

Beam Power Tube— Sharp-Cutoff Pentode

For Combined FM Detector and Audio-Frequency
Output Amplifier Applications in TV Receivers

DUODECAR TYPE

Electrical:

Heater Characteristics and Ratings:

Voltage (AC or DC)	6.3 ± 0.6	volts
Current at heater volts = 6.3	0.9	amp
Peak heater-cathode voltage (Each unit):		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200 ^a max.	volts

Direct Interelectrode Capacitances (Approx.):^b

Beam Power Unit:

Grid No.1 to plate	0.26	pf
Input: G_{1B} to ($K_B + G_{3B}, G_{2B}, IS, H$)	11	pf
Output: P_B to ($K_B + G_{3B}, G_{2B}, IS, H$)	12	pf

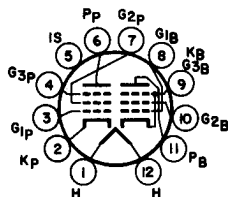
Pentode Unit:

G_{1P} to P_P	0.034	pf
G_{3P} to P_P	3.2	pf
G_{1P} to ($K_P, G_{2P}, G_{3P}, IS, H$)	6.5	pf
G_{3P} to ($K_P, G_{1P}, G_{2P}, P_P, IS, H$)	7.5	pf
G_{1P} to G_{3P}	0.24	pf
P_B to P_P	0.12	pf

Mechanical:

Operating Position	Any
Type of Cathodes	Coated Unipotential
Maximum Overall Length	2.625" ←
Seated Length	2.000" to 2.250" ←
Diameter	1.062" to 1.188"
Dimensional Outline (JEDEC 9-59)	See <i>General Section</i>
Bulb	T9
Base	Small-Button Duodecar 12-Pin (JEDEC No. E12-70)
Basing Designation for BOTTOM VIEW	12BU

- Pin 1—Heater
Pin 2—Pentode Cathode
Pin 3—Pentode Grid No.1
Pin 4—Pentode Grid No.3
Pin 5—Internal Shield
Pin 6—Pentode Plate
Pin 7—Pentode Grid No.2
Pin 8—Beam Power Grid No.1
Pin 9—Beam Power Cathode,
Beam Power Grid No.3
Pin 10—Beam Power Grid No.2
Pin 11—Beam Power Plate
Pin 12—Heater



^a The dc component must not exceed 100 volts.

^b without external shield.

← Indicates a change.



6AL11

Characteristics, Class A₁ Amplifier (Pentode Unit):

Plate Supply Voltage	150	volts
Grid-No.3	<i>Connected to cathode at socket</i>	
Grid-No.2 Supply Voltage	100	volts
Grid-No.1	<i>Connected to negative end of cathode resistor</i>	
Cathode Resistor	560	ohms
Plate Resistance (Approx.)	0.15	megohm
Transconductance, Grid No.1 to Plate	1000	μ hos
Transconductance, Grid No.3 to Plate	400	μ hos
Plate Current	1.3	ma
Grid-No.2 Current	2.1	ma
Grid-No.1 Voltage (Approx.) for plate μ a = 30	-4.5	volts
Grid-No.3 Voltage (Approx.) for plate μ a = 50	-4.5	volts

PENTODE UNIT — FM SOUND DETECTOR

Maximum Ratings, Design-Maximum Values:

Plate Voltage	330 max.	volts
Grid-No.3 (Suppressor-Grid) Voltage	28 max.	volts
Grid-No.2 (Screen-Grid) Supply Voltage	330 max.	volts
Grid-No.2 Voltage	<i>See Grid-No.2 Input Rating Chart at front of Receiving Tube Section</i>	
Grid-No.1 (Control-Grid) Voltage:		
Positive-bias value	0 max.	volts
Plate Dissipation	1.7 max.	watts
Grid-No.2 Input:		
For grid-No.2 voltages up to 165 volts	1.1 max.	watts
For grid-No.2 voltages between 165 and 330 volts	<i>See Grid-No.2 Input Rating Chart at front of Receiving Tube Section</i>	

BEAM POWER UNIT — AMPLIFIER — Class A₁

Maximum Ratings, Design-Maximum Values:

Plate Voltage	275 max.	volts
Grid-No.2 (Screen-Grid) Voltage	275 max.	volts
Plate Dissipation	10 max.	watts
Grid-No.2 Input	2 max.	watts

