



6AF4-A

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MEDIUM-MU TRIODE

MINIATURE TYPE

For UHF TV service

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage 6.3 ac or dc volts

Current 0.225 amp

Resonant Frequency (Approx.) 1000 Mc

Direct Interelectrode Capacitances (No external shield):

Grid to Plate 1.9 μmf

Grid to Cathode and Heater 2.2 μmf

Plate to Cathode and Heater 0.45 μmf

Characteristics - Class A₁ Amplifier:

Plate Voltage 80 100 volts

Cathode-Bias Resistor 150 150 ohms

Amplification Factor 15 16

Plate Resistance 2270 2130 ohms

Transconductance 6600 7500 μmhos

Plate Current 16 20 ma

Mechanical:

Mounting Position Any

Maximum Overall Length 1-3/4"

Maximum Seated Length 1-1/2"

Length, Base Seat to Bulb Top (Excluding tip) . 1-1/8" \pm 3/32"

Maximum Diameter 3/4"

Bulb T-5-1/2

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

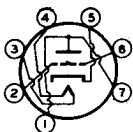
Basing Designation for BOTTOM VIEW 7DK

Pin 1 - Plate

Pin 2 - Grid

Pin 3 - Heater

Pin 4 - Heater



Pin 5 - Cathode

Pin 6 - Grid

Pin 7 - Plate

OSCILLATOR IN UHF TELEVISION RECEIVERS

Maximum Ratings, Design-Center Values:

DC PLATE VOLTAGE 150 max. volts

DC GRID VOLTAGE -50 max. volts

DC GRID CURRENT 8 max. ma

PLATE INPUT 2.5 max. watts

PLATE DISSIPATION 2.25 max. watts

DC CATHODE CURRENT 28 max. ma

PEAK HEATER-CATHODE VOLTAGE: ♦

Heater negative with respect to cathode . 50 max. volts

Heater positive with respect to cathode . 50[▲] max. volts

▲, ♦: See next page.

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Typical Operation as Oscillator at 950 Mc:

DC Plate Voltage	100	volts
DC Grid Voltage	-4	volts
<i>From a grid resistor of</i>	10000	ohms
DC Plate Current	22	ma
DC Grid Current (Approx.)	400	μ amp
Useful Power Output	160	mw

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias operation	Not recommended
For cathode-bias operation	0.5 max. megohm

◆ It is recommended that the heater be kept at cathode potential to minimize the effects of variation in the heater-to-cathode capacitance between tubes.

▲ The dc component must not exceed 25 volts.

OPERATING CONSIDERATIONS

The *mounting arrangement* should insure that the tube is held secure by its socket. Unless this recommendation is followed, the generated frequency may change by as much as 10 megacycles per second. A conventional miniature tube shield and an external clamping arrangement are recommended.

The *base pins* of the 6AF4-A fit the miniature 7-contact socket. The *socket* should be of the mica-filled, rubber, or ceramic type.

Medium-Mu Triode

7-PIN MINIATURE TYPE

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage (AC or DC)	6.3 ± 10%	volts
Current at 6.3 volts	0.225	amp

Direct Interelectrode Capacitance

(Approx.): ^a		
Grid to plate	1.9	μμf
Grid to cathode and heater	2.2	μμf
Plate to cathode and heater	1.4	μμf
Heater to cathode	2.2 ^b	μμf

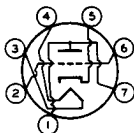
Characteristics, Class A₁ Amplifier:

Plate Supply Voltage	80	volts
Cathode Resistor	150	ohms
Amplification Factor	13.5	
Plate Resistance (Approx.)	2100	ohms
Transconductance	6500	μmhos
Plate Current	17.5	ma

Mechanical:

Operating Position	Any
Maximum Overall Length	1-3/4"
Maximum Seated Length	1-1/2"
Length, Base Seat to Bulb Top (Excluding tip)	1-1/8" ± 3/32"
Diameter	0.650" to 0.750"
Dimensional Outline	See <i>General Section</i>
Bulb	T5-1/2
Base	Small-Button Miniature 7-Pin (JEDEC No. E7-1)
Basing Designation for BOTTOM VIEW	7DK

Pin 1 - Plate
Pin 2 - Grid
Pin 3 - Heater
Pin 4 - Heater



Pin 5 - Cathode
Pin 6 - Grid
Pin 7 - Plate

UHF OSCILLATOR

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE	150	max.	volts
GRID VOLTAGE:			
Negative-bias value	50	max.	volts
GRID CURRENT	2	max.	ma
CATHODE CURRENT	24	max.	ma
PLATE DISSIPATION	2.5	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	50	max.	volts
Heater positive with respect to cathode	50 ^c	max.	volts

← Indicates a change.



