

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

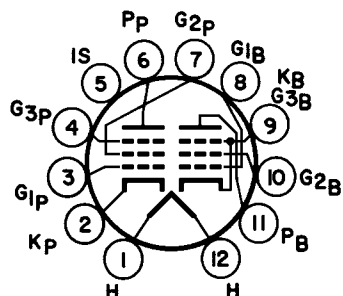
Pentode Unit:

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.



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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 mhos
Transconductance, Grid No.3 to Plate.	400	μ mhos
Plate Current	1.3	ma
Grid-No.2 Current	2.1	ma
Grid-No.1 Voltage (Approx.) for plate μ = 30	-4.5	volts
Grid-No.3 Voltage (Approx.) for plate μ = 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:

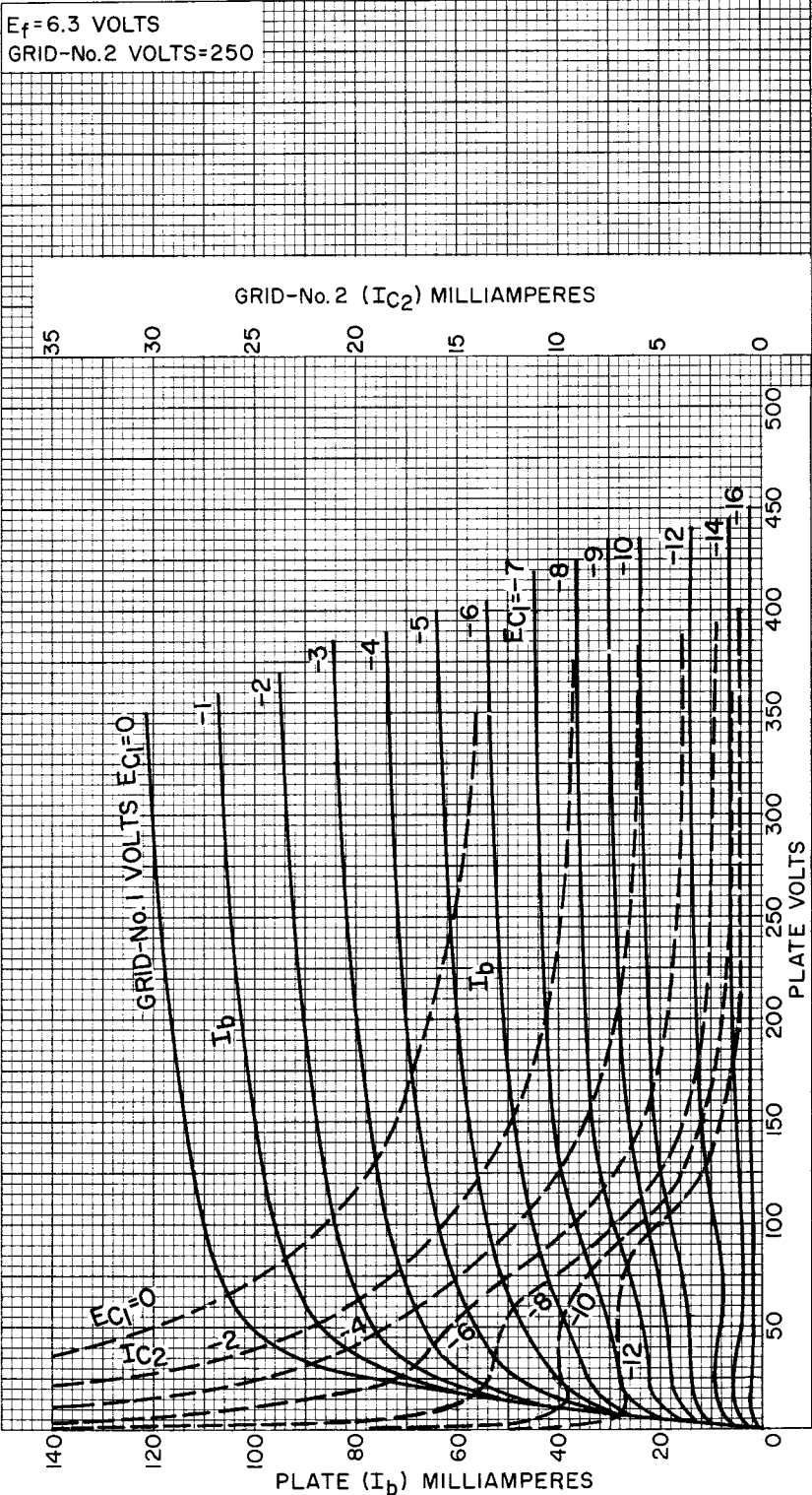
Plate Voltage	250	volts
Grid-No.2 Voltage	250	volts
Grid-No.1 (Control-Grid) Voltage.	-8	volts
Peak AF Grid-No.1 Voltage	8	volts
Zero-Signal Plate Current	35	ma
Max.-Signal Plate Current	39	ma
Zero-Signal Grid-No.2 Current	2.5	ma
Max.-Signal Grid-No.2 Current	7	ma
Plate Resistance (Approx.).	0.1	megohm
Transconductance.	6500	μ mhos
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