Typical Operation and Characteristics:

Plate Voltage	250	volts
Grid-No.2 Voltage	250	volts
Grid-No.1 (Control-Grid) Voltage	-8	volts
Peak AF Grid-No.1 Voltage	8	volts
Zero-Signal Plate Current	35	ma
Max.-Signal Plate Current	39	ma
Zero-Signal Grid-No.2 Current	2.5	ma
Max.-Signal Grid-No.2 Current	7	ma
Plate Resistance (Approx.)	0.1	megohm
Transconductance	6500	μ hos
Load Resistance	5000	ohms
Total Harmonic Distortion	10	per cent
Max.-Signal Power Output	4.2	watts

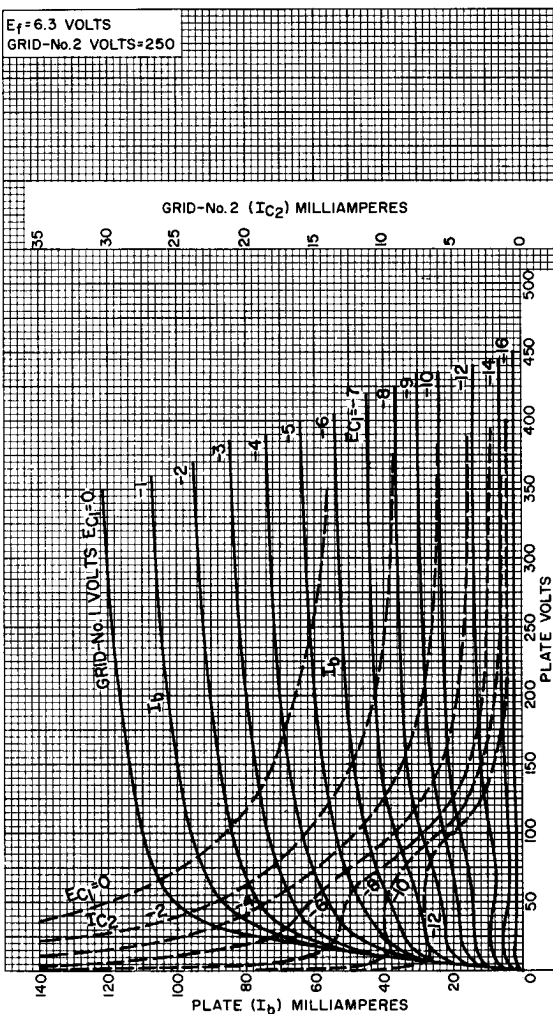
Maximum Circuit Values:

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.25 max.	megohm
For cathode-bias operation	0.5 max.	megohm



