502-A
THYRATRON
GAS TETRODE TYPE

GENERAL DATA

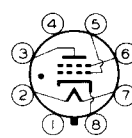
Electrical:

Heater, for Unipotential Cathode:				
Voltage	6.3			ac or dc volts
Current	0.6			amp
Cathode:				
Heating Time, prior to tube conduction	10			sec
Direct interelectrode Capacitance (Approx.):				
Grid No.1 to Anode	0.2			μμf
Ionization Time (Approx.)	5			μsec
Deionization Time (Approx.)	1000			μsec
Maximum Critical Grid-No.1 Current	4			μamp
Anode Voltage Drop (Approx.)	11			volts
Approximate Control Characteristics (With 0.1-megohm grid-No.1 resistor):				
Peak Anode Voltage	30	100	650	volts
Grid-No.1 Voltage	0	-1.5	-3.75	volts
Grid-No.2 Voltage	0	0	0	volts

Mechanical:

Mounting Position	Any
Maximum Overall Length	2-5/8" ←
Seated Length	1-31/32" ± 3/32" ←
Maximum Diameter	1-5/16" ←
Bulb	Metal Shell MT-8 ←
Base	Small-Wafer Octal 8-Pin
Basing Designation for BOTTOM VIEW	6BS

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
Inverse	1300 max.	volts
GRID-No.2 (SHIELD-GRID) VOLTAGE:		
Peak, before anode conduction	-100 max.	volts
Average, during anode conduction□	-5 max.	volts
GRID-No.1 (CONTROL-GRID) VOLTAGE:		
Peak, before anode conduction	-200 max.	volts
Average, during anode conduction□	-10 max.	volts

□ 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
GRID-No.1 CURRENT:		
Average[□]	10 max.	ma
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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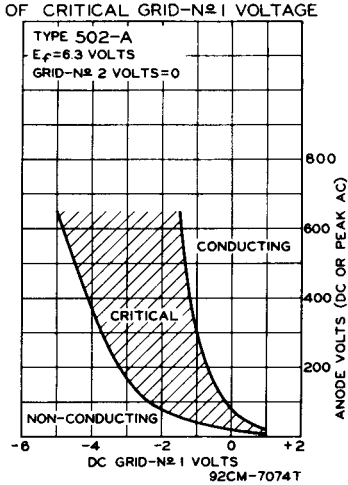
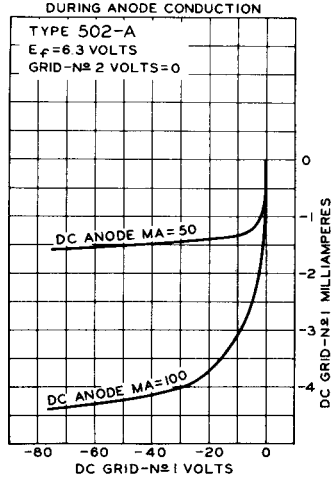
OPERATIONAL RANGE
OF CRITICAL GRID-№1 VOLTAGE



AVERAGE GRID CHARACTERISTICS
DURING ANODE CONDUCTION



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GAS THYRATRON

NEGATIVE-CONTROL TETRODE TYPE WITH METAL SHELL

GENERAL DATA

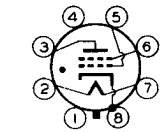
Electrical:

	Min.	Av.	Max.	
Heater, for Unipotential Cathode:				
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	μμf
Grid No.1 to cathode & shell, grid No.2, and heater			2.5	μμf
Ionization Time (Approx.)			0.5	μsec
Deionization Time (Approx.):				
For conditions: dc anode ma = 100, grid-No.1-circuit resistor (ohms) = 1000, and dc grid-No.1 supply volts = -250			10	μsec
For conditions: dc anode ma = 100, grid-No.1-circuit resistor (ohms) = 1000, and dc grid-No.1 supply volts = -15			150	μsec
Maximum Critical Grid-No.1 Current:				
For conditions: anode volts (rms) = 460, and dc grid-No.1 volts adjusted to cutoff			2	μamp
Anode Voltage Drop			8	volts

Mechanical:

Mounting Position	Any
Maximum Overall Length	2-5/8"
Seated Length	1-31/32" ± 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 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	180 max.	650 max.	volts
Inverse	360 max.	1300 max.	volts

← Indicates a change.

RCA

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

■ Averaged over 1 cycle.

● Averaged over any interval of 30 seconds maximum.

For Dimensional Outline, see GENERAL SECTION

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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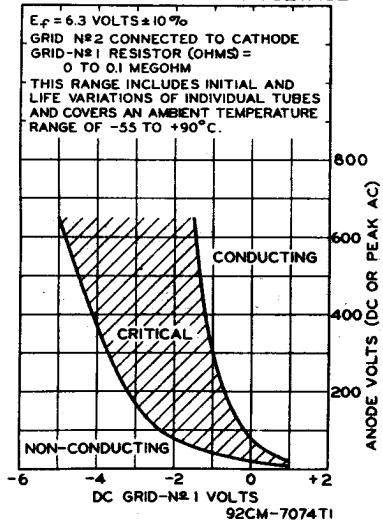
GAS THYRATRON

OPERATIONAL RANGE
OF CRITICAL GRID-№1 VOLTAGE



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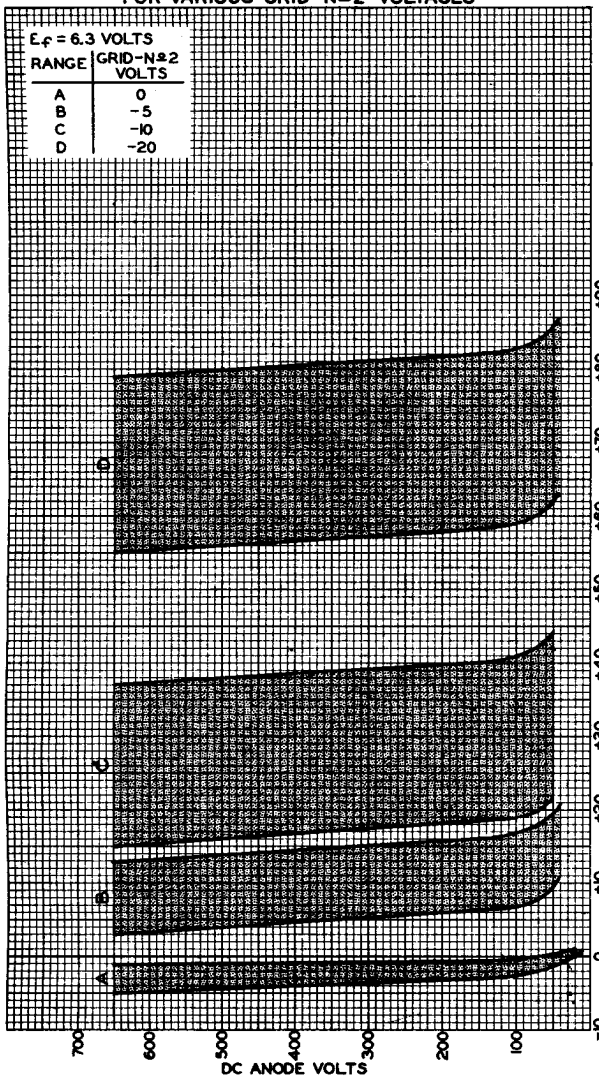
OPERATIONAL RANGES OF CRITICAL GRID-№1 VOLTAGE FOR VARIOUS GRID-№2 VOLTAGES



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CHARACTERISTIC CURVES