



12BH7-A

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MEDIUM-MU TWIN TRIODE

9-PIN MINIATURE TYPE

Intended for use in equipment having
series heater-string arrangement

GENERAL DATA

Electrical:

Heater, for Unipotential Cathodes:

Heater arrangement	Series	Parallel	
Voltage	12.6	6.3	ac or dc volts
Current	0.3	0.6	amp
Warm-up time (Average)	—	11	sec

For definition of heater warm-up time and method of determining it, see sheet HEATER WARM-UP TIME MEASUREMENT at front of this Section.

Direct Interelectrode Capacitances (Approx.):^o

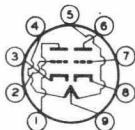
	Unit No.1	Unit No.2	
Grid to plate	2.6	2.6	$\mu\mu\text{f}$
Grid to cathode and heater	3.2	3.2	$\mu\mu\text{f}$
Plate to cathode and heater	0.5	0.4	$\mu\mu\text{f}$
Plate of unit No.1 to plate of unit No.2	0.8		$\mu\mu\text{f}$

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	7/8"
Bulb	T-6-1/2
Base	Small-Button Noval 9-Pin (JETEC No.E9-1)

Basing Designation for BOTTOM VIEW 9A

Pin 1-Plate of Unit No.2	Pin 6-Plate of Unit No.1
Pin 2-Grid of Unit No.2	Pin 7-Grid of Unit No.1
Pin 3-Cathode of Unit No.2	Pin 8-Cathode of Unit No.1
Pins 4 & 9-Heater of Unit No.2	Pin 9-Heater Mid-Tap
Pins 5 & 9-Heater of Unit No.1	



AMPLIFIER - Class A₁

Values are for Each Unit

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE	300 max. volts
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^o Without external shield.

MAR. 1, 1955

TUBE DIVISION

TENTATIVE DATA 1

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



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GRID VOLTAGE:

Negative bias value	50 max.	volts
Positive bias value	0 max.	volts

CATHODE CURRENT 20 max. ma

PLATE DISSIPATION 3.5 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode .	200 max.	volts
Heater positive with respect to cathode .	200▲max.	volts

Characteristics:

Plate Voltage	250	volts
Grid Voltage	-10.5	volts
Amplification Factor	16.5	
Plate Resistance (Approx.)	5300	ohms
Transconductance	3100	μmhos
Plate Current	11.5	ma
Plate Current for grid voltage of -14 volts	4	ma
Grid Voltage (Approx.) for plate current of 50 μamp	-23	volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias operation	0.25 max.	megohm
For cathode-bias operation	1.0 max.	megohm

HORIZONTAL DEFLECTION OSCILLATOR

Values are for Each Unit

Maximum Ratings, Design-Center Values:

For operation in a 525-line, 30-frame system[□]

DC PLATE VOLTAGE 450 max. volts

PEAK NEGATIVE-PULSE GRID VOLTAGE[▲] 600 max. volts

CATHODE CURRENT:

Peak	300 max.	ma
Average	20 max.	ma

PLATE DISSIPATION 3.5 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode .	200 max.	volts
Heater positive with respect to cathode .	200▲max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias, grid-resistor bias, or cathode-bias operation	2.2 max.	megohms
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▲ This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

▲, □: See next page.



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MEDIUM-MU TWIN TRIODE

VERTICAL DEFLECTION OSCILLATOR

Values are for Each Unit

Maximum Ratings, Design-Center Values:

For operation in a 525-line, 30-frame system[□]

DC PLATE VOLTAGE	450 max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE	400 max.	volts
CATHODE CURRENT:		
Peak	70 max.	ma
Average	20 max.	ma
PLATE DISSIPATION	3.5 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200 [▲] max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias, grid-resistor bias, or
cathode-bias operation 2.2 max. megohms

VERTICAL DEFLECTION AMPLIFIER

Values are for Each Unit

Maximum Ratings, Design-Center Values Except as Noted:

For operation in a 525-line, 30-frame system[□]

DC PLATE VOLTAGE	450 max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE [#]		
(Absolute Maximum)	1500 [■] max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE	250 max.	volts
CATHODE CURRENT:		
Peak	70 max.	ma
Average	20 max.	ma
PLATE DISSIPATION	3.5 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200 [▲] max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For cathode-bias operation 2.2 max. megohms

[▲] The dc component must not exceed 100 volts.

[□] As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

[#] This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.

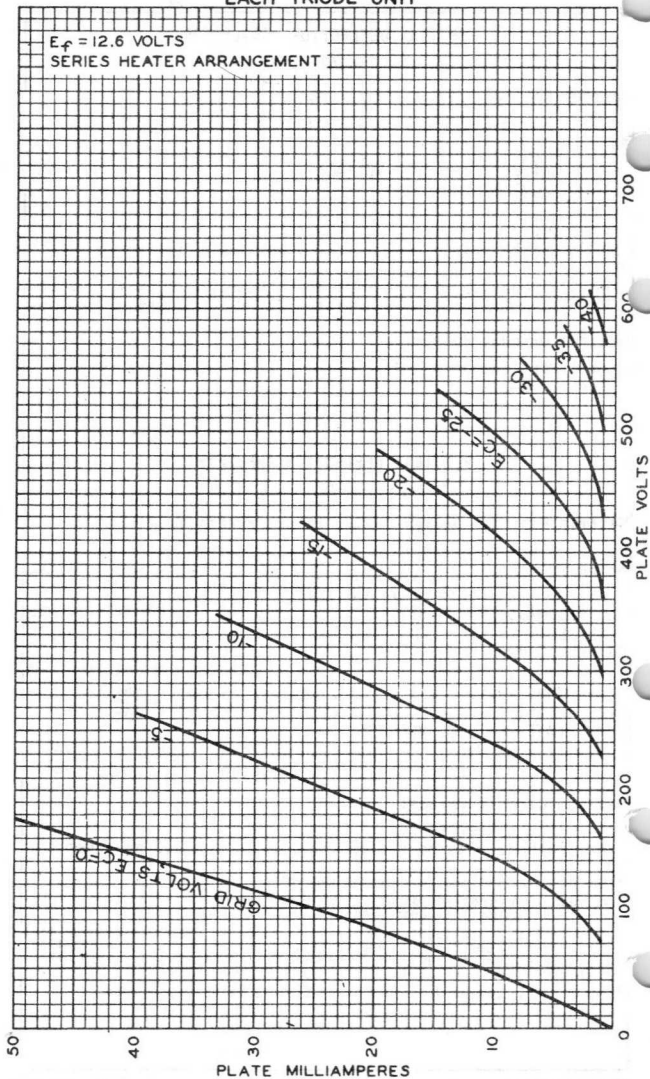
[■] Under no circumstances should this absolute value be exceeded.

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AVERAGE PLATE CHARACTERISTICS EACH TRIODE UNIT



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PLATE MILLIAMPERES
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