6BD4-A

SHARP-CUTOFF BEAM TRIODE

HIGH-VOLTAGE, LOW-CURRENT, REGULATOR TYPE

Supersedes Type 6BD4

GENERAL DATA

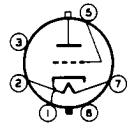
Electrical:

Heater, for Unipotential Cathode:		
Voltage	6.3	ac or dc volts
Current	0.6	amp
Direct Interelectrode Capacitances:		
Grid to Plate	1.0	μμf
Input	3.8	μμf
Output	0.04 max.	μμf
Amplification Factor	1650	

Mechanical:

Mounting Position	Any
Maximum Overall Length	5-1/8"
Seated Length	4-1/2" ± 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

6BD4-A

SHARP-CUTOFF BEAM TRIODE

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	μmhos
DC Plate Current:			
For load current of 0 ma	1055	1035	μamp
For load current of 1 ma	100	100	μamp
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).

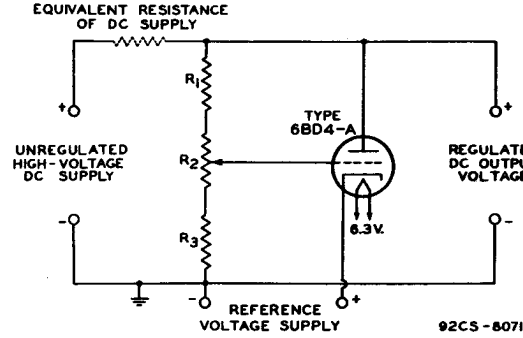
OPERATING NOTES

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.

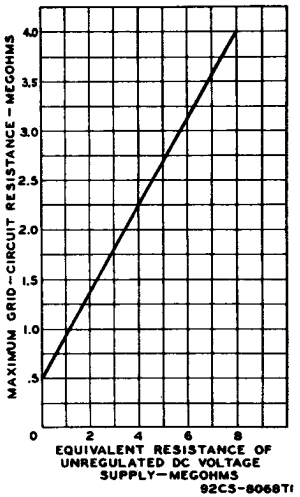
6BD4-A

SHARP-CUTOFF BEAM TRIODE

SHUNT VOLTAGE-REGULATOR CIRCUIT

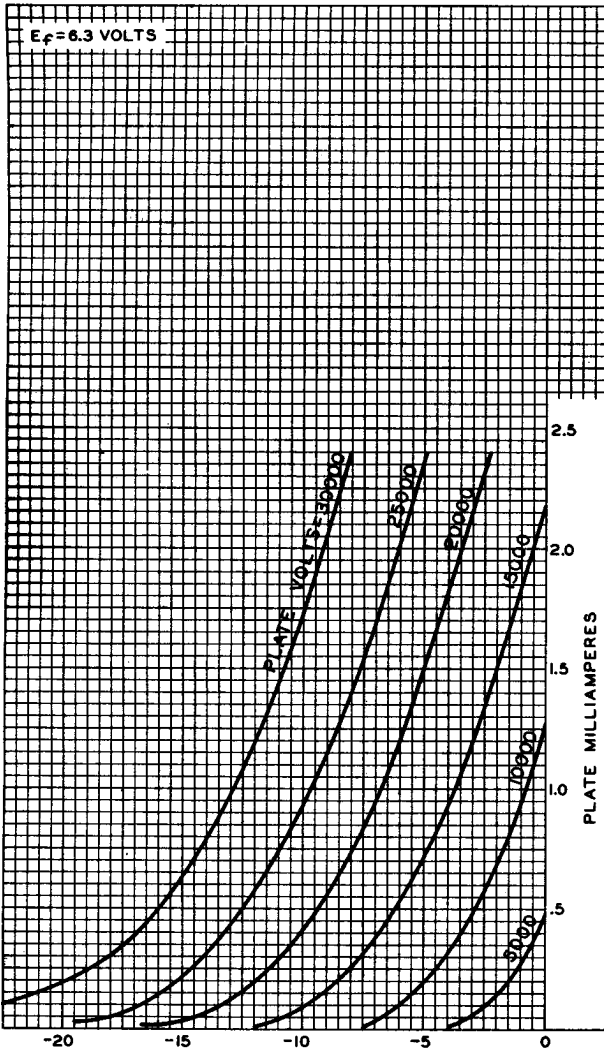


Typical performance data for this basic circuit with certain characteristics of the unregulated dc supply and related voltage-divider values are given in the above tabulated data. Other combinations are feasible within the maximum ratings and the maximum circuit values for the 6BD4-A.



6BD4-A

AVERAGE TRANSFER CHARACTERISTICS



MAR. 11, 1954
TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
92CM-8070RI