



6DS5

BEAM POWER TUBE

7-PIN MINIATURE TYPE

6DS5

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage 6.3 ac or dc volts

Current 0.8 amp

Direct Interelectrode Capacitances (Approx.):^oGrid No.1 to plate. 0.19 μ fGrid No.1 to cathode & grid No.3,
grid No.2, and heater 9.5 μ fPlate to cathode & grid No.3,
grid No.2, and heater 6.3 μ f

Mechanical:

Mounting Position Any

Maximum Overall Length. 2-5/8"

Maximum Seated Length 2-3/8"

Length, Base Seat to Bulb Top (Excluding tip). . . 2" $\pm$ 3/32"

Maximum Diameter. 3/4"

Dimensional Outline See General Section

Bulb. T5-1/2

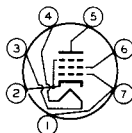
Base. Small-Button Miniature 7-Pin (JETEC No.E7-1)

Basing Designation for BOTTOM VIEW. 7BZ

Pin 1-Grid No.1

Pin 2-Cathode,
Grid No.3

Pin 3-Heater



Pin 4-Heater

Pin 5-Plate

Pin 6-Grid No.2

Pin 7-Grid No.1

AMPLIFIER - Class A₁

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE 250 max. volts

GRID-No.2 (SCREEN-GRID) VOLTAGE 250 max. volts

GRID-No.1 (CONTROL-GRID) VOLTAGE:

Positive bias value 0 max. volts

GRID-No.2 INPUT 2 max. watts

PLATE DISSIPATION 8 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode . . . 90 max. volts

Heater positive with respect to cathode . . . 90 max. volts

BULB TEMPERATURE (At hottest point

on bulb surface). 250 max. °C

Typical Operation and Characteristics:

Fixed-Bias Operation

Plate Voltage 200 250 volts

Grid-No.2 Voltage 200 200 volts

Grid-No.1 Voltage -7.5 -8.5 volts

Peak AF Grid-No.1 Voltage 7.5 8.5 volts

^o without external shield.

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BEAM POWER TUBE

Zero-Signal Plate Current	35	29	ma
Max.-Signal Plate Current	36	32	ma
Zero-Signal Grid-No.2 Current . . .	3	3	ma
Max.-Signal Grid-No.2 Current . . .	9	10	ma
Plate Resistance (Approx.)	28000	28000	ohms
Transconductance	6000	5800	μ mhos
Load Resistance	6000	8000	ohms
Total Harmonic Distortion	9	10	%
Max.-Signal Power Output	3	3.8	watts

Cathode-Bias Operation

Plate-Supply Voltage	200	250	volts
Grid-No.2 Supply Voltage	200	200	volts
Cathode Resistor	180	270	ohms
Peak AF Grid-No.1 Voltage	7.5	9.2	volts
Zero-Signal Plate Current	34.5	27	ma
Max.-Signal Plate Current	32.5	25	ma
Zero-Signal Grid-No.2 Current . . .	3.5	3	ma
Max.-Signal Grid-No.2 Current . . .	9	9	ma
Plate Resistance (Approx.)	28000	28000	ohms
Transconductance	6000	5800	μ mhos
Load Resistance	6000	8000	ohms
Total Harmonic Distortion	10	10	%
Max.-Signal Power Output	2.8	3.6	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

