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## THYRATRON

GAS TETRODE

## GENERAL DATA

## Electrical:

	<u>Min.</u>	<u>Average</u>	<u>Max.</u>	
Heater, for Unipotential Cathode:				
Voltage (AC or DC) . . . . .	5.7	6.3	6.9	volts
Current, with heater volts = 6.3	0.54	0.60	0.66	amp

## Cathode:

Heating Time, prior to tube conduction . . . . .	10	-	-	sec
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## Direct Interelectrode Capacitances (Approx.):\*

Grid No.1 to Anode . . . . .		0.26		$\mu$ f
Input . . . . .		4.2		$\mu$ f
Output . . . . .		3.6		$\mu$ f

## Ionization Time (Approx.):

For conditions: dc anode volts = 100; grid-No. 1 square-pulse volts = 50; and peak anode amp. during conduction = 1.0 . . . . .		0.5		$\mu$ sec
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## Deionization Time (Approx.):

For conditions: dc anode volts = 125; grid-No. 1 volts = -250; grid-No. 1 resistor (ohms) = 1000; dc anode amp. = 0.1 . . . . .		50		$\mu$ sec
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For conditions: dc anode volts = 125; grid-No. 1 volts = -10; grid-No. 1 resistor (ohms) = 1000; dc anode amp. = 0.1 . . . . .		100		$\mu$ sec
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Maximum Critical Grid Current, with ac anode-supply volts (rms) = 450, and average anode amp. = 0.1 . . . . .		0.5		$\mu$ amp
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Tube Voltage Drop (Approx.) . . . . .		8		volts
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Grid-No.1 Control Ratio (Approx.) with grid-No. 1 resistor (megohms) = 0; grid-No.2 volts = 0 . . . . .		250		
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Grid-No.2 Control Ratio (Approx.) with grid-No. 1 resistor (megohms) = 0; grid-No.2 resistor (megohms) = 0; grid-No. 1 volts = 0 . . . . .		800		
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\* without external shield.

## Mechanical:

Mounting Position . . . . .		Any		
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Maximum Overall Length . . . . .		4-1/8"		
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Maximum Seated Length . . . . .		3-9/16"		
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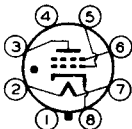
Maximum Diameter . . . . .		1-9/16"		
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Bulb . . . . .		ST-12		
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Base . . . . .		Small-Shell Octal 8-Pin		
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Basing Designation for BOTTOM VIEW . . . . .		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

← Indicates a change.

JUNE 15, 1948

TUBE DEPARTMENT

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

DATA



# 2050 THYRATRON

## RELAY and GRID-CONTROLLED RECTIFIER SERVICE

### Maximum Ratings, Absolute Values:

<b>PEAK ANODE VOLTAGE:</b>			
Forward . . . . .	180 max.	650 max.	volts
Inverse . . . . .	360 max.	1300 max.	volts
<b>GRID-No.2 (SHIELD-GRID) VOLTAGE:</b>			
Peak, before anode conduction . . . . .	-100 max.	-100 max.	volts
Average, during anode conduction <sup>■</sup> . . . . .	-10 max.	-10 max.	volts
<b>GRID-No.1 (CONTROL-GRID) VOLTAGE:</b>			
Peak, before anode conduction . . . . .	-250 max.	-250 max.	volts
Average, during anode conduction <sup>■</sup> . . . . .	-10 max.	-10 max.	volts
<b>CATHODE CURRENT:</b>			
Peak . . . . .	1.0 max.	1.0 max.	amp
Average <sup>■</sup> . . . . .	0.2 max.	0.1 max.	amp
Surge, for duration of 0.1 sec. max. . . . .	10 max.	10 max.	amp
<b>GRID-No.2 CURRENT:</b>			
Average <sup>■</sup> . . . . .	+0.01 max.	+0.01 max.	amp
<b>GRID-No.1 CURRENT:</b>			
Average <sup>■</sup> . . . . .	+0.01 max.	+0.01 max.	amp
<b>PEAK HEATER-CATHODE VOLTAGE:</b>			
Heater negative with respect to cathode. . . . .	100 max.	100 max.	volts
Heater positive with respect to cathode. . . . .	25 max.	25 max.	volts
<b>AMBIENT TEMPERATURE RANGE.</b> . . . . .	-75 to +90	-75 to +90	°C

### Typical Operating Conditions for Relay Service:

RMS Anode Voltage. . . . .	117 . .	400 . .	volts
Grid-No.2 Voltage. . . . .	0 . .	0 . .	volts
RMS Grid-No.1 Bias Voltage . . . . .	5 <sup>□</sup> . .	- . .	volts
DC Grid-No.1 Bias Voltage. . . . .	- . .	-6 . .	volts
Peak Grid-No.1 Signal Voltage. . . . .	5 . .	6 . .	volts
Grid-No.1-Circuit Resistance . . . . .	1.0 . .	1.0 . .	megohm
Anode-Circuit Resistance#. . . . .	1200 . .	2000 . .	ohms

### Maximum Circuit Values:

<b>Grid-No.1-Circuit Resistance:</b>		
For average anode current below 0.1 amp.	10 max.	megohms
For average anode current above 0.1 amp.	2 max.	megohms

■ Averaged over any interval of 30 sec. max.

□ Approximately 180° out of phase with the anode voltage.

# Sufficient resistance, including the tube load, must be used under any conditions of operation to prevent exceeding the current ratings.

→ Indicates a change.

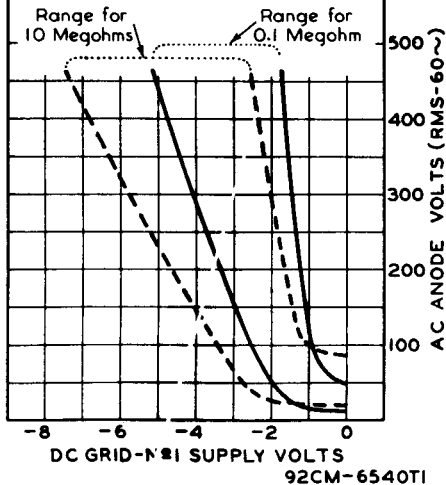


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## OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

TYPE 2050 GRID-N#2 VOLTS=0  
RANGES SHOWN ARE FOR TWO VALUES  
OF GRID RESISTOR—0.1 MEG. AND 10  
MEG.—AND TAKE INTO ACCOUNT INITIAL  
DIFFERENCES BETWEEN INDIVIDUAL  
TUBES & SUBSEQUENT DIFFERENCES  
DURING TUBE LIFE, FOR A HEATER-  
VOLTAGE RANGE OF 5.7 TO 6.9 VOLTS

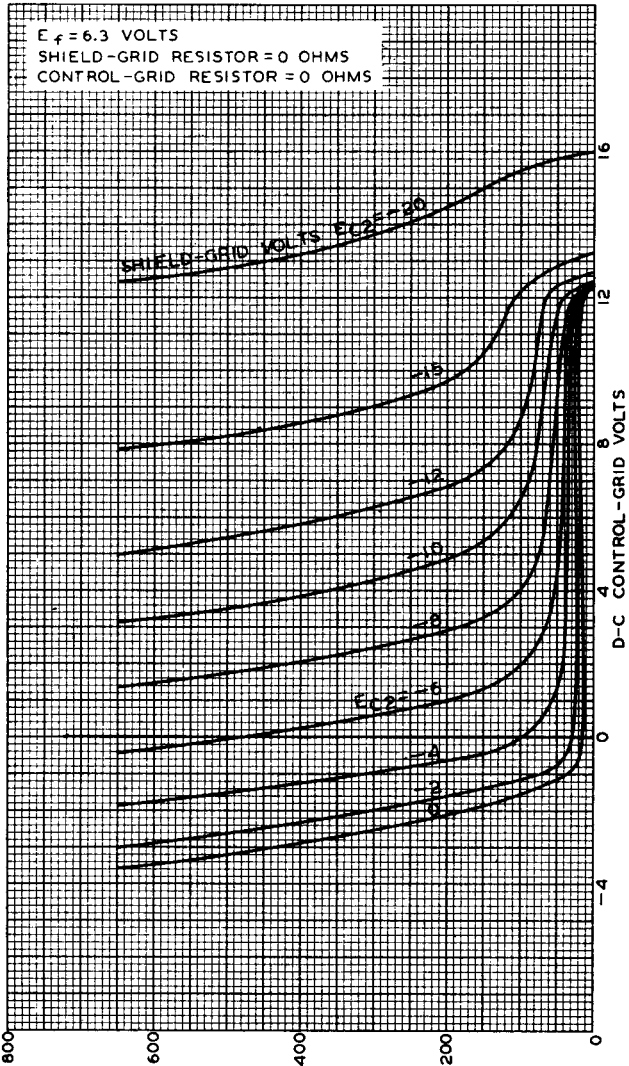




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### AVERAGE CONTROL CHARACTERISTICS



MAY 3, 1944

D-C ANODE VOLTS  
RCA VICTOR DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6274RI

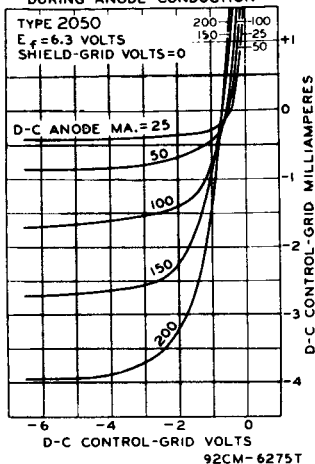
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THYRATRON

AVERAGE GRID CHARACTERISTICS DURING ANODE CONDUCTION



AVERAGE GRID CHARACTERISTICS BEFORE ANODE CONDUCTION