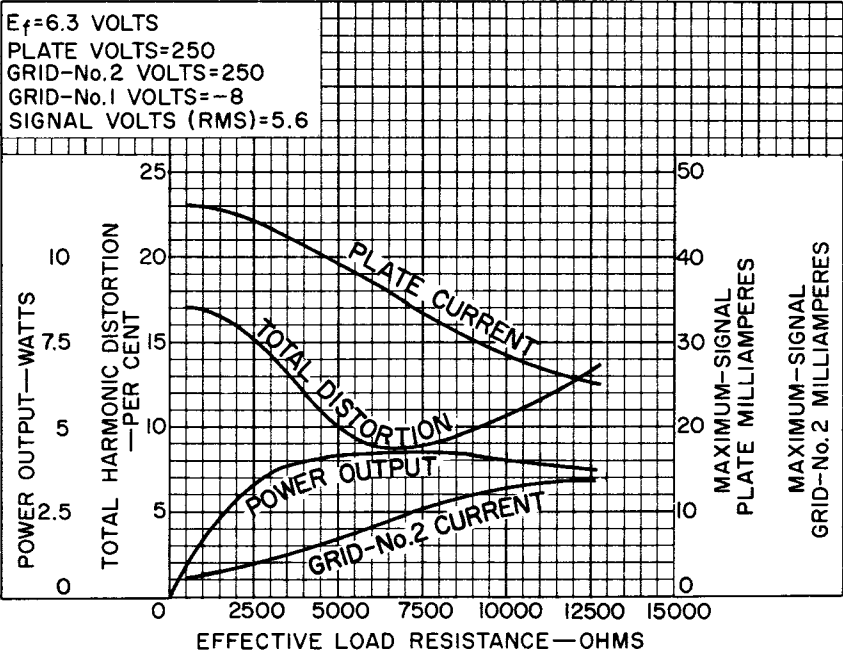
AVERAGE CHARACTERISTICS Beam Power Unit



92CM-12669

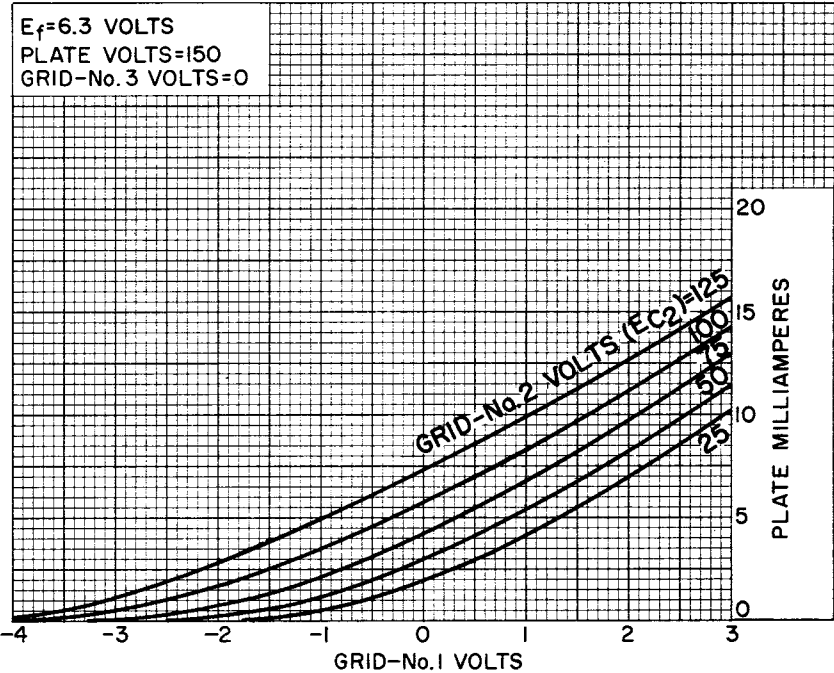


OPERATION CHARACTERISTICS