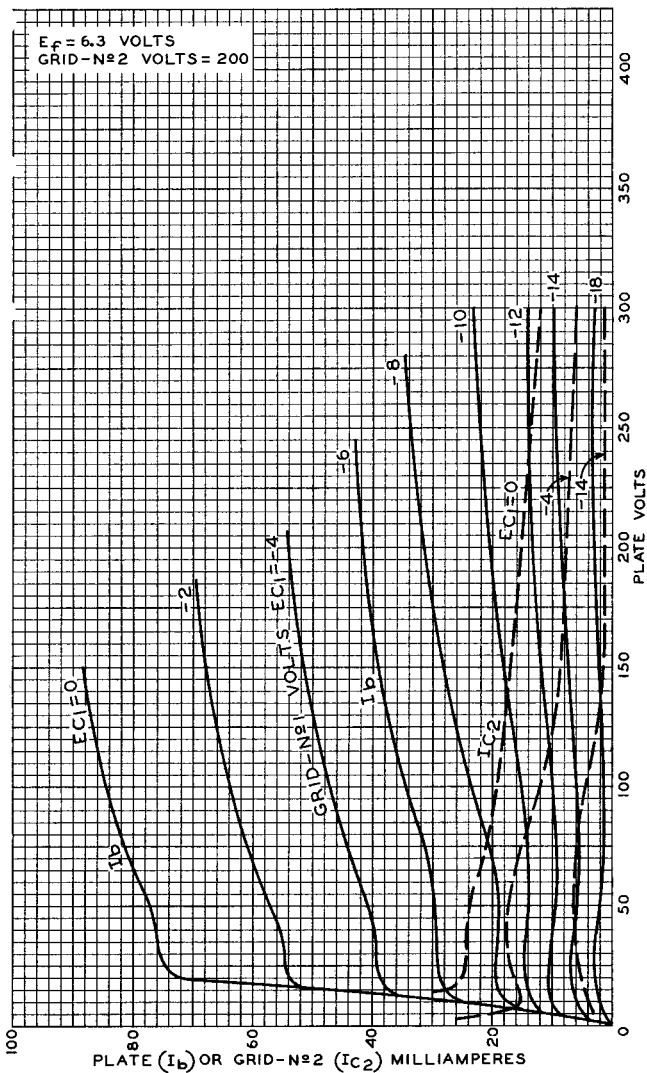
For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	1.0 max.	megohm



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AVERAGE CHARACTERISTICS



ELECTRON TUBE DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

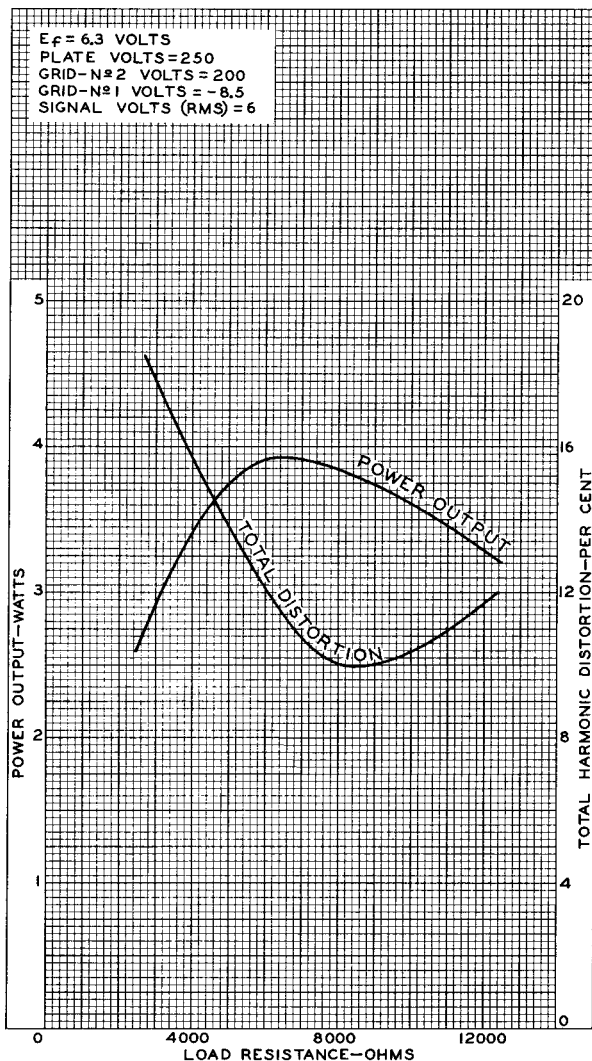
92CM-9292

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OPERATION CHARACTERISTICS



Beam Power Tube

7-PIN MINIATURE TYPE

For Audio Output Service in TV and Radio Receivers

ELECTRICAL CHARACTERISTICS – Bogey Values^a

Heater Voltage, ac or dc E_h	6.3	V
Heater Current I_h	0.8	A
Direct Interelectrode Capacitances: ^b		
Grid No.1 to plate c_{g1-p}	0.19	pF
Input: G1 to (K, G3, G2, H) . . c_i	9.5	pF
Output: P to (K, G3, G2, H) . . c_o	6.3	pF

