



2050

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THYRATRON

GAS TETRODE

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:	Min.	Av.	Max.	
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

Direct Interelectrode Capacitances (Approx.):*

Grid No.1 to Anode	0.26	μmf
Input	4.2	μmf
Output	3.6	μmf

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	μsec

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	μsec

For conditions: dc anode volts = 125; grid-No. 1		
volts = -10; grid-No. 1 resistor (ohms) = 1000;		
dc anode amp. = 0.1	100	μsec

Maximum Critical Grid Current, with ac anode-		
supply volts (rms) = 460, and average anode		
amp. = 0.1	0.5	μamp

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

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

* 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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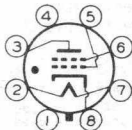
Maximum Diameter	1-9/16"
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Bulb	ST-12
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Base	Small-Shell Octal 8-Pin
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Basing Designation for BOTTOM VIEW	6BS
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Pin 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



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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
GRID-No.2 (SHIELD-GRID) VOLTAGE:			
Peak, before anode conduction.	-100 max.	-100 max.	volts
Average, during anode conduction [■]	-10 max.	-10 max.	volts
GRID-No.1 (CONTROL-GRID) VOLTAGE:			
Peak, before anode conduction.	-250 max.	-250 max.	volts
Average, during anode conduction [■]	-10 max.	-10 max.	volts
CATHODE CURRENT:			
Peak	1.0 max.	1.0 max.	amp
Average [■]	0.2 max.	0.1 max.	amp
Surge, for duration of 0.1 sec. 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.	-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 [□] . .	- . .	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:

Grid-No.1-Circuit Resistance:			
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.

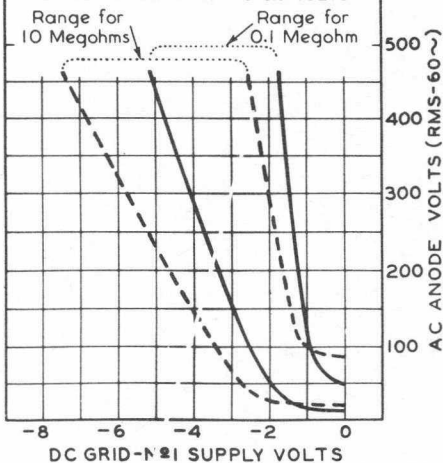


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OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

TYPE 2050 GRID-N₂ 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



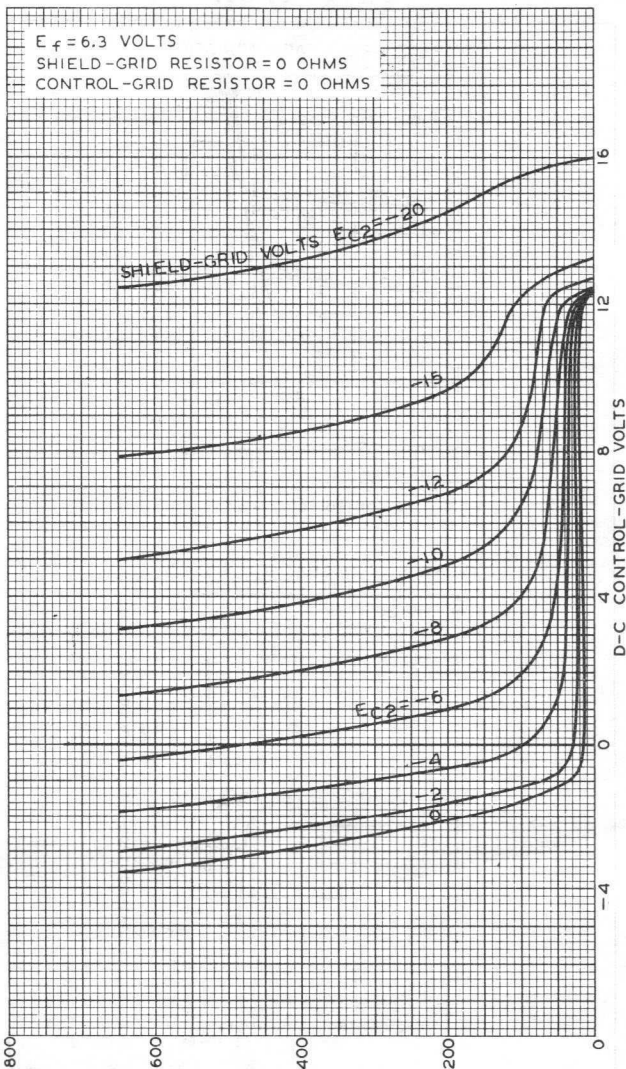
92CM-6540T1



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AVERAGE CONTROL CHARACTERISTICS



MAY 3, 1944

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

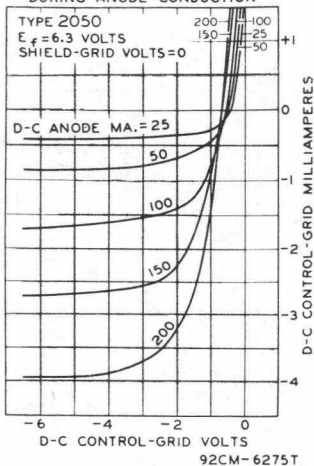
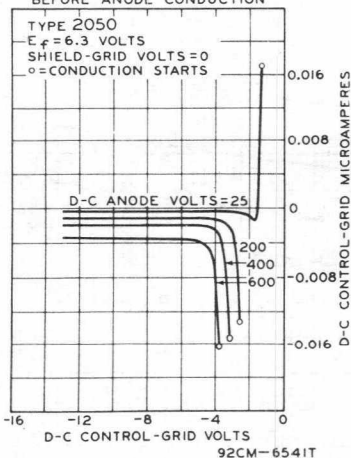
92CM-6274R1

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THYRATRON

AVERAGE GRID CHARACTERISTICS
DURING ANODE CONDUCTIONAVERAGE GRID CHARACTERISTICS
BEFORE ANODE CONDUCTION

APRIL 1, 1944

RCA VICTOR DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY92CM-6275T
92CM-6541T