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Typical Operation:

At frequency of 1000 Mc

Plate Supply Voltage.	100	volts
Plate Resistor.	220	ohms
Grid Resistor	10000	ohms
Plate Current	17	ma
Grid Current (Approx.).	750	μ a

Maximum Circuit Values:

Grid-Circuit Resistance:

- For fixed-bias operation. Not recommended
- For cathode-bias operation. 0.5 max. megohm

- ^a With external shield JEDEC No.316 connected to cathode except as noted.
- ^b With external shield JEDEC No.316 connected to plate.
- ^c The dc component must not exceed 25 volts.



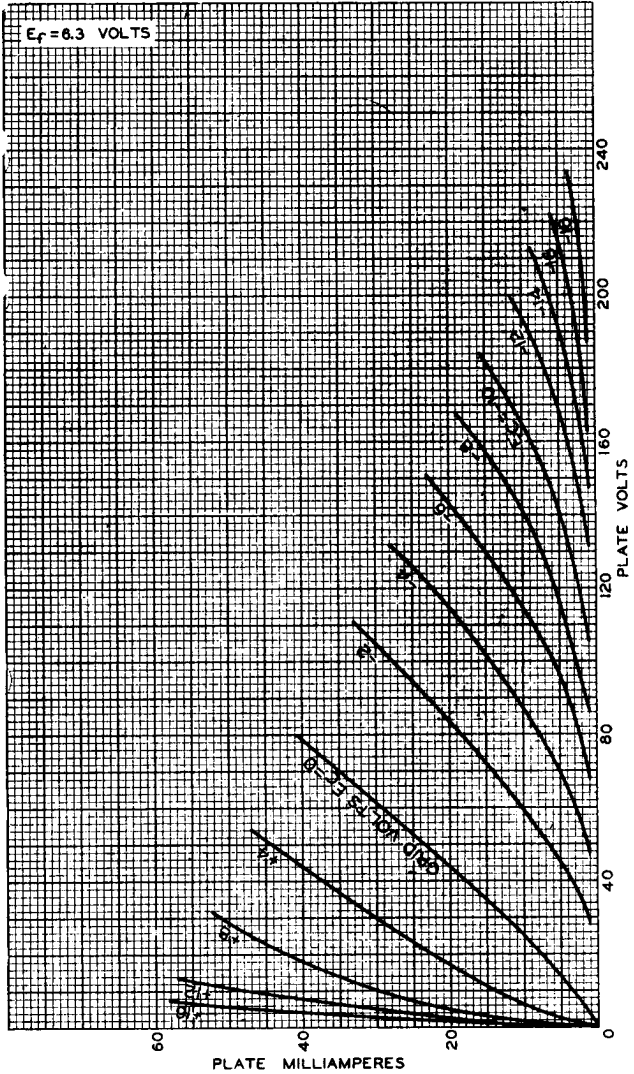


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AVERAGE PLATE CHARACTERISTICS