TYPICAL OPERATION AND CHARACTERISTICS

Cathode-Bias Operation

For the following characteristics, see Conditions below:

Zero-Signal Plate Current . . . I_b	34.5	27	mA
Max.-Signal Plate Current . . . $I_{b(max.-sig.)}$	32.5	25	mA
Zero-Signal Grid-No.2 Current . I_{c2}	3.5	3	mA
Max.-Signal Grid-No.2 Current . $I_{c2(max.-sig.)}$	9	9	mA
Plate Resistance (Approx.) . . r_p	28000	28000	Ω
Transconductance g_m	6000	5800	μmho
Load Resistance R_l	6000	8000	Ω
Total Harmonic Distortion. . . D_t	10	10	%
Max.-Signal Power Output . . . P_o	2.8	3.6	W

Conditions:

Heater Voltage E_h	6.3	6.3	V
Plate Supply Voltage E_{bb}	200	250	V
Grid-No.2 Voltage E_{c2}	200	200	V
Cathode-Bias Resistor R_k	180	270	Ω
Peak AF Grid-No.1 Voltage . . e_{clm}	7.5	9.2	V

Fixed-Bias Operation

For the following characteristics, see Conditions below:

Zero-Signal Plate Current . . . I_b	35	29	mA
Max.-Signal Plate Current . . . $I_{b(max.-sig.)}$	36	32	mA
Zero-Signal Grid-No.2 Current . I_{c2}	3	3	mA
Max.-Signal Grid-No.2 Current . $I_{c2(max.-sig.)}$	9	10	mA
Plate Resistance (Approx.) . . r_p	28000	28000	Ω
Transconductance g_m	6000	5800	μmho
Load Resistance R_l	6000	8000	Ω

Total Harmonic Distortion.	D_t	9	10	%
Max.-Signal Power Output.	P_o	3	3.8	W
<i>Conditions:</i>				
Heater Voltage.	E_h	6.3	6.3	V
Plate Voltage.	E_b	200	250	V
Grid-No.2 Voltage.	E_{c2}	200	200	V
Grid-No.1 (Control-Grid) Voltage.	E_{c1}	-7.5	-8.5	V
Peak AF Grid-No.1 Voltage. . .	e_{c1m}	7.5	8.5	V

MECHANICAL CHARACTERISTICS

Dimensional Outline.	JEDEC 5-3			
Maximum Overall Length.	2.625 in (66.67 mm)			
Maximum Seated Length.	2.375 in (60.32 mm)			
Maximum Diameter.	0.750 in (19.05 mm)			
Bulb.	T 5-1/2			
Base.	Small-Button Miniature 7-Pin (JEDEC No.E7-1)			
Terminal Connections (See <i>TERMINAL DIAGRAM</i>).	JEDEC Designation 7BZ			
Type of Cathode.	Coated Unipotential			
Mounting Position.	Any			

MAXIMUM RATINGS — Design-Maximum Values^c

Plate Voltage.	E_b	275	V
Grid-No.2 Voltage.	E_{c2}	275	V
Grid-No.1 Voltage:			
Positive bias value.	E_{c1}	0	V
Plate Dissipation.	P_b	9	W
Grid-No.2 Input.	P_{g2}	2.2	V
Heater Voltage.	E_h	5.7 to 6.9	V
Heater-Cathode Voltage:			
Peak.	e_{hkm}	+200	V
DC.	E_{hk}	100	V
Envelope Temperature (At hottest point on envelope surface) . .	T_E	250	°C

MAXIMUM CIRCUIT VALUES

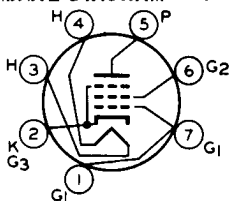
Grid-No.1-Circuit Resistance:	$\bar{R}_{g1(ckt)}$		
For fixed-bias operation.		0.1	MΩ
For cathode-bias operation.		1.0	MΩ

^a Unless otherwise specified.

