

R ₁ (5 watts)	120	220	megohms
R ₂ (2 watts)	1	1	megohm
R ₃ (1/2 watt)	2	3	megohms

Reference Voltage Supply:

DC value	500	500	volts
Equivalent resistance	1000	1000	ohms

Effective Grid-Plate Transconductance 138 116 μ mhos

DC Plate Current:

For load current of 0 ma	1055	1035	μ amp
For load current of 1 ma	100	100	μ amp

Regulated DC Output Voltage:

For load current of 0 ma	20000	27000	volts
For load current of 1 ma	19700	26500	volts

Maximum Circuit Values:

Grid-Circuit Resistance:

With unregulated supply having
an equivalent resistance of
at least 8 megohms 4 max. megohms

With unregulated supply having
an equivalent resistance less
than 8 megohms . . See accompanying curve

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	Min.	Max.	
Heater Current	1	0.54	0.66	amp
Grid Voltage (1)	1,2	-7	-	volts
Grid Voltage (2)	1,3	-	-40	volts
Grid-Voltage Change	1,4	-	9	volts

Note 1: With heater voltage of 6.3 volts ac or dc.

Note 2: With dc plate voltage of 30000 volts and dc plate current of 1 ma.

Note 3: With dc plate voltage of 30000 volts and dc plate current of 0.1 ma.

Note 4: Difference between grid voltage (1) and grid voltage (2).

OPERATING NOTES

Operation of the 6BD4-A with a plate voltage above approximately 16000 volts (absolute value) results in the production of x-rays which can constitute a health hazard on prolonged exposure at close range unless the tube is adequately shielded. Relatively simple shielding should prove adequate, but the need for this precaution should be considered in equipment design.

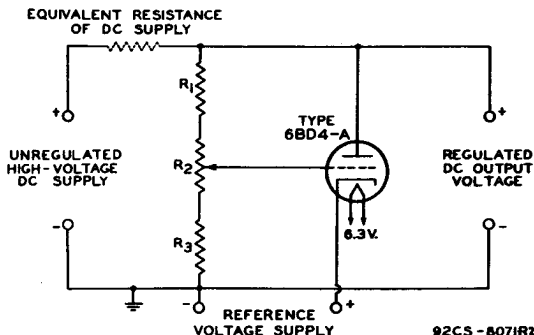


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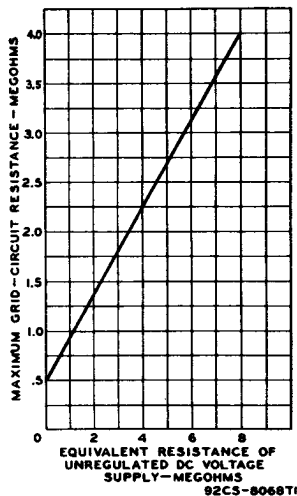
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SHUNT VOLTAGE-REGULATOR CIRCUIT



Typical performance data for this basic circuit with certain characteristics of the unregulated dc supply and related voltage-divider values are given in the above tabulated data. Other combinations are feasible within the maximum ratings and the maximum circuit values for the 6BD4-A.



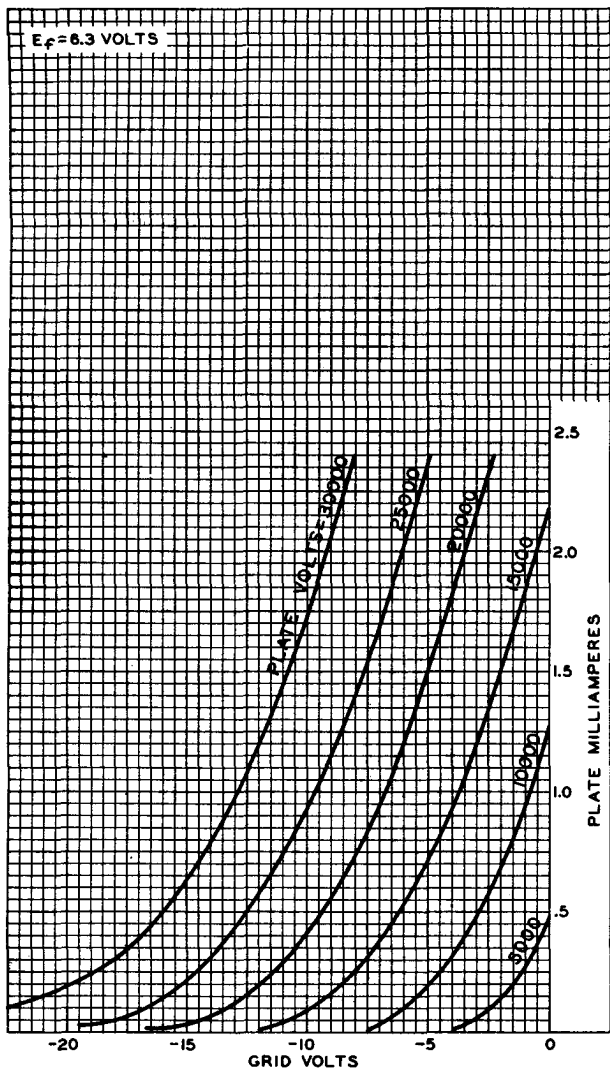
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AVERAGE TRANSFER CHARACTERISTICS



MAR. 11, 1954

TUBE DIVISION

92CM-8070R1

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY