



502-A THYRATRON GAS TETRODE TYPE

502-A

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage.	6.3	ac or dc volts
Current.	0.6	amp

Cathode:

Heating Time, prior to tube conduction. . .	10	sec
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Direct Interelectrode Capacitance (Approx.):

Grid No.1 to Anode . . .	0.2	μmf
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Ionization Time (Approx.). . .	5	μsec
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Deionization Time (Approx.)	1000	μsec
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Maximum Critical Grid-

No.1 Current. . .	4	μamp
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Anode Voltage Drop (Approx.)	11	volts
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Approximate Control Characteristics

(With 0.1-megohm grid-No.1 resistor):

Peak Anode Voltage	30	100	650	volts
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Grid-No.1 Voltage.	0	-1.5	-3.75	volts
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Grid-No.2 Voltage.	0	0	0	volts
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Mechanical:

Mounting Position.	Any
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Maximum Overall Length	2-5/8"
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Seated Length.	1-31/32" $\pm$ 3/32"
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Maximum Diameter	1-5/16"
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Bulb	Metal Shell MT-8
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Base	Small-Wafer Octal 8-Pin
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Basing Designation for BOTTOM VIEW	6BS
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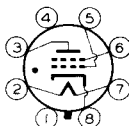
Pin 1 - No Connection

Pin 2 - Heater

Pin 3 - Anode

Pin 4 - No Connection

Pin 5 - Grid No.1



Pin 6 - Grid No.2

Pin 7 - Heater

Pin 8 - Cathode,
Shell

RELAY and GRID-CONTROLLED RECTIFIER SERVICE

Maximum Ratings, Absolute Values:

PEAK ANODE VOLTAGE:

Forward.	650 max.	volts
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Inverse.	1300 max.	volts
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GRID-No.2 (SHIELD-GRID) VOLTAGE:

Peak, before anode conduction.	-100 max.	volts
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Average, during anode conduction [□] . . .	-5 max.	volts
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GRID-No.1 (CONTROL-GRID) VOLTAGE:

Peak, before anode conduction.	-200 max.	volts
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Average, during anode conduction [□] . . .	-10 max.	volts
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[□] See next page.

← Indicates a change.

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CATHODE CURRENT:

Peak	1.0 max.	amp
Average [□]	0.1 max.	amp
Surge, for duration of 0.1 sec. max. . .	10 max.	amp

GRID-No.2 CURRENT:

Average [□]	10 max.	ma
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GRID-No.1 CURRENT:

Average [□]	10 max.	ma
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PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode.	100 max.	volts
Heater positive with respect to cathode.	25 max.	volts

AMBIENT TEMPERATURE RANGE. -55 to +90 °C

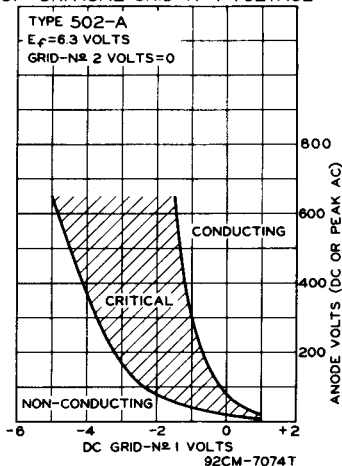
[□] Averaged over any interval of 30 sec. max.



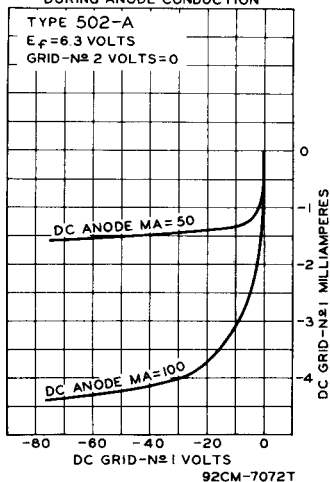
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OPERATIONAL RANGE OF CRITICAL GRID-N₂1 VOLTAGE