^b Without external shield. Measured in accordance with the current issue of EIA Standard RS-191.

^c As defined in the current issue of EIA Standard RS-239.

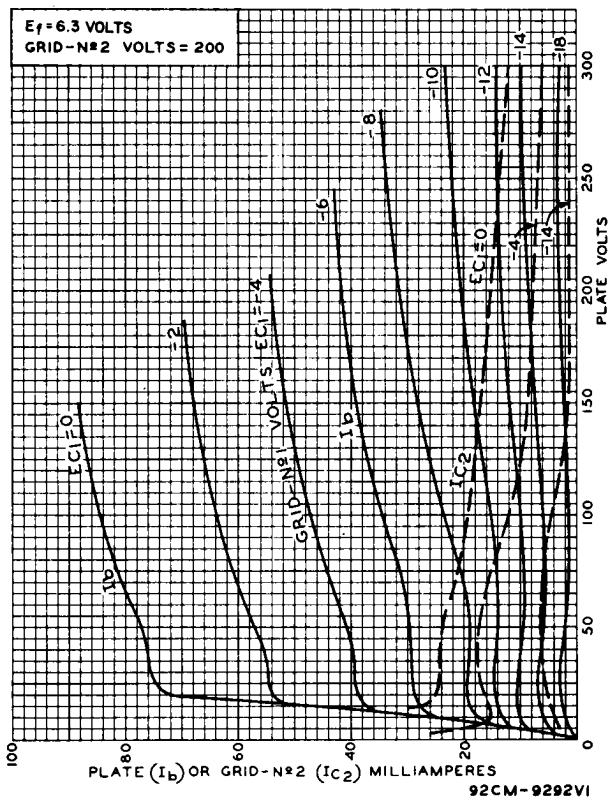
TERMINAL DIAGRAM - Bottom View



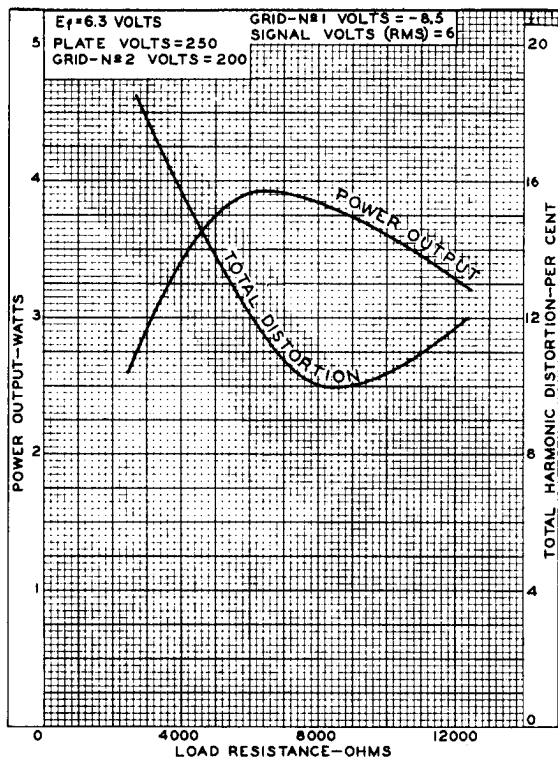
JEDEC 7BZ

- Pin 1 - Grid No.1
 Pin 2 - Cathode,
 Grid No.3
 Pin 3 - Heater
 Pin 4 - Heater
 Pin 5 - Plate
 Pin 6 - Grid No.2
 Pin 7 - Grid No.1

AVERAGE CHARACTERISTICS



OPERATION CHARACTERISTICS



92CM-9293VI