AVERAGE CHARACTERISTICS

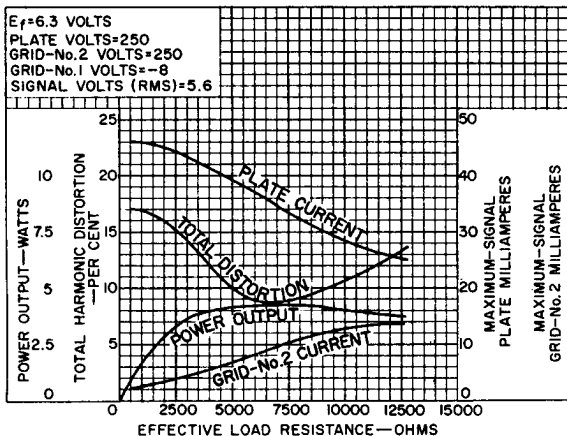
Beam Power Unit



92CM-12669

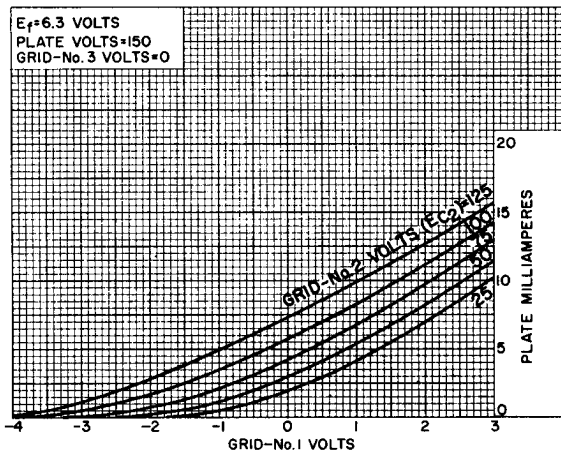


OPERATION CHARACTERISTICS Beam Power Unit



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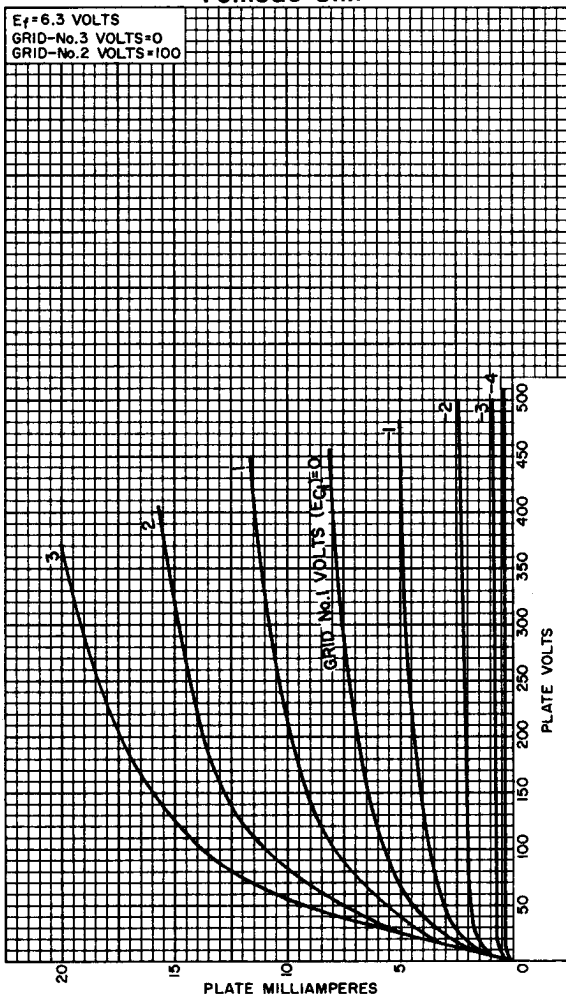
AVERAGE CHARACTERISTICS Pentode Unit



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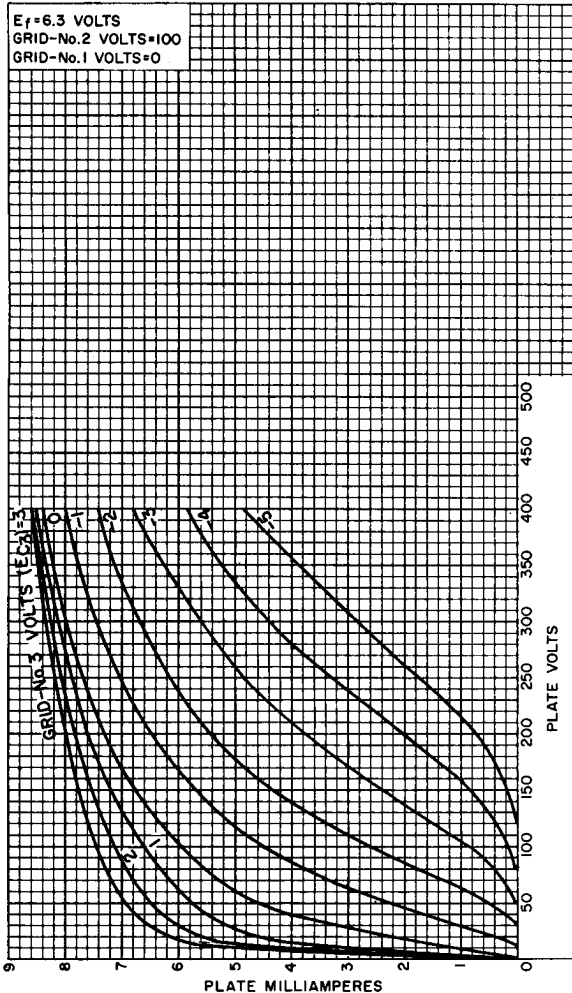
AVERAGE PLATE CHARACTERISTICS Pentode Unit



92CM-12671



AVERAGE PLATE CHARACTERISTICS Pentode Unit



92CM-12672