AVERAGE GRID CHARACTERISTICS DURING ANODE CONDUCTION



SEPT. 30, 1948

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

CE-7074T-7072T



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502-A GAS THYRATRON

NEGATIVE-CONTROL TETRODE TYPE WITH METAL SHELL

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

	Min.	Avg.	Max.	
Voltage	5.7	6.3	7	ac or dc volts
Current at 6.3 volts	-	0.6	0.66	amp

Cathode:

Minimum heating time				
prior to tube conduction	10			sec

Direct Interelectrode Capacitances:

Grid No.1 to anode	0.2			μf
Grid No.1 to cathode & shell, grid				
No.2, and heater	2.5			μf
Ionization Time (Approx.)	0.5			μsec

Deionization Time (Approx.):

For conditions: dc anode $m_a = 100$, grid-No.1-circuit resistor (ohms) = 1000, and dc grid-No.1 supply volts = -250	10			μsec
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For conditions: dc anode $m_a = 100$, grid-No.1-circuit resistor (ohms) = 1000, and dc grid-No.1 supply volts = -15	150			μsec
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Maximum Critical Grid-No.1 Current:

For conditions: anode volts (rms) = 460, and dc grid-No.1 volts ad- justed to cutoff	2			μamp
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Anode Voltage Drop	8			volts
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Mechanical:

Mounting Position Any

Maximum Overall Length 2-5/8"

Seated Length 1-31/32" $\pm$ 3/32"

Maximum Diameter 1-5/16"

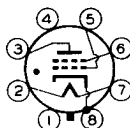
Weight (Approx.) 2 oz

Bulb Metal Shell MT8G

Base Small-Wafer Octal 8-Pin (JETEC No.B8-21)

BOTTOM VIEW

Pin 1 - No Connec-
tion
Pin 2 - Heater
Pin 3 - Anode
Pin 4 - No Connec-
tion



Pin 5 - Grid No.1
Pin 6 - Grid No.2
Pin 7 - Heater
Pin 8 - Cathode,
Shell

RELAY and GRID-CONTROLLED RECTIFIER SERVICE

Maximum Ratings, Absolute Values:

PEAK ANODE VOLTAGE:

Forward	180 max.	650 max.	volts
Inverse	360 max.	1300 max.	volts

← Indicates a change.

MAY 1, 1955

TUBE DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

DATA

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GAS THYRATRON

GRID-No.2 (SHIELD-GRID)

VOLTAGE:

Peak, before tube conduction	-100 max.	-100 max.	volts
Average [■] , during tube conduction	-5 max.	-5 max.	volts

GRID-No.1 (CONTROL-GRID)

VOLTAGE:

Peak, before tube conduction	-250 max.	-250 max.	volts
Average [■] , during tube conduction	-10 max.	-10 max.	volts

CATHODE CURRENT:

Peak	1.0 max.	1.0 max.	amp
Average [●]	0.2 max.	0.1 max.	amp
Fault, for duration of 0.1 second max.	10 max.	10 max.	amp

GRID-No.2 CURRENT:

Average [■]	+0.01 max.	+0.01 max.	amp
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GRID-No.1 CURRENT:

Average [■]	+0.01 max.	+0.01 max.	amp
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PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode . . .	100 max.	100 max.	volts
Heater positive with respect to cathode . . .	25 max.	25 max.	volts

AMBIENT-TEMPERATURE RANGE. .	-55 to +90	-55 to +90	°C
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■ Averaged over 1 cycle.

● Averaged over any interval of 30 seconds maximum.