$E_f = 6.3$ VOLTS

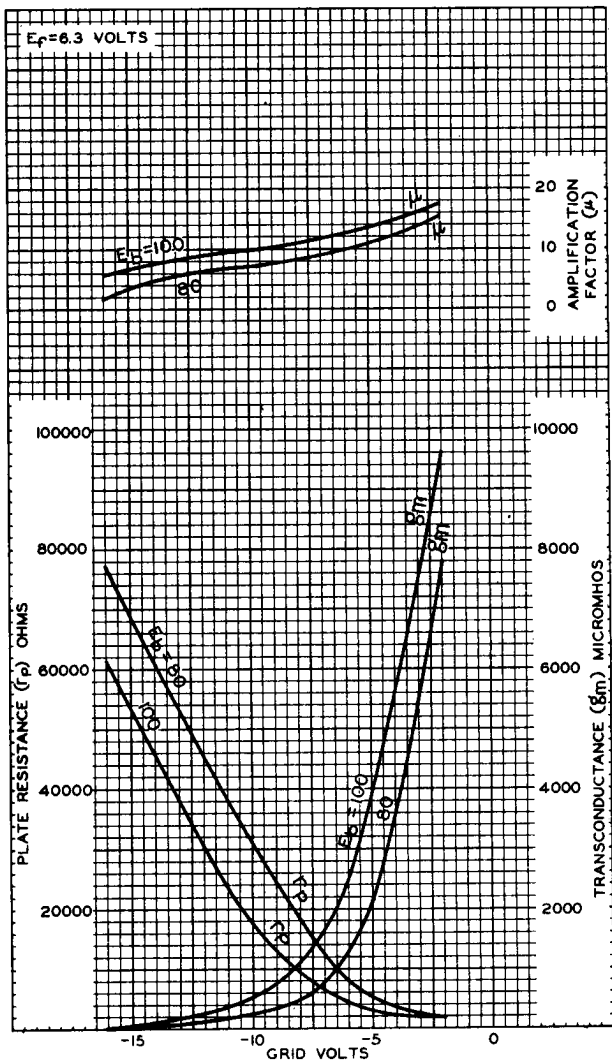


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AVERAGE CHARACTERISTICS

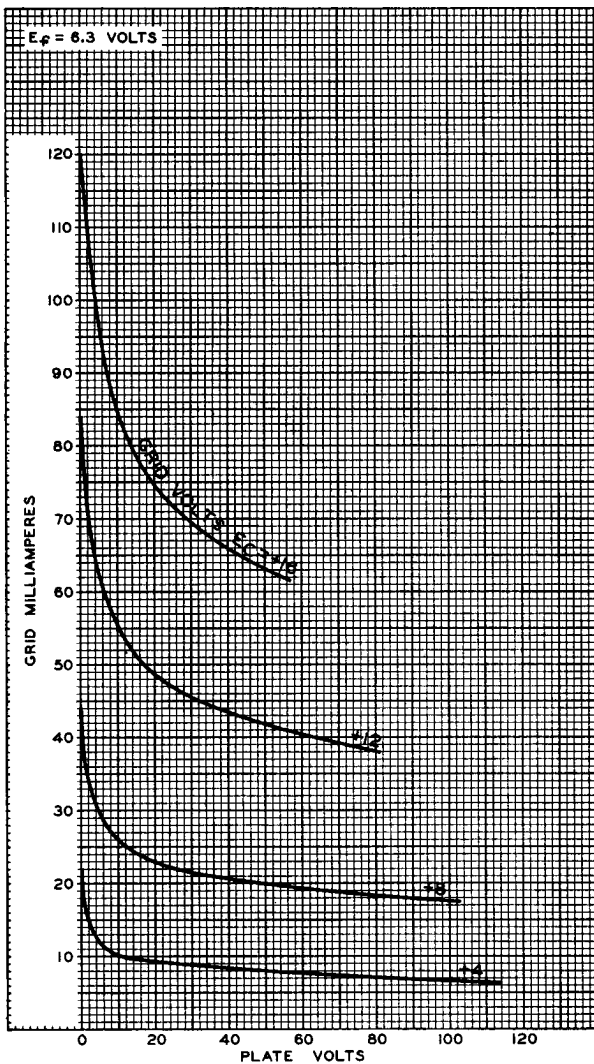




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AVERAGE CHARACTERISTICS

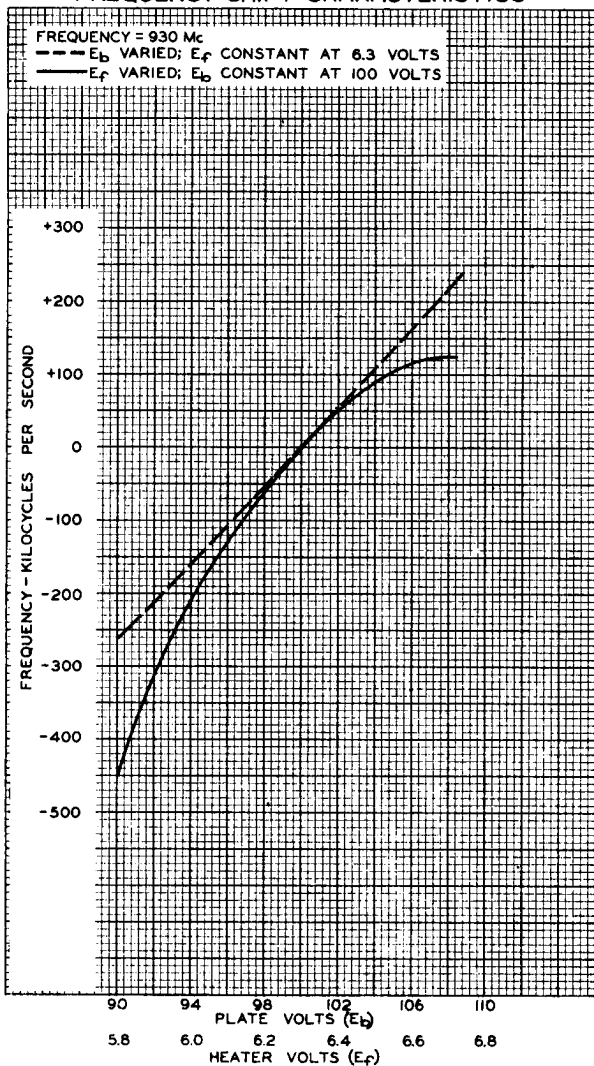


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FREQUENCY SHIFT CHARACTERISTICS



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TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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