Beam Power Unit



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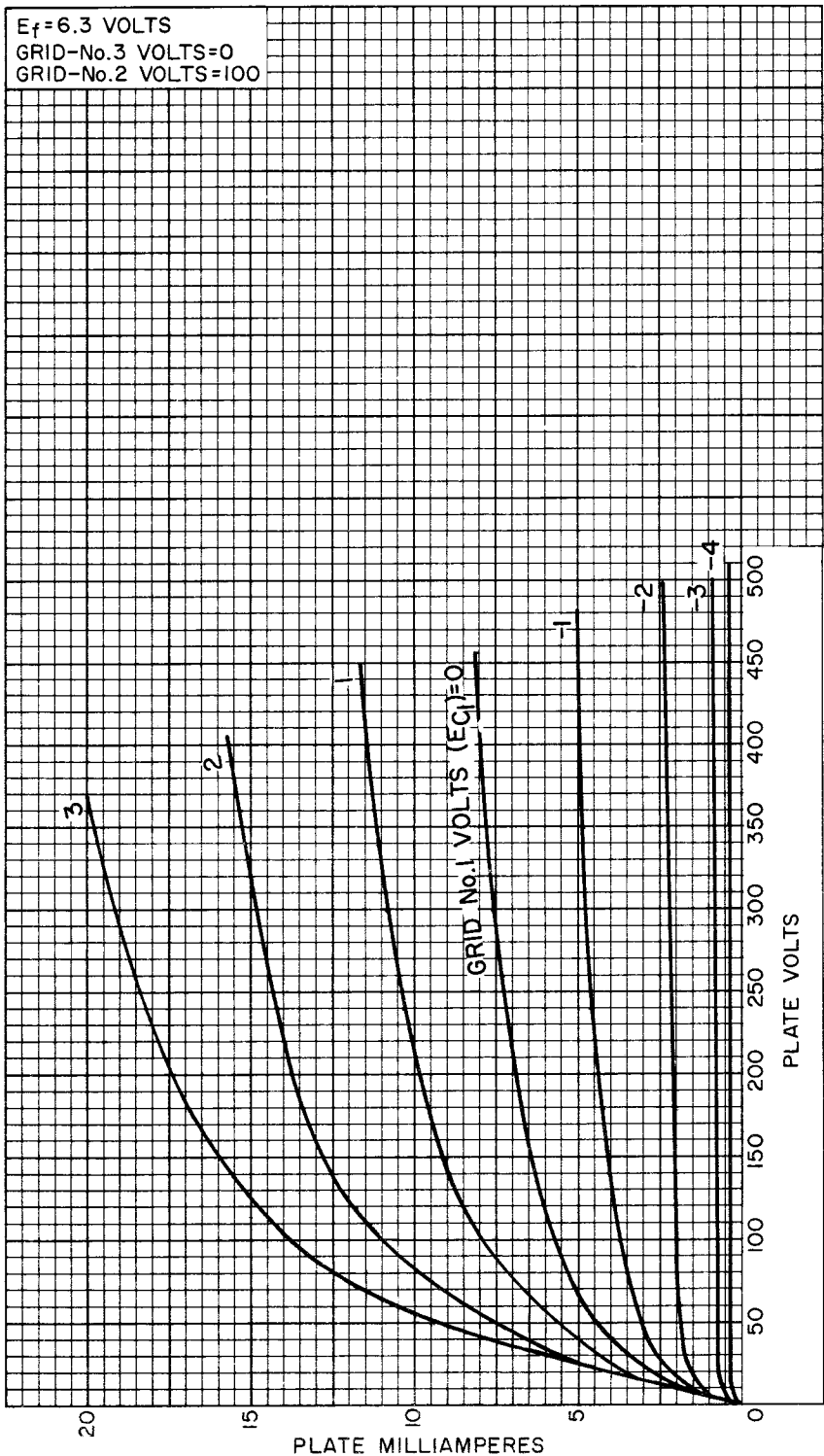
AVERAGE CHARACTERISTICS
Pentode Unit