For Dimensional Outline, see GENERAL SECTION

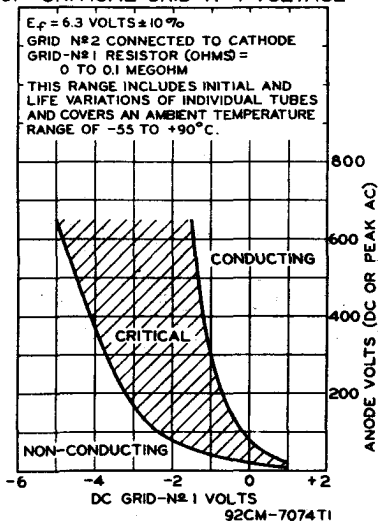


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GAS THYRATRON

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OPERATIONAL RANGE OF CRITICAL GRID-№1 VOLTAGE



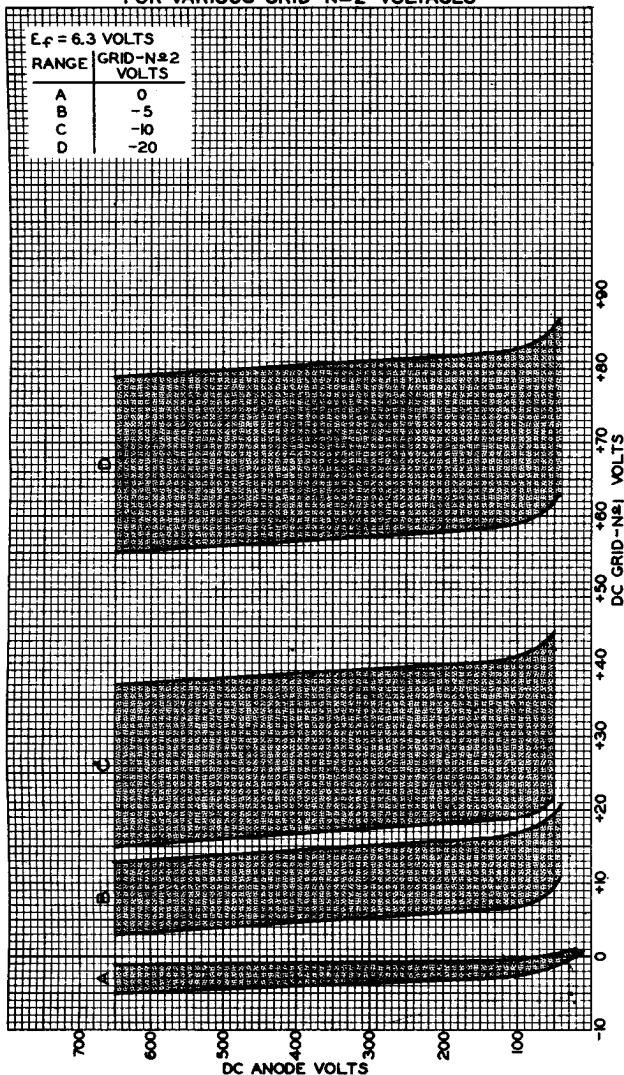
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502-A OPERATIONAL RANGES OF CRITICAL GRID-N₂1 VOLTAGE FOR VARIOUS GRID-N₂2 VOLTAGES

$E_f = 6.3$ VOLTS

RANGE	GRID-N ₂ 2 VOLTS
A	0
B	-5
C	-10
D	-20

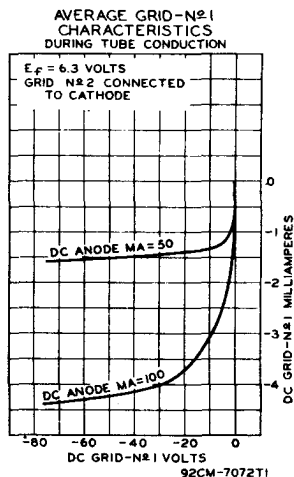
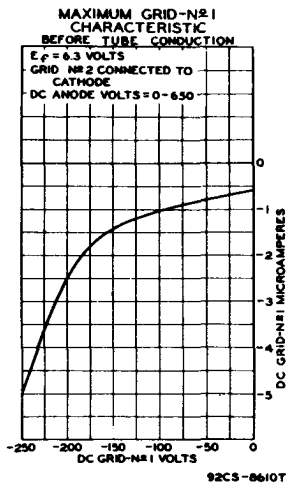




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CHARACTERISTIC CURVES



MAY 1, 1955

TUBE DIVISION
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