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AVERAGE PLATE CHARACTERISTICS Pentode Unit

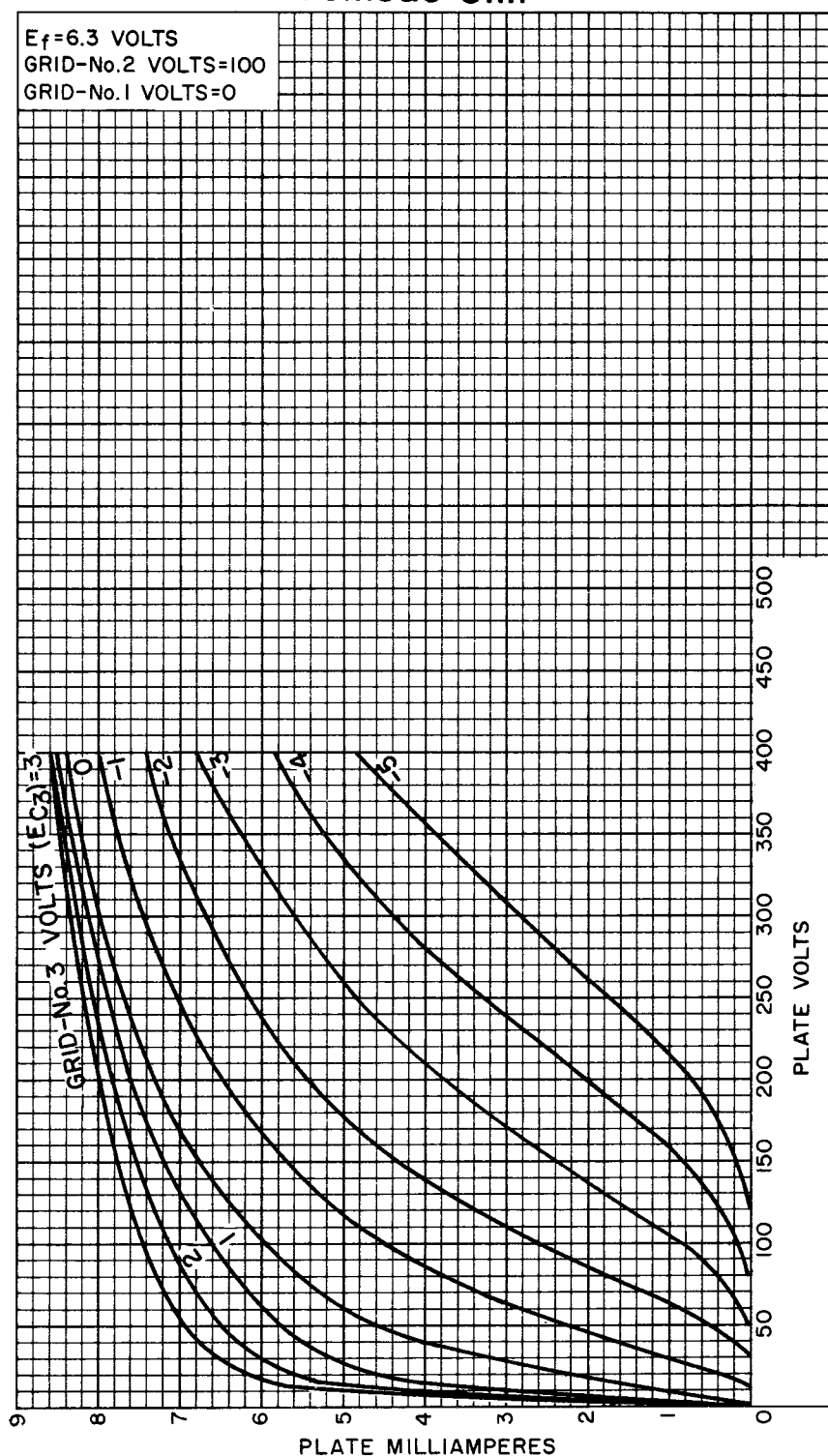


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AVERAGE PLATE CHARACTERISTICS Pentode Unit



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